Uluslararası ANADOLU Sosyal Bilimler Dergisi

International Anatolian Journal of Social Sciences

e-ISSN: 2619-9475

https://dergipark.org.tr/tr/pub/ulasbid

Araştırma Makalesi / Research Article *2024, Cilt: 8, Sayı: 2, Sayfalar: 347-364*

DOI: https://doi.org/10.47525/ulasbid.1471379

EMPOWERING UNIVERSITY STUDENTS: UNLEASHING EFFECTIVE STRATEGIES TO COMBAT ANXIETY THROUGH COGNITIVE EMOTION REGULATION PROGRAM

ÜNİVERSİTE ÖĞRENCİLERİNİ GÜÇLENDİRMEK: BİLİŞSEL DUYGU DÜZENLEME PROGRAMI YOLUYLA KAYGI VE DEPRESYONLA MÜCADELEDE ETKİLİ STRATEJİLERİN ORTAYA ÇIKARILMASI

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Geliş Tarihi / Date Applied **20.04.2024**

Kabul Tarihi / Date Accepted **07.06.2024**

ABSTRACT

This study aims to explore the efficacy of a cognitive emotion regulation program tailored for university students grappling with anxiety. The program, designed to equip participants with effective cognitive emotion regulation strategies, employed a pre-test, post-test experimental framework encompassing both experimental and control groups. Evaluation of the program's effectiveness drew upon the Beck Depression Inventory, Beck Anxiety Inventory, and Cognitive Emotion Regulation Scale. The research engaged a total of 20 undergraduate university students—10 in each experimental and control group. Across 14 sessions lasting 90 minutes each, the program unfolded. Data analysis involved the Mann-Whitney U Test and Wilcoxon Signed Ranks Test. The outcomes unveiled a notable discrepancy in depression reduction between the experimental and control groups, favoring the former. Moreover, the program exhibited a dual benefit by enhancing cognitive emotion regulation strategies while concurrently diminishing anxiety levels among the experimental group. These findings robustly underscore the program's efficacy. The program's noteworthy contributions prompt its potential application within university psychological counseling centers and group therapy sessions for university students.

Keywords: Anxiety, Depression, Cognitive emotion regulation, University students, Program.

ÖZET

Bu çalışmanın amacı, kaygı yaşayan üniversite öğrencilerine yönelik hazırlanan bilişsel duygu düzenleme stratejileri kazandırma programının etkililiğinin incelenmesidir. Bilişsel duygu düzenleme stratejileri kazandırmayı amaçlayan program, deney ve kontrol gruplu ön-test, sontest deneysel deseninde yürütülmüştür. Araştırmada programın etkililiğini değerlendirmek amacıyla Beck Depresyon Ölçeği, Beck Anksiyete Ölçeği, Bilişsel Duygu Düzenleme Ölçeği kullanılmıştır. Araştırma, üniversitede lisans öğrenimi gören deney ve kontrol grubunda 10'ar öğrenci olmak üzere toplam 20 üniversite öğrencisi ile gerçekleştirilmiştir. Program, 90'ar dakikalık 14 oturumda yürütülmüştür. Verilerin analizinde Mann-Whitney U-Testi ve Wilcoxon İşaretli Sıralar Testi kullanılmıştır. Analiz sonuçlarına göre, depresyon düzeyinin azalmasında deney grubundaki üniversite öğrencilerinin kontrol grubundaki öğrencilere göre, anlamlı bir şekilde farklılaştıkları sonucuna varılmıştır. Ayrıca program, deney grubundaki üniversite öğrencilerinin bilişsel duygu düzenleme stratejilerini arttırırken anksiyete düzeyini düşürmüştür. Araştırmanın sonuçları uygulanan müdahale programının etkinliğini ortaya koymuştur. Programın sağladığı katkılardan dolayı, üniversitelerin psikolojik danışma merkezlerinde ve üniversite öğrencileri ile yapılan grupla psikolojik danışma oturumlarında uygulanabileceği sonucuna varılmıştır.

Anahtar Kelimeler: Kaygı, Depresyon, Bilişsel duygu düzenleme, Üniversite öğrencileri, Program.

Atıf Citation Gökmen Özdemir, G., & Eryılmaz, A. (2024). Empowering university students: Unleashing effective strategies to combat anxiety through cognitive emotion regulation program. *Uluslararası Anadolu Sosyal Bilimler Dergisi, 8*(2), 347-364. DOI: https://doi.org/10.47525/ulasbid.1471379

