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Comparison of the Effectiveness of Time Perspective-Based Therapy with Cognitive Behavioral Therapy on Academic Motivation, Academic Passion, Academic Procrastination, and Academic Persistence in Secondary School Students Affected by Floods with PTSD Symptoms

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A B S T R A C T

This study aimed to compare the effectiveness of time perspective-based therapy with cognitive behavioral therapy (CBT) on academic motivation, academic passion, academic procrastination, and academic persistence in secondary school students affected by floods and exhibiting post-traumatic stress disorder (PTSD) symptoms. The research design followed a semi-experimental extended method with a pre-test-post-test design, a control group, and a follow-up study. The statistical population consisted of all first-year secondary school students in the 2020-2021 academic year from high schools in the districts of Bavi, Karun, Hamidiyeh, and Shawwar in Khuzestan Province. After initial screening and obtaining consent from both parents and students, 60 participants were selected. These participants were randomly assigned into three groups: 20 students in the cognitive-behavioral intervention group, 20 students in the time perspective-based therapy group, and 20 students in the control group. The study utilized questionnaires on PTSD (Mississippi scale), academic motivation, the short-form Martin and Jackson scale of academic passion, academic procrastination, and academic persistence. The data were analyzed using multivariate and univariate analysis of covariance (ANCOVA) with SPSS software (version 24). The results indicated that the hypotheses regarding the effectiveness of time perspective-based therapy and cognitive behavioral therapy on academic motivation, academic passion, academic procrastination, and academic persistence were confirmed. However, the hypotheses related to the comparison of the effectiveness of these two therapies on the dependent variables were not confirmed. Therefore, implementing time perspective-based and cognitive behavioral therapies is recommended for addressing the dependent variables in this research and other academic issues among both male and female students at various educational levels.

Keywords: *academic motivation, academic procrastination, academic persistence, cognitive behavioral therapy, time perspective-based therapy, academic passion.*

1. Introduction

After enduring traumatic events like floods, the stressful family environment resulting from physical and financial damages may lead to a lack of concentration in academic matters and a decline in academic performance. These students may experience a greater decrease in academic motivation compared to their peers (Kienzler et al., 2015). Many researchers consider academic motivation to be the primary factor directly affecting academic success, and they argue that other factors influencing this area affect students' educational progress indirectly through academic motivation (Mega et al., 2014). The role of motivation in learning and students' learning processes has always been a primary concern for teachers and university professors (Ajmal et al., 2021). In one study, high motivation in students was found to reduce dropout rates and increase students' success levels (Casanova et al., 2018). Moreover, high motivation can enhance academic passion (Otto et al., 2020).

Deeper learning refers to acquiring useful knowledge and academic passion. This concept is based on the assumption that different competencies contribute to effective problem-solving and lead to long-term mastery, which requires a certain level of passion for the subject. According to the deep learning paradigm, students with academic passion learn to approach problems with critical thinking and a positive attitude toward problem-solving (Fullan & Langworthy, 2014; Otto et al., 2020). Three domains can influence the development of academic passion in students: the student, parental support, and teacher support. The student practices new skills beyond initial mastery, leading to automaticity, a concept known as overlearning, which allows the mind to focus on the desired performance as a unique, integrated action, thereby increasing the capacity for passion. Passion represents the ultimate form of motivation in the process of internalization and intrinsic motivation. Additionally, enjoyment derived from the activity, intrinsic motivation to engage in the activity, and full immersion in the activity are important aspects of the experience of passion. However, this characteristic may diminish due to anxiety (Yosefi Afrashte et al., 2021).

One of the challenges that families face during adolescence, which may be exacerbated in crisis situations like floods, is academic procrastination, particularly due to the anxiety and PTSD symptoms that follow such events. Academic procrastination refers to students' tendency to unnecessarily delay academic tasks such as working on projects and studying (McCloskey & Scielzo, 2015). It is defined as the failure to carry out duties and responsibilities in an appropriate and timely manner despite the task being avoidable and within the individual's capacity. Procrastination involves intentionally delaying tasks that an individual intends to complete, even when they are aware of the negative consequences, often leading to dissatisfaction with performance (Munda & Tiwari, 2024). Time sensitivity creates further delays, meaning the longer a result is delayed, the lower the individual's academic motivation becomes. Those who are more sensitive to the impact of time are distracted or have difficulty delaying gratification and are more likely to procrastinate (Steel et al., 2022).

