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Assessment of the Effectiveness of Mindfulness Training Based on Stress Reduction and Time Management Skills Training on Academic Emotions

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A B S T R A C T

Objective: The aim of the present study was to assess the effectiveness of mindfulness training based on stress reduction and time management skills on academic emotions.

Methods and Materials: The research method was a quasi-experimental design with a pre-test-post-test with a control group. The population consisted of all female students in the first cycle of secondary school in the city of Rey during the 2019-2020 academic year, from which 45 students were selected through screening of pre-test results and randomly assigned into two experimental groups and one control group (15 students each). The first experimental group received stress-reduction-based mindfulness intervention derived from Kabat-Zinn's Full Catastrophe Living (2005) over 8 sessions, and the second experimental group received time management skills training from Tracy and Brian (2008) over 10 sessions. Data were collected using the Academic Emotions Questionnaire by Pekrun et al. (2005).

Findings: The analysis of data using multivariate analysis of covariance showed that mindfulness training based on stress reduction and time management skills was effective on students' academic emotions at a significance level of P<0.001. Additionally, the results indicated that mindfulness was more effective on the components of hope, anger, and anxiety of academic emotions, while time management was more effective on the components of enjoyment and fatigue of academic emotions.

Conclusion: It can be concluded that the application of educational interventions in academic processes will facilitate the regulation of students' emotions.

Keywords: *Mindfulness-Based Stress Reduction, Time Management Skills, Academic Emotions.*

1. Introduction

Today, education is responsible for creating a suitable environment for the development of individuals' talents and abilities, and what makes it significant is its role in the advancement of cultural, social, and economic domains of societies (Sheykholeslami et al., 2021). Studies have shown that some students lack the necessary skills and strategies to achieve their academic goals and desires, leading to an increase in negative attitudes and mental and physical burnout, which in turn undermines personal growth and academic progress (Ben-Eliyahu, 2019; Usán Supervía et al., 2020). Therefore, the current research seeks a factor that can create and enhance motivation to improve this reduction, which can be the academic emotions (Linnenbrink & Pintrich, 2002).

Pekrun identified specific emotions related to learning, education, and academic progress, termed academic emotions. Academic emotions are directly related to academic activities or outcomes and include activities such as the pleasure derived from learning, fatigue from classroom teachings, and frustrations and anger from difficult assignments (Pekrun, 2006; Pekrun et al., 2009). Moreover, academic emotions are divided into several dimensions based on their positive or negative value, pleasantness or unpleasantness, and the level of activation they entail, either active or passive (Linnenbrink & Pintrich, 2002). In essence, academic emotions are issues that directly relate to learning, classroom education, and academic progress. These emotions can affect the quality of an individual's performance, directly impacting academic activities or the outcomes of academic progress, leading to success or failure in educational matters (Ben-Eliyahu, 2019; Komlosi-Ferdinand, 2020; Wu et al., 2021). Recent decades have seen interventions aimed at improving and enhancing students' motivation and academic activities, significantly aiding academic progress and success. Among these is the stress-reduction-based mindfulness training program created through meditative practices, which helps students to be more flexible (Jones et al., 2018).

Mindfulness training is a psychotherapeutic method based on stress reduction, teaching individuals to represent academic objects in life beyond immediate human control through breathing and contemplation. This therapeutic method is a combination of relaxation and mindfulness (Kabat-Zinn, 2003). Mindfulness, a form of meditation (Öst, 2008), is defined by Kabat-Zinn (2003) as paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally (Kabat-Zinn, 2003). In the Mindfulness-Based Stress Reduction (MBSR) program, individuals learn to expand their experience of acceptance and compassion instead of judging and to create present moment awareness instead of automatic pilot, learning new ways to respond to situations (Crane, 2009). Therefore, mindfulness helps students gain better control and awareness of their emotions, potentially commit more to academic matters due to awareness of their thoughts, and exhibit desirable academic actions through awareness of their behaviors, ultimately experiencing more emotion (Sheykholeslami et al., 2021).