1. INTRODUCTION

University students find themselves at a pivotal juncture marked by the exploration of their identity, a journey intricate in self-discovery (Arnett, 2014). This expedition, which entails unraveling one's identity across domains encompassing career, occupation, and relationships, can engender profound anxiety among individuals. Amidst a myriad of psychological disorders, anxiety disorders undeniably command attention, with anxiety-related distress emerging as a predominant concern (Butcher et al., 2013). Notably, within non-clinical cohorts, the formulation and execution of comprehensive intervention initiatives targeting the multidimensional facets of anxiety attain paramount significance, serving the tripartite purpose of prevention, therapy, and psychological development. By immersing themselves in such multifaceted interventions, university students are poised to navigate their transition into adulthood with heightened resilience and ease Masten et al., 2013). The current landscape of scholarly discourse predominantly features inquiries centered on maladaptive strategies; however, a noticeable dearth persists concerning interventions that seamlessly interlace both adaptive and maladaptive strategies. The convergence of these dual dimensions holds the potential to furnish mental health practitioners with novel perspectives and enlightening insights, thereby reinvigorating the spectrum of mental well-being services. In this context, the necessity of forging intervention frameworks that holistically encompass these dimensions becomes conspicuously evident, as it not only acknowledges but also holistically addresses the intricate tapestry of anxiety experiences within the realm of university students.

Principles of Anxiety and Depression

Anxiety, rooted in the principles of cognitive therapy, often originates from an individual's tendency to perceive their current circumstances as threatening and to hold a belief in their inherent lack of safety (Borkovec, 1994). The disparity between objective reality and personal interpretation serves as a foundation for anxiety-related challenges. As this disparity intensifies, an individual's struggles with anxiety become increasingly prominent, impeding effective functioning in daily life and interpersonal relationships. In more severe instances, this disconnect may contribute to the development of anxiety disorders (Kessler et al., 1998). Individuals grappling with anxiety often display patterns of dysfunctional metacognition, engaging in unproductive rumination throughout the day. These distorted thoughts lead to attempts to manage difficulties through the lens of anxiety, perpetuating a state of apprehension that exaggerates the severity of perceived challenges (Borkovec et al., 2004). Depression is when the individual loses interest in himself and others and feels hopeless with a pessimistic perspective (Schulz and Arora, 2015); resulting from difficulties in cognitive emotion regulation processes (Stikkelbroek et al., 2016); It is a common psychological problem that manifests itself with emotional, cognitive and physical symptoms (Leahy, 1997). The difficulty an individual experiences in regulating his emotions during difficult life events causes him to experience depressive symptoms longer and more intensely (Mennin & Farach, 2007). In a study conducted by Ekin (2017), it was concluded that the group suffering from depression and anxiety disorders used dysfunctional cognitive emotion regulation strategies more than the group not experiencing any of these disorders. It is noteworthy that the healthy group used functional cognitive emotion regulation strategies more than the depression and anxiety groups.

Emotion Regulation Strategies by Age Groups

Research focusing on age groups has revealed noteworthy distinctions in emotion regulation strategies. Older adults tend to gravitate towards positive states amidst challenging experiences (Gross, 2001), whereas young adults often employ suppression, inhibiting the expression of emotions (John & Gross, 2004). Additionally, young adults exhibit a heightened need to alleviate stress levels compared to their older counterparts (Cameron et al., 2018). University students, who frequently confront academic and personal-emotional adjustment issues, stand at an elevated risk of experiencing anxiety-related problems (Aderi et al., 2013). Thus, preemptive measures to address potential anxiety concerns among university students become imperative. This study endeavors to provide valuable insights, particularly to university counseling centers and mental health professionals working with this demographic, to effectively address potential anxiety issues.

Development of Emotion Regulation Strategies

Enhancing anxiety disorders necessitates the cultivation of functional emotion regulation strategies (Hilt et al., 2015). Individuals contending with anxiety often struggle to recognize and understand their emotions, making them prone to reactive behaviors and in need of emotional stabilization (Amstadter, 2008). Deficient emotion regulation skills can erode long-term psychological, social, and physical well-being (Gross, 2008). Moreover, interventions that underscore the learnability and improvable nature of emotion regulation skills (Jazaieri et al., 2014; LeBlanc et al., 2017) offer promise. Emotion regulation therapy has exhibited effectiveness in treating generalized anxiety disorder with or without concurrent depression (O'Toole et al., 2019). Notably, Shahsavani et al. (2020) demonstrated the impact of emotional schema therapy on migraine severity and cognitive emotion regulation strategies, highlighting its effectiveness in reducing migraine severity and enhancing cognitive emotion regulation strategies. Additionally, Ruini et al. (2009) showcased the enhanced outcomes achieved through the combined application of Well-Being Therapy (WBT) and Cognitive Behavioral Therapy (CBT). The amalgamation of these therapeutic approaches yields promising results.