After events such as floods and earthquakes, characteristics like resilience help individuals to perform optimally under such conditions. In line with this, the construct of academic persistence has recently garnered attention from researchers. Most definitions of persistence are based on existing theoretical frameworks in the field of hard work. However, unlike constructs like diligence, vitality, and resilience, which focus on how individuals cope with negative life experiences (e.g., distress, stress, and anxiety), persistence also involves how individuals cope with positive experiences (e.g., success) and achieve personal growth and development (Gucciardi et al., 2009).

Time perspective is a modern psychological approach that primarily focuses on individuals' attitude toward time, considering their perception within a temporal framework. It also influences individuals' experiences and well-being by enhancing their relationship with time and life, or even by reconstructing it (Boniwell & Zimbardo, 2015). Time perspective creates frameworks that allow individuals to assign meaning to events within temporal dimensions, including the past, present, and future. The type of perspective an individual has on time, along with the attitudes shared with others, has a significant impact on various aspects of their life. Despite this, people often underestimate the importance of time. The main principle of the time paradox highlights this contradiction, as time perspective is a fundamental aspect of the psychology of time structure, categorizing cognitive processes into frameworks of the past, present, and future (Zimbardo & Boyd, 2008; Zimbardo & Boyd, 2014). This approach was used as one of the interventions in the current study.

Cognitive behavioral therapy (CBT) is one intervention that could play an essential role in improving academic procrastination and fostering persistence and passion in these students (Doowa, 2023). CBT is a psychotherapy

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technique based on the cognitive-behavioral theory of emotional disorders and clinical and experimental studies. In CBT, the primary focus is on changing individuals' beliefs and behaviors (Man et al., 2023). Due to its strong empirical support in improving anxiety disorders, including PTSD symptoms through systematic desensitization, CBT is considered an effective intervention in this domain. This therapy helps patients identify their distorted thinking patterns and ineffective behaviors. To change these distorted and inefficient thoughts, organized behavioral tasks and regular discussions are utilized, which can positively affect the perceptions and beliefs related to the traumatic event (Gaviţa et al., 2012). Numerous studies support the effectiveness of this therapeutic approach in academic outcomes for students.

Regarding the comparison of these intervention methods, the aim of the current study is to determine whether there is a difference between the effectiveness of time perspective-based therapy and cognitive behavioral therapy on academic motivation, academic passion, academic procrastination, and academic persistence in secondary school students affected by floods who exhibit PTSD symptoms.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed an extended semi-experimental design using a pre-test, post-test, and follow-up approach with a control group. The design included three groups: two experimental groups and one control group. Participants were randomly assigned to the three groups (two experimental groups and one control group). Each group was assessed at three stages: pre-test, post-test, and follow-up. The design can be summarized as follows:

The statistical population of this study consisted of all first-year secondary school female students enrolled during the 2020–2021 academic year in high schools located in the Bavi, Karun, Hamidiyeh, and Shavoor districts of Khuzestan Province. From this population, 980 female students were selected using convenience sampling, and they completed the Mississippi PTSD Scale. Out of these, 480 students who scored above the average on the PTSD scale were identified.

Subsequently, purposeful sampling was conducted based on inclusion criteria, including a diagnosis of PTSD (confirmed by the Mississippi PTSD Scale and clinical interviews), willingness to participate in group sessions, commitment to attending the sessions, not receiving medication, and obtaining written consent from parents and students. A total of 80 students were selected.

Before the sessions began, 12 students dropped out due to absences during the intervention period, and 8 students declined to participate in the group sessions. Ultimately, 60 students were included in the study. Using simple random sampling, 20 students were assigned to the first experimental group, 20 to the second experimental group, and 20 to the control group. This sampling method aimed to select participants who aligned with the research objectives.