Another academic progress intervention is time management, which, as a significant component of stress reduction, has a high impact on students' performance. Individuals who manage their time value themselves, are meticulous and prioritize their tasks, and plan to achieve their goals (Golabli, 2015). According to the time management theory, one of the most comprehensive and famous time management theories globally, if a person cannot manage time well, managing other matters becomes difficult. Unfortunately, many people always experience a shortage of time due to a busy life. Five main techniques can help in this regard: having a sense of urgency, stopping procrastination, working in real-time, thinking on paper, and avoiding distractions such as responding to emails or excessive TV watching (Pérez-Sanagustín et al., 2021). During school years, the absence of planning in students causes stress from not completing assignments and study materials on time, which becomes a significant barrier to academic success (Shoaei et al., 2022; Wolters et al., 2017). According to Gümüsgül (2019), time management is a crucial aspect of students' academic self-regulation. The clearest reason for not using time management is that students do not know what time management is (Gumusgul, 2019). The second reason is laziness; some learners lack the necessary goal and motivation for effective planning. The third group that does not use time management are those who prefer to work under pressure and tight time constraints ("last minute") and crisis conditions. While there may be justifiable circumstances for not using time management, the benefits of successful time management outweigh any reason or justification (Manzari & Poorkarimi, 2022). The literature review showed that school expectations and programs impact time evaluations and students' efforts to balance assignments with the required time for completion and motivate students for study and learning (Marshall, 2018), encouraging them to continue work and effective time management, helping learners to engage more

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effectively in motivational conflicts between study areas and leisure time, and to use time effectively to complete academic tasks (Grund & Fries, 2014); thus, time management is an important strategy that helps students experience academic progress.

In addition to theoretical relationships, the research literature also indicates that mindfulness has a significant relationship with academic emotions (Moradi et al., 2020); therefore, it can be stated that mindfulness-based stress reduction can be examined as a precursor to academic emotions. Similarly, the literature on time management intervention showed a significant relationship with academic emotions (Arguedas et al., 2016); therefore, it confirms the effectiveness of time management-based training on academic indicators, including academic emotions. Since the ultimate goal of education is learning, any factor that realizes or accelerates this process should be considered. Theoretical foundations and empirical evidence showed that interventions based on mindfulness-based stress reduction and time management could positively control academic emotions and improve academic performance quality (Wu et al., 2021), leading to better learning and, consequently, academic progress. Therefore, awareness of stress-reduction-based mindfulness and time management can aid in developing self-sufficiency in learning. Considering the difference between the mindfulness-based stress reduction intervention, which is a stress coping method through attention and focus on the present (Kabat-Zinn, 2003), and time management training, which is also a stress coping method through effective time use, no research was found that measured the performance of these two intervention methods on students' academic emotions; hence, the lack of comparison between intervention methods in the research variable makes conducting research necessary. Therefore, the researcher seeks to answer how effective mindfulness training based on stress reduction and time management training is on academic emotions?

2. Methods and Materials

2.1. Study Design and Participants

The present study was applied in objective and, considering the nature of the topic and the research goals, was of a quasi-experimental type with a pre-test-post-test design with a control group. The population included all female middle school students in Rey city during the 2019-2020 academic year. Initially, Shahid Ghyoori middle school was selected from among Rey city's middle schools using simple random sampling, and then three classes from the seventh, eighth, and ninth grades were randomly chosen, comprising 109 students in total. In the first phase of the pre-test, the Academic Emotions Questionnaire was completed by all students, and 45 students who scored the lowest compared to other students were randomly assigned into two experimental groups and one control group (15 students each) based on research entry criteria such as age range between 12 to 15 years, no behavioral and disciplinary problems, and no learning disorders, and exit criteria including absence from more than three sessions and unwillingness to continue cooperation and training. It is necessary to mention that the required permissions for conducting the training sessions were obtained from the Department of Education. Then, the mindfulness intervention based on stress reduction derived from Kabat-Zinn's Full Catastrophe Living (2003) was conducted for the first experimental group in eight 120-minute sessions, and the time management intervention from Tracy and Brian (2008) was executed for the second experimental group in ten 120-minute sessions, while the control group received no training. After the intervention, both experimental groups and the control group responded to the questionnaires again. Ethically, written consent, confidentiality of information, and freedom to participate were considered. The following measurement tools were used to gather information:

2.2. Measures

2.2.1. Academic Emotions

The short form of the Academic Emotions Questionnaire with 75 questions was used to assess students' academic emotions. This questionnaire measures classroom emotions and includes sub-components such as enjoyment, hope, pride, anxiety, fatigue, hopelessness, anger, and shame, divided into positive emotions including enjoyment, hope, and pride; and negative emotions including anger, anxiety, shame, hopelessness, and fatigue. The questionnaire scores are rated on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). The lowest score is 75, and the highest score is 375, where a higher score indicates a higher level of academic emotion in the student and vice versa. The original version's reliability for sub-components ranged from 0.75 to 0.93. In the study by Kadivar et al. (2009), the questionnaire's reliability was calculated using Cronbach's alpha method, indicating good reliability. Additionally, their results, consistent with Pekrun's (2002) findings, showed the questionnaire has acceptable internal consistency with

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Cronbach's alpha coefficients for its subscales between 0.74 and 0.86 (Moradi et al., 2020). In the present study, Cronbach's alpha was 0.85.

2.3. Interventions

2.3.1. Mindfulness Training Program

The Eight-Week Mindfulness Training Program, derived from "Full Catastrophe Living" by Kabat-Zinn (2003), is designed to enhance self-awareness, integrate thinking with self-awareness, enhance and practice attention, and reinforce learned behaviors through various mindfulness practices. The program begins with an emphasis on developing self-awareness through body scan and breathing exercises, progressing to include thinking, yoga, and meditation to deepen mindfulness. The latter weeks focus on enhancing attention through mixed methods and repeating learned behaviors to solidify the mindfulness practice. This comprehensive program aims to cultivate a heightened state of awareness and presence, allowing participants to engage more fully with their experiences and reduce stress (Kabat-Zinn, 2003).

First and Second Weeks: The initial focus is on developing self-awareness. Participants engage in body scan exercises for 45 minutes daily, six days a week, complemented by 10 minutes of daily breathing exercises. These practices aim to heighten awareness of bodily sensations and the breath, laying the foundation for mindfulness.

Third and Fourth Weeks: These weeks aim to integrate thinking with self-awareness through alternating body scan and yoga sessions and seated breathing meditation. The exercises, designed for 45 minutes daily, six days a week, and 15 to 20 minutes of seated meditation, respectively, deepen the mindfulness experience by incorporating physical movement and focused attention on the breath.

Fifth and Sixth Weeks: Attention is further enhanced and practiced through sitting meditation and yoga, focusing on the breath for 30 to 45 minutes daily, alternating with yoga sessions. Participants also start walking meditation, paying attention to bodily sensations, sounds, thoughts, and emotions to cultivate continuous awareness.

Seventh Week: This week increases attention through a combination of sitting, yoga, and body scan techniques for 45 minutes daily. Participants are encouraged to practice without the aid of tapes, integrating the techniques learned in previous weeks to deepen mindfulness.

Eighth Week: The final week focuses on repeating learned behaviors. Participants revisit the use of tapes for at least two body scan sessions and continue with sitting and yoga practices. This repetition reinforces the mindfulness skills acquired throughout the program.

2.3.2. Time Management Skills Training Program

The Ten-Week Time Management Skills Training Program, based on Tracy and Brian's (2008) methodology, is structured to introduce and reinforce key time management principles and techniques. Starting with an introduction to basic rules and planning, the program progresses through analyzing the 80/20 rule, focusing on goals, needs assessment, the importance of continuous learning, identifying barriers, understanding time limitations, recognizing successes, and prioritizing tasks. Each session is designed to equip participants with practical skills for effective time management, ultimately leading to improved productivity and reduced stress (Golabli, 2015).

First Session: Participants are introduced to the program's structure, rules, and objectives. The session aims to motivate participants by setting personal goals and beginning with basic planning techniques.

Second Session: Focuses on the 80/20 rule, teaching participants to analyze and apply this principle to prioritize tasks based on their impact, supplemented by sharing personal experiences and understanding the consequences of actions.

Third Session: Concentrates on goal-focused training, introducing method A, B, C, D, E for prioritizing tasks and sharing real-life applications of goal-focused strategies.

Fourth Session: Emphasizes needs assessment and prioritization, teaching the Law of Necessity and the importance of preparing before starting tasks, alongside sharing real-life experiences.