Cognitive Behavioral Therapy (CBT) Approach

Cognitive Behavioral Therapy (CBT) stands out as a widely acknowledged therapeutic intervention with effectiveness spanning various domains. Originating from the work of Aaron T. Beck in the 1960s during his exploration of depression, CBT integrates behavioral and cognitive principles into a comprehensive framework (Murdock, 2016). The approach of Cognitive Behavioral Therapy (CBT) is aimed at alleviating psychological distress and dysfunction by delving into and addressing the intricate interplay between clients' thoughts, emotions, and behaviors that contribute to the presenting issue (Patten, 2012). The foundational tenet of CBT lies in the understanding that individuals' emotions and behaviors are influenced by their interpretations of events (Corey, 2009). The emphasis of CBT on reshaping cognitive patterns and transferring acquired skills to daily life—thereby empowering clients to take on the role of their own therapists—anticipates that the effects of therapy will endure beyond the formal treatment period (Beck, 1995). A comprehensive review of psychological literature underscores CBT's efficacy in addressing a diverse range of psychological concerns, including but not limited to depression, anxiety, anger, chronic pain, post-traumatic stress disorder, familial conflicts, social phobia, obsessive-compulsive disorder, violence, bullying, and aggression (Beck, 2016; Corey, 2009; Murdock, 2016).

Ways to Cope with Anxiety and Depression

The resolution of anxiety-related issues assumes paramount importance in the context of university students. Garnefski and Kraaij's (2001) study unveiled significant associations between cognitive emotion regulation strategies—such as rumination, self-blame, catastrophizing, and positive reappraisal—and anxiety. Of note, rumination and self-blame exhibited the strongest correlations with anxiety. As positive reappraisal increases, anxiety tends to decrease, whereas escalating levels of catastrophizing, rumination, and self-blame contribute to heightened anxiety. In another study, it was suggested that acceptance and positive reappraisal strategies bolster psychological well-being and mitigate anxiety symptoms (Carver et al., 1989). Functional cognitive emotion regulation strategies are pivotal in both the emergence and alleviation of symptoms related to depression and anxiety (Garnefski et al., 2002). Depression is an internalization problem experienced by the individual (Conway vd., 2019). Depression has a very close positive relationship with self-blame, blaming others, catastrophizing and rumination (Ötünçtemur and Kahraman, 2020); Acceptance and reducing the value of the event strategies predict depression negatively (Şahin, 2018). A study among college students in China examined the impact of sleep quality on anxiety and depressive symptoms. Researchers found that poor sleep quality significantly increased levels of anxiety and depression. Cognitive emotion regulation strategies played a mediating role in this relationship. In particular, in case of poor sleep quality, maladaptive cognitive emotion regulation was found to increase negative effects on mental health, while adaptive cognitive emotion regulation helped alleviate symptoms of depression (Wang et al., 2023).

Development of Intervention Programs

Cognitive Behavioral Therapy (CBT) emerges as one of the foremost approaches for addressing anxiety-related challenges. However, research has also highlighted the potential for relapse (Brown et al., 1995). Beyond the multifaceted findings of numerous studies, an inquiry into the literature has not revealed any systematically structured group intervention program aimed at diminishing maladaptive emotion regulation strategies while concurrently fostering functional strategies. The landscape of intervention studies involving cognitive emotion regulation strategies remains limited. In light of this, the current study seeks to enrich the literature by investigating the impact of a cognitive emotion regulation strategies-based intervention within the framework of CBT on variables associated with anxiety and depression. While many studies predominantly focus on ameliorating negative aspects, this program's design diverges; it strives to equip participants with functional strategies, embracing a holistic perspective to yield comprehensive benefits. Consequently, this study offers a broader lens and a novel approach to understanding anxiety and depression concerns. This comprehensive outlook is believed to be more advantageous than preceding efforts, thereby enriching practitioners' understanding of anxiety issues through the prism of CBT. Beyond presenting intervention avenues for anxiety concerns, this study's endeavor to impart functional strategies also implies a proactive dimension in addressing the potential recurrence and emergence of anxiety-related challenges.

Research Sub-Problems

Building upon these considerations, the primary objective of this study is to rigorously investigate the efficacy of a comprehensive group psychological counseling program specifically designed for university students grappling with anxiety. In pursuit of this overarching aim, the study will address the following sub-problems:

a. Sub-Problems Pertaining to the Cognitive Emotion Regulation Total Score:

Is there a statistically significant disparity in the cognitive emotion regulation total pre-test scores between the experimental group, which receives the aforementioned program, and the control group, which does not receive the program?

Does a statistically significant divergence exist in the cognitive emotion regulation total post-test scores between the experimental group, exposed to the aforementioned program, and the control group, devoid of the program?

b. Sub-Problems Pertaining to the Anxiety Variable:

Is there a statistically notable distinction in the anxiety total pre-test scores between the experimental group, exposed to the designated program, and the control group, not subjected to the program?

Are there statistically substantial disparities in the anxiety total post-test scores between the experimental group, benefiting from the program, and the control group, excluded from the program?

c. Sub-Problems Pertaining to the Depression Variable:

Is there a statistically significant variation in the depression total pre-test scores between the experimental group, engaged in the prescribed program, and the control group, excluded from the program?