2.2. Measures

2.2.1. PTSD

This is a self-report scale developed by Kian et al. (1988) for assessing the severity of post-traumatic stress disorder (PTSD) symptoms. The scale consists of 35 items, with participants responding on a 5-point Likert scale, where the options are scored from 1 to 5. The total score range for an individual is between 35 and 175, with a score of 107 or higher indicating the presence of PTSD. This scale was validated in Iran by Gudarzi (2002), with a Cronbach's alpha coefficient of 0.92. For concurrent validity, the scale was compared with three other instruments: the Life Events Checklist, the PTSD Checklist, and the Padua Inventory, yielding correlation coefficients of 0.23, 0.82, and 0.75, respectively (Gudarzi, 2002).

2.2.2. Academic Motivation

This scale was translated from French to English in 1992 by Vallerand and colleagues to assess the type of academic motivation among students. Based on self-determination theory, it explores three main dimensions of motivation: intrinsic motivation, extrinsic motivation, and amotivation. The questionnaire contains seven subscales, three of which measure intrinsic motivation (knowledge, progression, and stimulating experiences), one measures extrinsic motivation (identification, introjection, and external regulation), and one measures amotivation. In Iran, Baqeri, Shahraray, and Farzad (2003) translated the scale and administered it to 838 participants. Using factor analysis, they found that five factors from the original seven-factor structure were repeated, aligning the scale with the cultural characteristics of the Iranian population. The internal consistency and test-retest reliability coefficients were above 0.77 for most of the subscales, indicating good reliability (Khaled, 2011).

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2.2.3. *Academic Persistence*

This scale is derived from the long-form multidimensional scale and contains 9 items. Martin and Jackson tested the short form in studies of shift in extracurricular activities in high school students, math, and sports. The results indicated that the short form has acceptable internal validity, a nearly normal distribution, and a satisfactory fit based on confirmatory factor analysis using LISREL. For external validity, the correlation between this scale and the Martin Motivation and Engagement Scale (MES) was used, and the results confirmed its external validity. Jalili et al. (2018) reported a Cronbach's alpha coefficient of 0.85 for internal consistency and a Guttman reliability coefficient of 0.82 for the test-retest reliability (Jalili et al., 2018).

2.2.4. *Academic Procrastination*

This scale, developed by Solomon and Rothblum (1984), investigates academic procrastination in two dimensions. The first dimension, exam readiness, consists of 6 questions (1, 4, 6, 10, 12, and 14), and the second dimension, task readiness, includes 9 questions (2, 3, 5, 7, 8, 9, 11, 13, and 15), scored reversely. In a study conducted by Narimani et al. (2015), the Cronbach's alpha for the scale was reported as 0.69. The internal consistency coefficients for exam readiness (0.74) and task readiness (0.78) were also reported, indicating good validity (Narimani et al., 2015).

2.2.5. *Academic Resilience*

This questionnaire was developed and normed in Iran by Jamshidi Soluklu and Sheikholeslami in a sample of secondary school students. The scale contains 24 items. The results of exploratory factor analysis in 2015 revealed three factors: growth (10 items), effort (8 items), and invincibility (6 items). Confirmatory factor analysis in 2016 confirmed the model derived from the exploratory analysis. The reliability coefficients using Cronbach's alpha and test-retest methods were 0.91 and 0.83, respectively. These results indicate that the Academic Resilience Scale has good reliability and validity, and it can be used by education researchers (Jamshidi Soluklu & Raziye, 2018).

2.3. *Intervention*

2.3.1. *Cognitive-Behavioral Therapy (CBT)*

Cognitive-Behavioral Therapy (CBT) is a structured, time-limited, and goal-oriented therapy that focuses on identifying and altering dysfunctional thought patterns and behaviors. This intervention is particularly effective in treating post-traumatic stress disorder (PTSD), anxiety, and depression by helping individuals recognize and challenge negative thoughts and behaviors, replacing them with healthier coping strategies. The following protocol outlines each session's objectives and content, providing a structured framework for working with individuals dealing with PTSD (Shahrokhian et al., 2021; Ugwuanyi et al., 2020; Zamboni et al., 2021).

Session 1 – Building Rapport and Introducing Expectations:

The first session focuses on establishing trust and rapport with the participants, explaining the therapy process, and discussing the confidentiality of sessions. It includes an introduction to PTSD symptoms, raising awareness of the impact these symptoms can have on daily life. Participants are encouraged to openly share their experiences, and expectations for the therapy process are clearly stated.