Fifth Session: Highlights the importance of lifelong learning within one's field of study and the role of unique talents in time management, aiming to inspire continuous skill and talent development.

Sixth Session: Identifies barriers to progress and teaches how to segment large goals into manageable tasks, sharing experiences related to overcoming limiting factors.

Seventh Session: Discusses time and its limitations, stressing the importance of setting time limits for tasks and focusing mental and physical energies on specific topics for enhanced productivity.

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Eighth Session: Addresses understanding successes through positive self-talk, encouraging participants to engage in positive internal dialogues and share experiences related to applying this practice in real-life situations.

Ninth Session: Reiterates the importance of prioritizing tasks, focusing on identifying and managing the timing of difficult and easy tasks, and avoiding procrastination through time management strategies.

Tenth Session: Concludes with a review of the skills learned throughout the program, emphasizing the increase in efficiency through the application of time management skills and summarizing key takeaways for ongoing application.

2.4. Data analysis

Data were examined using descriptive statistics, including frequency distribution tables, means, and standard deviations. Hypotheses were tested using repeated measures ANOVA, and data were analyzed using SPSS version 23.

3. Findings and Results

The results showed the average age in the groups was 14. The mean and standard deviation of the academic grades of the sample members in the mindfulness training group based on stress reduction were 18.21 and 0.82, respectively, in the time management training group were 17.52 and 0.60, respectively, and in the control group were 18.26 and 0.89, respectively. Subsequently, the mean and standard deviation of the research variables are provided.

Table 1

Pre-test and Post-test Mean and Standard Deviation of Research Variable Components

Subscale	Group	Pre-test Mean (SD)	Post-test Mean (SD)
Enjoyment	Mindfulness	34 (4.8)	46.3 (4.6)
	Time Management	30.5 (8)	31.4 (7.7)
	Control	33.2 (10.1)	33.9 (9.8)
Hope	Mindfulness	21.7 (3.8)	22.7 (3.9)
	Time Management	20.7 (5.3)	34.5 (3.8)
	Control	21 (4.7)	21.6 (4.7)
Pride	Mindfulness	23.7 (3.5)	24.6 (3.1)
	Time Management	21.1 (4.3)	22.5 (4.4)
	Control	22.9 (5.8)	23.3 (5.8)
Anger	Mindfulness	26.5 (7.9)	14.1 (5)
	Time Management	32.5 (10.6)	30.3 (10.1)
	Control	26.1 (13.6)	26 (13.3)
Anxiety	Mindfulness	36.3 (7.4)	12.5 (6.2)
	Time Management	40.5 (8.2)	28.3 (8.2)
	Control	30.8 (11.2)	31 (11.4)
Shame	Mindfulness	33.1 (9.2)	31.9 (9.3)
	Time Management	39.5 (8.3)	38.3 (8.5)
	Control	30.4 (9.6)	30.1 (9.8)
Hopelessness	Mindfulness	29.1 (9.5)	27.9 (10)
	Time Management	31 (13.1)	28.6 (12.6)
	Control	27 (14.3)	26.7 (14)
Fatigue	Mindfulness	34.6 (10.5)	33.1 (10.3)
	Time Management	31.6 (12.9)	17.5 (11.4)
	Control	30.3 (15.2)	30.9 (15.8)

Initially, the four main prerequisites of this test were examined, and the results showed that the Smirnov test z size for students was not significant at any stage of the test, and the data have a normal distribution spread ($p>0.05$). The Levene's test also showed that the homogeneity of variances is established at each measurement time ($p>0.05$), indicating this statistical assumption is met. The Box's test results for the hypothesis of covariance matrix equality showed that the result obtained in the variable of mastery goal orientation is not significant, indicating this assumption is met. The Mauchly's test size for examining the sphericity assumption for the research variables ($p>0.05$) was obtained, and since the Mauchly's test size is not statistically significant, the sphericity assumption is met. Given the establishment of

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statistical assumptions and the sphericity condition, multivariate tests can be used to examine the research variable.

Pillai's trace criterion in the research variable, which is less than 0.01, rejects the null hypothesis of equality of group means, meaning the effects of the independent variables of mindfulness training based on stress reduction and time management training on the dependent variable are statistically significant, i.e., the effectiveness of the methods differs significantly.

The results of the repeated measures ANOVA are presented in Table 2.