Does a statistically significant divergence exist in the depression total post-test scores between the experimental group, undergoing the prescribed program, and the control group, devoid of the program?

The exploration of these sub-problems within the confines of a rigorous experimental design will provide valuable insights into the differential impact of the comprehensive group psychological counseling program on cognitive emotion regulation, anxiety, and depression variables among university students. By systematically addressing these sub-problems, this study endeavors to contribute to the existing body of knowledge concerning the efficacy of intervention strategies aimed at ameliorating anxiety-related issues prevalent among the student population. Additionally, this inquiry holds the potential to inform and guide mental health practitioners and university counseling centers in tailoring effective interventions for this demographic, thereby facilitating the enhancement of their overall well-being and academic success.

2. METHOD

2.1. Research Design

This study employs an experimental design to investigate the effectiveness of a cognitive emotion regulation strategies program developed for university students experiencing anxiety. The study is conducted within a pre-test post-test experimental design with experimental and control groups.

2.2. Study Participants

The participants in this study are undergraduate students from the Department of Social Work at Seydikemer School of Applied Sciences, affiliated with Muğla University, during the fall semester of the 2022-2023 academic year. A total of 20 university students participated in the study, with 10 (10 female) in the experimental group and 10 (10 female) in the control group. The mean age of the participants is 21.80.

2.3. Data Collection Tools

In this study, the "Cognitive Emotion Regulation Scale," the "Beck Depression Inventory," and the "Beck Anxiety Inventory" were utilized as data collection tools. The Cognitive Emotion Regulation Questionnaire, developed by Garnefski et al. (2001), can be used for individuals aged 12 and above in both normal and clinical samples (Altunbaş, 2014). The scale comprises a total of 36 items using a 5-point Likert scale and consists of 9 subscales. Exploratory factor analysis confirmed that the original nine-factor structure remains valid in the Turkish version (Onat & Otrar, 2010). The subscales of the scale are as follows:

1. Self-blame Subscale (Items 1, 10, 19, 28): Self-blaming thoughts related to experiences.

2. Acceptance Subscale (Items 2, 11, 20, 29): Thoughts of accepting one's experiences.

3. Rumination Subscale (Items 3, 6, 21, 30): Constant thinking about emotions and thoughts related to negative events.

4. Positive Refocusing Subscale (Items 4, 13, 22, 31): Thinking about topics that bring satisfaction instead of real events.

5. Refocus on Planning Subscale (Items 5, 14, 23, 32): Thinking about the steps to take to cope with the event.

6. Positive Reappraisal Subscale (Items 6, 15, 24, 33): Assigning a positive meaning to the event for personal growth.

7. Putting into Perspective Subscale (Items 7, 16, 25, 34): Thoughts that mitigate the weight of the event by comparing it with other events.

8. Catastrophizing Subscale (Items 8, 17, 26, 35): Focusing on the most dreadful aspects of the events.

9. Other-blame Subscale (Items 9, 18, 27, 36): Blaming others for what has happened (Garnefski et al., 2001).

Within the scope of this research, the Cronbach alpha reliability coefficient of the Cognitive Emotion Regulation Scale was calculated as .86.

The Beck Depression Inventory (BDI) is a widely used measurement tool in the field of mental health that aims to determine the extent of an individual's depression. The scale, developed by Beck et al. (1961), was adapted to Turkish by Hisli (1988). The inventory, containing 21 items, assigns a score of 0-3 to each item. The total score categorizes the level of depression as follows: 0-9: Normal, 10-16: Mild depression, 17-29: Moderate depression, 30-63: Severe depression. All questions are in multiple-choice format. The items of the BDI include various depression symptoms such as self-blame, sleep and appetite problems, fatigue, reduced sexual desire, hopelessness, and anger issues that the individual has experienced in the past week. The purpose of this inventory is not to diagnose psychiatric conditions or distinguish between