Session 2 – Understanding the Role of Trauma and Cognitive Distortions:

This session delves into the relationship between post-traumatic stress and irrational beliefs. The ABC model (Antecedent, Belief, Consequence) is introduced to analyze how automatic thoughts contribute to anxiety. A worksheet for recording thoughts, emotions, and behaviors is provided, and participants are instructed to complete it as homework to track their cognitive patterns.

Session 3 – Identifying Worries and Problem-Solving Skills:

In this session, the homework from the previous session is reviewed, and participants are educated about worries related to current and future events. Problem-solving strategies are taught to help individuals manage anxiety-provoking situations. Participants are given a new task to record any current distressing events or potential future concerns as part of their homework.

Session 4 – Ambiguity and Decision-Making:

The session focuses on identifying ambiguous situations and the emotional distress they cause. Problem-solving strategies are reinforced, and participants are taught how to approach uncertain situations effectively. Homework is

assigned to identify and analyze any unresolved or uncertain life situations.

Session 5 – Cognitive Distortions and Emotional Regulation:

Cognitive distortions, particularly those contributing to negative emotions such as anxiety, are introduced. A list of common cognitive distortions is provided, and participants are encouraged to identify these distortions in their own anxious or stressful situations. They are tasked with tracking these distortions in their daily experiences as homework.

Session 6 – Challenging Negative Beliefs:

This session focuses on recognizing and confronting both positive and negative beliefs about worry. Participants are introduced to the "Defense Attorney" technique, which helps them challenge their irrational beliefs about future uncertainties. This approach encourages participants to test the validity of their negative beliefs and replace them with more realistic thoughts.

Session 7 – Muscle Relaxation and Guided Imagery:

A session dedicated to teaching relaxation techniques, including progressive muscle relaxation and guided imagery. These techniques help participants reduce physical tension and anxiety. Emphasis is placed on practicing these techniques regularly to manage stress and anxiety.

Session 8 – Questioning Dysfunctional Assumptions:

In this session, participants revisit their dysfunctional assumptions related to anxiety, using the "Downward Arrow" technique to trace the origins and consequences of their assumptions. Participants are guided to challenge these beliefs and adopt healthier, more balanced views. Homework is assigned to practice identifying and disputing these assumptions in real-life situations.

Session 9 – Cognitive Avoidance and Reducing Worry:

The final session addresses the issue of cognitive avoidance and its role in maintaining anxiety. The "White Bear" technique is used to raise awareness of the temporary relief avoidance provides and its long-term consequences. The session concludes with a review of the previous lessons and a focus on strategies for reducing avoidance behaviors and managing future anxiety.

2.3.2. Time Perspective Therapy

Time Perspective Therapy, based on Zimbardo's Time Perspective Theory, focuses on how individuals perceive and relate to their past, present, and future. By understanding and adjusting one's time perspective, individuals can improve emotional regulation, reduce stress, and develop more effective coping strategies. This protocol is designed to help individuals alter their time perspective, shifting from a negative view of the past, present, and future to a more balanced and positive one (Mirshafieea & Jafarib, 2019; Sword et al., 2014; Zimbardo & Boyd, 2014).

Session 1 – Building Rapport and Introduction to Time Perspective Theory:

The first session is focused on establishing rapport and introducing participants to the theory of time perspective. Zimbardo's five time perspectives (past-negative, past-positive, present-hedonistic, present-fatalistic, and future-oriented) are explained. Participants are encouraged to reflect on their own time perspective and how it may influence their emotional and behavioral patterns.

Session 2 – Time Perspective Scales and Psychological Testing:

Participants are introduced to various psychological tools for measuring time perspective. They complete a Time Perspective Scale, which helps identify their dominant time perspective. This session helps participants understand how their current perception of time impacts their daily life, stress levels, and coping mechanisms.

Session 3 – Shifting from Past-Negative to Past-Positive:

In this session, the focus is on shifting from a past-negative perspective (characterized by regret, guilt, and negative recollections) to a past-positive perspective (focused on positive memories and lessons learned). Participants are guided through exercises that help them reframe past experiences and focus on positive aspects of their history.