Table 2

Test of Between-Groups Effects

Academic Emotions	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance Level	Eta Squared
Model Fit						
Enjoyment	5178.718	10	517.872	301.077	0.001	0.989
Hope	1699.747	10	169.975	134.232	0.001	0.975
Pride	963.251	10	96.325	169.460	0.001	0.980
Anger	6204.055	10	620.406	156.032	0.001	0.979
Anxiety	3738.216	10	373.822	82.220	0.001	0.960
Shame	4081.247	10	408.125	869.840	0.001	0.996
Hopelessness	6648.799	10	664.880	473.134	0.001	0.993
Fatigue	6668.305	10	666.830	157.620	0.001	0.987
Group						
Enjoyment	858.908	2	429.454	249.673	0.001	0.936
Hope	956.943	2	478.471	377.857	0.001	0.957
Pride	5.873	2	2.936	2.166	0.122	0.133
Anger	793.056	2	396.528	99.727	0.001	0.854
Anxiety	775.626	2	387.813	85.298	0.001	0.834
Shame	4.023	2	2.011	1.287	0.171	0.112
Hopelessness	14.938	2	7.469	2.315	0.101	0.138
Fatigue	1154.378	2	577.189	222.989	0.001	0.929

The effect size for each of these variables is also seen in the column of partial eta squared in the multivariate analysis of covariance model. The higher this column's value for each of the rows, the greater its impact on the dependent variable. Considering that the partial eta squared values for the components of pride, shame, and hopelessness in the academic emotions variable are 0.133, 0.112, and 0.138, respectively, it can be said that the effect size of mindfulness training based on stress reduction and time management training on these variables was negligible or had no effect.

Table 3

Bonferroni Pairwise Comparisons

Variable	(I) Group	(J) Group	Mean Difference	Standard Error	p	Lower Bound	Upper Bound
Enjoyment	Mindfulness	Time Management	12.093	0.605	0.000	10.568	13.618
Hope	Mindfulness	Time Management	-12.011	0.519	0.000	-13.319	-10.506
Pride	Mindfulness	Time Management	-0.414	0.348	0.727	-1.290	0.462
Anger	Mindfulness	Time Management	-10.614	0.921	0.000	-12.933	-8.296
Anxiety	Mindfulness	Time Management	-2.789	0.984	0.023	-5.268	-0.311
Shame	Mindfulness	Time Management	0.080	0.316	1.000	-0.416	0.876
Hopelessness	Mindfulness	Time Management	1.185	0.547	0.112	-0.193	2.563
Fatigue	Mindfulness	Time Management	12.840	0.743	0.000	10.969	14.710

According to Table 3, it is observed that the difference between mindfulness training based on stress reduction and time management training on the academic emotions variable, in all indices except for the sub-scales of pride, shame, and hopelessness, on which none of the interventions had a significant effect, was significant. In the sub-scales of hope, anger, and anxiety, the effectiveness of time

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management training and in the sub-scales of enjoyment and fatigue, mindfulness treatment showed more effectiveness.

4. Discussion and Conclusion

The current study aimed to assess the effectiveness of mindfulness training based on stress reduction and time management skills training on academic emotions. The findings of the between-group effects tests for the academic emotions variable showed that both mindfulness training based on stress reduction and time management skills training were effective on academic emotions variables except for pride, shame, and hopelessness. Additionally, the Bonferroni post hoc test results indicated that mindfulness training based on stress reduction had a greater effectiveness on the variables of hope, anger, and anxiety, while time management skills training showed greater effectiveness on the variables of enjoyment and fatigue.