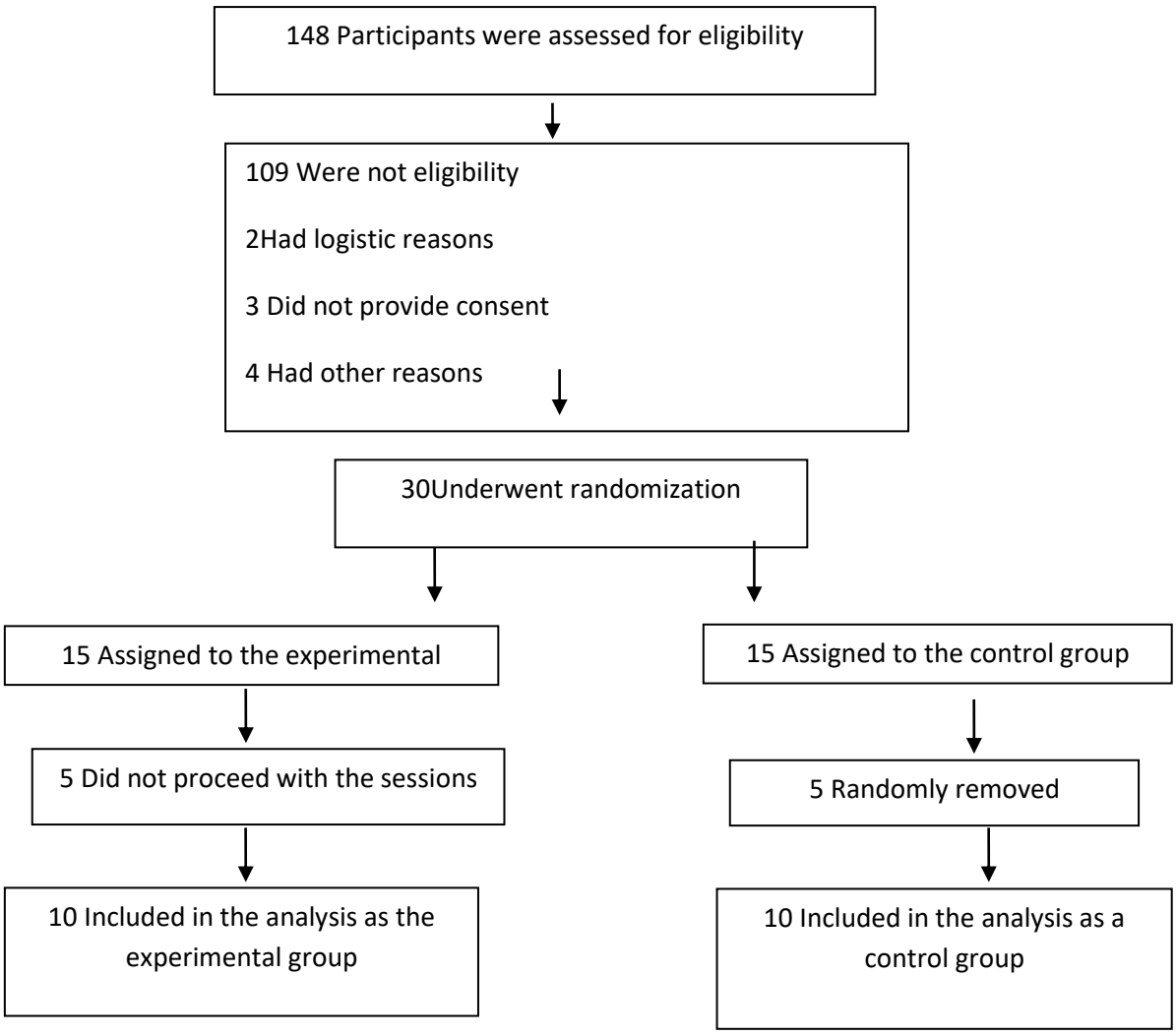
different types of depression, but to quantitatively measure the severity of the individual's experienced depression level. Within the scope of this research, the Cronbach's alpha coefficient, which shows the internal reliability of the Beck Depression Scale, was calculated as .82.

The Beck Anxiety Inventory (BAI) is a self-report inventory designed to assess the severity of an individual's anxiety. The inventory, developed by Beck et al. (1988), was adapted to Turkish by Ulusoy et al. (1998). The inventory consists of 21 items, and each item is assigned a score of 0-3. The total score categorizes the level of anxiety as follows: 0-7 points: Normal, 8-15 points: Mild anxiety, 16-25 points: Moderate anxiety, 26-63 points: Severe anxiety. All questions are in multiple-choice format. The items of the BAI include various anxiety symptoms such as sweating regardless of temperature, bodily numbness or tingling, trembling, fear of losing control, feeling like suffocating, feelings of terror, indigestion, irritability, that the individual has experienced in the past week. The purpose of this inventory is not to diagnose psychiatric conditions, but to quantitatively measure the severity of the individual's experienced anxiety level. It can be stated that this inventory is internationally valid and reliable measurement tool (Ulusoy, 1998). Within the scope of this research, the Cronbach alpha reliability coefficient of the Beck Anxiety Scale was calculated as .88.

2.4. Procedure

To select participants for the study, the Beck Anxiety Inventory was administered by the researcher to 148 students enrolled in the relevant school. Arithmetic means and standard deviations were calculated using the SPSS package program for the data obtained from the inventory applications. From the Beck Anxiety Inventory scores, 39 students who scored between 16 and 25 (indicating moderate anxiety) were identified. Subsequently, after providing general information about the study, 30 students volunteered to participate in the research. These voluntary students were randomly assigned to two groups using a lottery method. Then, using the same lottery method, these two groups were randomly assigned as the experimental group and the control group. This assignment aimed to ensure a minimum of 15 participants in each group. Five of the students assigned to the experimental group were unable to consistently attend each of the 14 sessions of the program, reducing the number of participants in the experimental group to 10. In the subsequent stages, five participants were also randomly withdrawn from the control group. Each session lasted for 90 minutes and was conducted once a week.