Session 4 – Shifting from Fatalistic Present to Present Hedonistic:

This session addresses the shift from a present-fatalistic perspective (characterized by feelings of helplessness and resignation) to a present-hedonistic perspective (focused on enjoying the present moment and experiencing immediate pleasure). Participants are taught techniques to increase their enjoyment of the present and break free from a sense of powerlessness.

Session 5 – Shifting from Future-Pessimism to Future-Optimism:

The focus of this session is on moving from a negative or pessimistic view of the future to a more optimistic and hopeful one. Participants are encouraged to identify future goals and develop a positive outlook on future possibilities. Techniques for goal-setting and long-term planning are introduced to enhance future-oriented thinking.

Session 6 – Balancing Time Perspectives:

The final session focuses on achieving a balanced time perspective. Participants reflect on how each time orientation (past, present, and future) influences their lives and work towards integrating them in a healthy way. Emphasis is placed on creating a well-rounded and adaptive time perspective that helps reduce stress and improve life satisfaction.

2.4. Data analysis

For data analysis, descriptive statistics such as frequency, percentage, mean, and standard deviation, as well as inferential statistics like multivariate and univariate analysis of covariance, Bonferroni post hoc tests, and their assumptions, were used. Data were analyzed using SPSS software, version 24. The significance level was set at $\alpha = 0.05$.

3. Findings and Results

Table 1 shows the means and standard deviations of academic motivation, academic engagement, academic procrastination, and academic persistence in the time perspective therapy group (1), cognitive-behavioral therapy group (2), and control group (3) at pre-test, post-test, and follow-up stages.

Table 1

Mean and Standard Deviation of Academic Motivation, Academic Engagement, Academic Procrastination, and Academic Perseverance in the Time Perspective Therapy Group (1), Cognitive-Behavioral Therapy Group (2), and Control Group (3) at the Pre-Test, Post-Test, and Follow-Up Stages

Variable	Groups	Pre-test M (SD)	Post-test M (SD)	Follow-up M (SD)
Academic Motivation	Group (1)	82.15 (11.89)	91.85 (12.01)	91.6 (11.42)
	Group (2)	83.1 (12.23)	90.7 (12.94)	90.5 (12.75)
	Group (3)	84.0 (11.8)	84.85 (10.71)	85.55 (10.58)
Academic Engagement	Group (1)	25.3 (3.75)	32.5 (4.35)	32.65 (4.0)
	Group (2)	23.15 (3.88)	28.85 (4.43)	29.75 (4.63)
	Group (3)	23.55 (2.6)	23.75 (2.67)	24.1 (2.75)
Academic Procrastination	Group (1)	59.15 (6.2)	48.8 (5.6)	48.75 (5.87)
	Group (2)	60.8 (7.1)	52.85 (6.27)	52.8 (6.47)
	Group (3)	57.1 (7.07)	57.15 (7.07)	56.55 (6.99)
Academic Perseverance	Group (1)	61.05 (7.22)	72.95 (8.94)	74.8 (9.53)
	Group (2)	63.45 (7.74)	71.65 (8.44)	71.2 (8.52)
	Group (3)	62.7 (6.95)	62.4 (6.95)	62.55 (6.72)

Before data analysis, the assumptions of covariance analysis were checked, and homogeneity of variances and homogeneity of regression slopes were found to be valid for all data.

In this section, the hypotheses of the study were tested. To test the research hypotheses, multivariate analysis of covariance (MANOVA) and Bonferroni post hoc tests were applied.

Table 2

Results of multivariate analysis of covariance (MANOVA) for post-test scores on academic motivation, academic engagement, academic procrastination, and academic persistence in the experimental groups (1 and 2) and control group

Test	Value	F	df	p
Pillai's Trace	0.990	8.73	12	0.001
Wilks' Lambda	0.082	23.98	12	0.001
Hotelling's Trace	10.32	58.22	12	0.001
Largest Root	10.24	181.77	4	0.001

As shown in Table 2, the statistical tests for multivariate analysis of covariance (MANOVA) indicate that there is a significant difference among at least one of the dependent variables between the time perspective therapy, cognitive-behavioral therapy, and control groups.

Table 3

Results of Bonferroni post hoc test for comparing adjusted means of academic motivation, academic engagement, academic procrastination, and academic persistence between experimental and control groups at the post-test stage

Variable	Comparison Groups	Adjusted Means	Mean Difference	Standard Error	Significance Level
Academic Motivation	Group 1 - Control Group	93.03 & 84.54	8.48	1.01	0.001
	Group 2 - Control Group	91.41 & 84.54	6.86	1.0	0.001
	Group 1 - Group 2	93.03 & 91.41	1.61	1.02	0.71
Academic Engagement	Group 1 - Control Group	31.58 & 24.66	6.91	0.54	0.001
	Group 2 - Control Group	30.12 & 24.66	5.45	0.54	0.001
	Group 1 - Group 2	31.58 & 30.12	1.46	0.55	0.06
Academic Procrastination	Group 1 - Control Group	48.45 & 57.58	10.12	0.57	0.001
	Group 2 - Control Group	50.94 & 57.58	7.63	0.56	0.001
	Group 1 - Group 2	48.45 & 50.94	2.49	0.57	0.001
Academic Persistence	Group 1 - Control Group	74.38 & 62.33	12.05	1.04	0.001
	Group 2 - Control Group	70.95 & 62.33	8.62	1.03	0.001
	Group 1 - Group 2	74.38 & 70.95	3.43	1.05	0.10

Based on the above findings, there is no significant difference in academic motivation between the time perspective therapy group and the cognitive-behavioral therapy group, and there is a significant difference in academic persistence between the time perspective therapy group and the cognitive-behavioral therapy group in favor of the time perspective therapy group.

4. Discussion and Conclusion

The results of multivariate analysis of covariance revealed significant differences between the control group and the time perspective-based treatment group in terms of academic motivation, academic enthusiasm, academic procrastination, and perseverance, favoring the time perspective-based treatment group. Therefore, time perspective-based therapy is effective in improving academic motivation, enthusiasm, procrastination, and perseverance. These findings are consistent with the results of prior studies (Andre et al., 2018; Golestane et al., 2016; Mirshafieea & Jafarib, 2019; Pfeifer & Wittmann, 2020; Rebetez et al., 2016; Singh et al., 2016; Torkamani & Samavi, 2019).

Zimbardo and Boyd explained five concepts related to time perspective: negative past, which generally reflects a negative attitude toward the past; positive past, which stems from a positive attitude toward the past and longing for that time; hedonistic present, representing a focus on enjoying the present moment with no concern for future events; fatalistic present, characterized by a deterministic, helpless, and hopeless outlook toward an uncertain life; and future, which involves planning and striving for future goals and outcomes. In time perspective therapy, individuals can be helped by reducing their focus on the negative aspects of the past and increasing their attention to the positive aspects, thus improving their overall well-being (Zimbardo & Boyd, 2008; Zimbardo & Boyd, 2014). In fact, the individual concludes that while the past cannot be changed and negative events cannot be denied, shifting their focus to positive aspects instead of negative ones can have a significant impact on their mood and behavior (Sword et al., 2014). Time perspective is somewhat shaped by experiences and also influences individual perception. From the relationship between experience, perception, and time perspective, three practical techniques can be derived for classroom application: the importance of setting goals and sub-goals, focusing on perceived usefulness as a diagnostic tool for motivational issues, and emphasizing intrinsic goals (Tabachnik, 2014).

To explain the above findings, it can be stated that identifying individuals' expectations for the future is a unique human characteristic that plays an important role in shaping their current behavior (Zimbardo & Boyd, 2008). The ability to look toward the future emerges during adolescence, and the expansion of individual goals related to the future affects their use of current adaptive strategies. This ability enables adolescents to set goals for future time periods, which will play an important role in creating motivation for their current activities. Adolescents differ in terms of time perspective during their secondary education. The future time perspective is shaped by factors such as family, school, and society (Mello & Worrell, 2014), and is related to motivational outcomes (Dibold & Gerstmayr,

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2011) and the adoption of adaptive learning strategies (Lee et al., 2016). When an individual has a long-term future time perspective, they pursue goals related to the distant future. However, individuals with a short-term future time perspective live in the here-and-now, focusing on goals set for the near future, and are often driven by immediate rewards and sensations (Duffy, 2015).