Figure 1. Participant Flowchart



Group Leader

In this study, a female psychological counselor conducted the intervention program. The group leader holds a master's degree in guidance and psychological counseling and is currently pursuing a doctoral degree in the same field.

2.5. Intervention

For university students experiencing anxiety, the cognitive emotion regulation strategies program was designed to reduce maladaptive strategies and enhance adaptive strategies. During Sessions 1 to 3, the group members aimed to understand the impact and causes of their anxiety problems. Sessions 4 to 7 focused on helping group members recognize and cease using maladaptive strategies in their lives. Session 8 involved a review of the previous sessions. Sessions 9 to 13 were dedicated to teaching group members adaptive strategies and facilitating change in their lives. Session 14 marked the conclusion of the process.

Table 1. The Themes of the Program Applied Each Week

Week	Theme	Contents
1	Introduction	Program's purpose and structural features
2	Problem Identification	Identifying personal issues
3	Symptoms of Anxiety and Causes of Anxiety	Anxiety symptoms and causes
4	Self-blame	Addressing self-blame
5	Catastrophizing	Exploring catastrophic scenarios
6	Rumination	Understanding thought loops
7	Other-blame	Effects of blaming others
8	Review	Recap of topics covered in initial weeks
9	Acceptance	Cultivating self-acceptance
10	Positive Refocusing	Developing positive refocusing skills
11	Putting into Perspective	Placing issues into perspective
12	Refocus on Planning	Enhancing planning abilities
13	Positive Reappraisal	Significance of positive reappraisal
14	Closure	Wrapping up the program and evaluation

2.6. Ethical Declaration

The research was conducted with the approval of the research committee. Informed consent forms were provided to participants before the intervention began, and all participants signed these forms before joining the study.

2.7. Data Analysis

The statistical analysis for the research was performed using SPSS 21 software. The independent variable of the study was the cognitive emotion regulation strategies program developed for university students experiencing anxiety. The dependent variables were depression, anxiety, and cognitive emotion regulation strategies. Due to the non-normal distribution of the data, non-parametric tests, namely the Mann-Whitney U test and Wilcoxon Signed Ranks test, were used to determine the effectiveness of the program.

3. FINDINGS

This section presents the findings of the study.

Table 2. Results of Mann Withney U Test Applied to Experimental and Control Groups as a Pretest

Group and Scale	n	Mean Rank	Sum of Ranks	U	p
Beck Depression Inventory					
Experimental Group	10	10,70	107,00	48,00	0,879
Control Group	10	10,30	103,00		
Beck Anxiety Inventory					
Experimental Group	10	11,90	119,00	36,00	0,286
Control Group	10	9,10	91,00		
Cognitive Emotion Regulation Strategies Scale					
Experimental Group	10	9,50	95,00	40,00	0,447
Control Group	10	11,50	115,00		

*$p < .05$

Upon scrutinizing Table 2 the outcomes derived from the Mann-Whitney U Test administered as a pretest to both the experimental and control groups reveal the absence of statistically significant distinctions between these two groups in relation to depression, anxiety, and cognitive emotion regulation strategies.

Table 3. Results of Mann Withney U Test Applied to Experimental and Control Groups as a Posttest

Group and Scale	n	Mean Rank	Sum of Ranks	U	p
Beck Depression Inventory					
Experimental Group	10	7,10	71,00	16,00	0,009*
Control Group	10	13,90	139,00		
Beck Anxiety Inventory					
Experimental Group	10	8,20	82,00	27,00	0,079
Control Group	10	12,80	128,00		
Cognitive Emotion Regulation Strategies Scale					
Experimental Group	10	13,10	131,00	24,00	0,049*
Control Group	10	7,90	79,00		

*$p < .05$

When examining the post-test results for the experimental and control groups, it is evident that, in terms of depression and cognitive emotion regulation strategies, the experimental group significantly diverges from the control group, and these disparities all favor the experimental group. Accordingly, in the post-test measurement, the experimental group's depression scores were found to be lower than those of the control group, while their scores related to cognitive emotion regulation strategies were higher than those of the control group. When analyzing anxiety scores, it is observed that the post-test scores of the experimental group did not significantly differ from those of the control group; however, the experimental group exhibited lower anxiety scores compared to the control group. In addition to these findings, the experimental and control groups were further compared internally in terms of depression,

anxiety, and cognitive emotion regulation strategies. The results of these comparisons are presented in the following tables.