The results of multivariate analysis of covariance indicated that there were significant differences between the control group and the cognitive-behavioral therapy (CBT) group in terms of academic motivation, academic enthusiasm, academic procrastination, and perseverance, favoring the CBT group. Therefore, CBT is effective in improving academic motivation, enthusiasm, procrastination, and perseverance. These findings align prior findings (Bendit et al., 2023; Lee & Thomas, 2023; Murad, 2021; Pedrelli et al., 2020).

To explain the effectiveness of CBT on academic motivation, enthusiasm, procrastination, and perseverance, it can be said that in this type of therapy, individuals' beliefs and behaviors are the main targets for change (Beck, 2020). In CBT, patients are helped to identify distorted thought patterns and ineffective behaviors. To change these distorted and ineffective thoughts, structured discussions and behavioral assignments are utilized, which can have positive effects on misconceptions and beliefs related to events (Demir & Ercan, 2022). The cognitive-behavioral approach helps clients understand the thoughts and feelings that influence their behaviors (Klim-Conforti et al., 2021). Cognitive-behavioral techniques include goal-setting, cognitive-behavioral assessments, self-monitoring, Socratic questioning, cognitive restructuring, problem-solving, behavioral exercises, relapse prevention, and experiential and behavioral practices (Zamboni et al., 2021). Numerous studies support the effectiveness of this therapeutic approach in improving students' educational outcomes (Eneogu et al., 2023; Shahrokhian et al., 2021; Ugwuanyi et al., 2020; Ulaş & Seçer, 2022). Additionally, academic motivation is related to specific goals, attitudes, and beliefs, the methods for achieving them, and the individual's effort. One area that enhances intrinsic motivation and enthusiasm in students is the challenge of high expectations in such a way that it provides an opportunity for personal and private growth (Scales et al., 2020). Therefore, CBT, with its focus on realistic expectations and addressing unrealistic and unreasonable expectations, increases academic enthusiasm and perseverance (Ronnie & Philip, 2021).

According to the findings, there was no significant difference between the mean scores of the time perspective-based treatment group and the CBT group in terms of academic motivation and academic enthusiasm. However, there was a significant difference between the mean scores of the time perspective-based treatment group and the CBT group in terms of academic procrastination and academic perseverance, with time perspective-based therapy showing superiority in reducing procrastination and enhancing perseverance. To explain this finding, it can be stated that since procrastination is related to the concept of wasting time and its temporal dimensions, the aspects of time perspective play a crucial role in addressing this significant issue. Time perspective reflects an individual's cognitive approach to the psychological concept of the past, present, and future, which influences decision-making and subsequent actions. In fact, individuals who focus on the future tend to exhibit traits such as increased self-efficacy, a sense of responsibility, hope, and confidence, which lead them to evaluate potential rewards and the importance of future positive outcomes (Zimbardo & Boyd, 2008; Zimbardo & Boyd, 2014). By setting goals, having a proper orientation toward the future, engaging in purposeful planning, and avoiding immediate pleasures, they show less procrastination. In contrast, individuals with a high score in the negative past dimension, who focus on negative past events, tend to neglect future planning and important decision-making. Therefore, based on the characteristics of individuals with a negative past perspective, they are more prone to academic procrastination. One reason for the effectiveness of time perspective-based therapy on academic perseverance could be that perseverance is associated with self-esteem and optimism. Time perspective-based therapy, by focusing on individuals' future expectations, enhances their optimism toward education and the future. Furthermore, many definitions of perseverance are based on the theoretical foundations related to hard work (Gucciardi et al., 2009).

One limitation of this study is that it was conducted with flood-affected students in Khuzestan province, and caution is advised when generalizing the results to other populations and contexts. Also, this research was a cross-sectional study, and longitudinal studies would be suitable for further in-depth investigation. Future studies are recommended to investigate the effects of this therapy on individuals experiencing post-traumatic stress for other reasons.

Authors' Contributions

Authors contributed equally to this article.

Declaration

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

Transparency Statement

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

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study included obtaining informed consent for participation and ensuring the confidentiality of participants' information. The study was reviewed and approved by the Islamic Azad University, Isfahan (Khorasgan) Branch, under the ethics code IR.IAU.KHUISF.REC.1403.099.

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