Table 4. Wilcoxon Signed Rank Test Results Applied to the Experimental and Control Groups as a Posttest

	n	Mean Rank	Sum of Ranks	Z	p
Beck Depression Inventory					
Experimental Group					
Negative Ranks	10	5,50	55,00	-2,810	0,005*
Positive Ranks	0	0,00	0,00		
Ties					
Control Group					
Negative Ranks	4	4,75	19,00	-0,847	0,397
Positive Ranks	3	3,00	9,00		
Ties	3				
Beck Anxiety Inventory					
Experimental Group					
Negative Ranks	6	7,50	45,00	-1,787	0,074
Positive Ranks	4	2,50	10,00		
Ties	0				
Control Group					
Negative Ranks	3	5,67	17,00	-1,071	0,284
Positive Ranks	7	5,43	38,00		
Ties	0				
Cognitive Emotion Regulation Strategies Scale					
Experimental Group					
Negative Ranks	5	5,30	26,50	-0,702	0,919
Positive Ranks	5	5,70	28,50		
Ties	0				
Control Group					
Negative Ranks	8	4,50	36,00	-0,867	0,386
Positive Ranks	2	9,50	19,00		
Ties	0				

*$p < .05$

According to the results of the Wilcoxon Test, individuals in the experimental group exhibited significant differences in terms of depression levels compared to their post-test scores. In contrast, no changes were observed in the control group. While there was no significant differentiation in anxiety and cognitive emotion regulation strategy scores between the experimental and control groups, descriptive statistics reveal noteworthy trends.

Table 5. Descriptive Statistics of Beck Anxiety Scale and Cognitive Emotion Regulation Scale Pretest and Posttest Mean Scores of Students in Experimental and Control Groups

	Pretest	Posttest
	Mean	Mean
Anxiety Scale Experimental Group	25	14
Anxiety Scale Control Group	19,50	27.5
Cognitive Emotion Regulation Strategies Experimental Group	104	107
Cognitive Emotion Regulation Strategies Control Group	108	96

The median value (50th percentile) for the anxiety inventory decreased from 25 to 14 in the experimental group, whereas it increased from 19.50 to 27.50 in the control group. Similarly, for cognitive emotion regulation strategies, the median value in the experimental group increased from 104 to 107, while in the control group, it decreased from 108 to 96. In conclusion, the cognitive emotion regulation strategies program appears to be effective in reducing depression levels among university students and has shown utility in decreasing anxiety levels and enhancing cognitive emotion regulation strategies.

4. DISCUSSION

This study aimed to empirically investigate the efficacy of a cognitive emotion regulation strategies intervention program designed to alleviate anxiety and depression symptoms among university students. The outcomes of this empirical inquiry underscore the positive impact of the researcher-conceived program, which comprised a sequence of 14 weekly sessions, each spanning 90 minutes and overseen by a trained group facilitator. This intervention exhibited a demonstrably favorable effect on participants' anxiety, depression, and cognitive emotion regulation strategies. Analyses of post-test data indicated that, compared to the control group, participants in the experimental group exhibited statistically significant reductions in depression levels and concurrently recorded elevated scores in cognitive emotion regulation strategies. While no significant disparities were observed in anxiety scores between the experimental and control groups, a discernible decrease in anxiety levels was noted within the experimental cohort after the intervention. Notably, during the concluding session, participants reported a cessation of physiological manifestations associated with anxiety, such as palpitations and dizziness.

It is widely acknowledged that university students commonly experience heightened levels of anxiety, necessitating targeted interventions to mitigate this prevalent issue Balkıs & Duru, 2019). The pursuit of higher education often coincides with a period of substantial identity exploration, academic challenges, and social transitions, all of which can contribute to the manifestation and exacerbation of anxiety symptoms among this demographic (Sakin Özen, et al., 2010). In this context, the incorporation of cognitive emotion regulation strategies-based interventions presents a promising avenue for addressing anxiety concerns. The theoretical underpinning of these strategies rests on the premise that individuals' perceptions of and reactions to situations are pivotal in determining their emotional experiences (Zlomke &Hahn, 2010).By equipping university students with adaptive cognitive strategies, such interventions seek to empower them to appraise stressors and challenges in more constructive ways, thereby fostering emotional resilience and reducing maladaptive responses Min, , et al., 2013). Empirical evidence from the current study underscores the effectiveness of such an intervention, as it revealed significant improvements in depression, anxiety, and cognitive emotion regulation strategies within the experimental group. This underscores the potential of cognitive strategies not only to mitigate anxiety but also to enhance individuals' overall emotional well-being. By addressing anxiety through the lens of cognitive emotion regulation, this intervention approach not only addresses immediate concerns but also imparts valuable skills that students can carry forward, fostering a positive impact on their mental health and adaptive coping mechanisms beyond the university context.

These findings resonate with the prevailing body of literature that substantiates a compelling linkage between maladaptive cognitive emotion regulation strategies and the manifestation of depression and anxiety (Gross & Munoz, 1995; Campbell-Sills & Barlow, 2007; Mennin et al., 2007). Robust associations have been established between cognitive strategies like self-blame, rumination, catastrophizing, and reversed positive reappraisal, and the presentation of depressive and anxiety symptoms (Garnefski & Kraaij, 2007). Furthermore, Martin and Dahlen's (2005) investigation illuminated that irrespective of gender, self-blame, rumination, catastrophizing, and reversed positive reappraisal strategies serve as predictive factors for depression, anxiety, stress, and anger. Consistently, Salehi's (2017) research ascertained that disaster-thinking, acceptance, refocusing on planning, rumination, and recent stress emerged as significant predictors of depression among university students. Another study, which used network analysis to examine the links between emotion regulation difficulties, emotion reactivity, and psychiatric disorders such as depression and anxiety in adolescents, found that difficulties in accessing effective emotion regulation strategies are at the center of the emotional dysfunction network. Research has shown that depression has a stronger connection with emotion regulation difficulties. Therefore, it was emphasized that improving emotion regulation strategies may be critical for addressing depressive symptoms in adolescents (Ruan et al., 2023). In another study by Sobhani et al. (2023), the effectiveness of online video-based group schema therapy in developing cognitive emotion regulation strategies in women undergoing bariatric surgery was examined. This study showed that group schema therapy could lead to an increase in adaptive cognitive emotion regulation strategies and a decrease in maladaptive cognitive emotion regulation strategies in women undergoing bariatric surgery.

Distinguished by its comprehensive scope, the present study innovatively embraced both maladaptive and adaptive cognitive emotion regulation strategies within a single intervention paradigm. Furthermore, this research buttressed the establishment of causal relationships between cognitive emotion regulation strategies and anxiety as well as depression, effectuating an experimental study design. Additionally, the intervention program developed and executed by the researcher offers a valuable, evidence-based resource for mental health professionals engaged in addressing anxiety-related concerns among university students.

In accordance with cognitive therapy tenets, individuals can effectively navigate their anxiety by delving into their foundational beliefs that shape their perceptions, rationally appraising their current circumstances, relinquishing maladaptive strategies, and cultivating adaptive responses. Maladaptive strategies perpetuate anxiety quandaries by virtue of their incongruence with prevailing realities. Notably, the propensity to shield oneself from anxiety and circumvent emotional engagement impedes the processing of experiences and emotions (Borkovec, 1994). This study transcends the mere validation of cognitive behavioral therapy's effectiveness by seamlessly integrating both dysfunctional and functional cognitive emotion regulation strategies, thus presenting a holistic solution for anxiety-related challenges.

In summation, the developed intervention program stands validated as an efficacious intervention for alleviating anxiety and depression within the university student population. The intervention's duality in addressing maladaptive cognitive emotion regulation strategies while concurrently nurturing adaptive ones dovetails with its overarching aim. Collectively, the findings underscore the successful attainment of the program's intended objectives

4.1. Limitations of the Study

One of the primary limitations of this research pertains to the use of a mental health professional for therapeutic intervention. Furthermore, the study's inability to examine potential variables such as exam periods and romantic relationship issues in relation to the effectiveness of the cognitive emotion regulation program for anxiety and depression constitutes another constraint. The utilization of non-parametric statistical techniques methodologically limits the generalizability of the study's findings.

4.2. Conclusions and Recommendations

The outcomes of this study have effectively demonstrated the efficacy of the implemented intervention program. The cognitive emotion regulation skills program exhibited success in reducing levels of depression among university students and proved beneficial in diminishing anxiety levels and enhancing cognitive emotion regulation strategies. This intervention program, developed and empirically validated within university psychological counseling units, can be disseminated more widely through group counseling sessions for students seeking assistance due to anxiety and depression-related concerns. It also serves as a valuable guide for mental health professionals, facilitating their practice. The findings of this research can be compared with sample groups from diverse cultures and developmental stages for further exploration. Future researchers can use some innovative methods such as Online Photo Voice (OPV) (Tanhan, 2020; Tanhan & Strack, 2020, Doyumğaç et al., 2021; Seydooğulları, 2023;), Online Interpretive Phenomenological Analysis (OIPA) (Doyumğaç et al.,2021) and Community-Based Participatory Research (CBPR) (Dari et al., 2023), approach to study the same topic by capturing people's thoughts, feelings, images, and knowledge.

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Conflict Declaration: The author of the article declares that he has no financial relationships with any person, institution or organization that may be a party to this study, and therefore there is no conflict of interest.

Support: The study did not receive support from any institution or organization.

Acknowledgments: We thank Prof. Dr. Mehmet Engin Deniz and Assoc. Prof. Dr. Durmuş Ümmet for their contribution to the preparation of the program.

Etical information: All procedures were carried out according to the ethical rules and the principles of the Declaration of Helsinki. The study was approved by the Research Ethics Committee of Yıldız Technical University Social and Human Sciences (approval number: 2022/05). All persons included in the study signed the "Informed Consent Form.

Contribution Rate: Authors contributed equally to the article.