In explaining the effectiveness of the mindfulness training intervention based on stress reduction, which is consistent with the prior findings (Asani et al., 2023; Moradi et al., 2020), it can be stated that emotions and feelings are considered personal dimensions of students that are present during the learning process and affect students' active learning. Zimmerman (2011) states that active learning requires positive beliefs about personal talent and capabilities; if individuals have a correct understanding of their abilities and skills, they are more likely to utilize active and autonomous learning processes and, as a result, experience better academic performance (Zimmerman & Schunk, 2011). Therefore, activating positive emotions such as enjoyment, application of creative learning strategies, flexibility, the use of cognitive and metacognitive strategies appropriate to learning goals, and the facilitation of academic tasks create conditions where students enjoy classroom activities, are hopeful for success and academic progress, and participate actively and spontaneously in the learning process. Asani et al. (2023) in their study showed that mindfulness training increases positive emotions such as enjoyment, pride, hope, and decreases negative emotions such as anger, shame, anxiety, fatigue, and hopelessness (Asani et al., 2023). Similarly, Moradi et al. (2020) showed that mindfulness training based on stress reduction had a positive effect on increasing positive emotions and reducing negative academic emotions in students (Moradi et al., 2020). This means that mindfulness with positive strategies such as the absence of judgment and evaluation, patience, tolerance, beginner's mind, absence of rumination, acceptance contributes to the persistence of positive emotions. In this process, every thought or feeling that enters an individual's attention is received and accepted just as it is, without any judgment by the individual. This behavior is a preventative reaction to thoughts that carry a negative emotional load, causing sadness and anxiety in the individual, and when the individual does not judge it, it helps the individual return to balance after experiencing negative emotions. In other words, mindfulness is a therapeutic method based on stress reduction that is performed through breathing and thought control and is actually a combination of relaxation and mindfulness (Kabat-Zinn, 2003). In fact, the mindfulness-based stress reduction method, observing and accepting continuous and distressing objective events, causes the experience of negative emotions, and when the individual fully accepts what has happened without judgment and without comment, it increases the individual's capacity to endure pressure and pain. In other words, facing negative events and emotions and not reacting to them reduces avoidant behaviors in individuals, which were previously part of individual behavioral processes, and as a result, mindfulness-based stress reduction also reduces the avoidant strategy (Sheykholeslami et al., 2021). Also, mindfulness meditation causes mood improvement, and mindfulness training in the short term can reduce fatigue, anxiety, and other negative emotions. Therefore, it can be concluded that students experience both positive and negative academic emotions, and if they are taught mindfulness-based stress reduction methods to accept situations they face with various problems and issues in their studies without judgment and prejudice and strive to solve them, then their emotional capacity will increase, and as a result, they will experience less anxiety and stress during their study period and will experience higher academic progress.

Also, in explaining the effectiveness of time management skills training on academic emotions, consistent with the prior findings (Arguedas et al., 2016), it can be stated that Lazarus (1991) distinguishes between positive emotions that facilitate the achievement of personal goals and, conversely, negative emotions that interfere with achieving personal goals (Lazarus, 1991). Generally, positive emotions are in harmony with personal goals, and negative emotions are not in harmony with personal goals. However, both sets of emotions have their advantages. Positive emotions expand human thinking, leading to increased creativity, curiosity, and social connections, ultimately leading to the acquisition of physical and social skills and increasing the resources that

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enhance the individual's ability to adapt and evolve in the face of various events and issues. On the other hand, negative emotions also use motivational resources and give the individual a defensive spirit, cooperation spirit, or guilt feeling and search for justice or anger, and are more informative, meaning they warn the individual of a negative event or a problem and help the individual to improve their learning in these cases. In other words, the negative feeling indicates a problem and motivates the individual to solve it. In other words, it helps the individual to manage emotions that are not in line with personal and individual goals by managing their time and planning their activities. The research findings of Arguedas et al. (2016) showed that time management is effective on academic emotion; therefore, time management is among the skills that help students achieve academic goals, which is academic progress. In other words, there are general guidelines in time management that are used for different environments such as home, school, etc (Arguedas et al., 2016). From this perspective, if students recognize and understand the goals and why of time management, avoid procrastination in performing academic tasks, and also do not leave their tasks and assignments to the last minute (Manzari & Poorkarimi, 2022), they succeed in performing their academic tasks both at school and at home without stress and anxiety. In this case, by controlling and managing their emotions and experiencing less anxiety caused by tasks and academic work and time management, they can achieve higher academic progress. Therefore, it can be concluded that if students can correctly manage and plan the times for performing their academic and educational tasks, they will experience less anxiety in performing their tasks. They can also easily manage other daily issues and not worry about the lack of time and time to attend to their personal and academic duties. Ultimately, they will experience greater academic progress.

Also, the Bonferroni post hoc test results showed that mindfulness training based on stress reduction had higher effectiveness on the components of hope, anger, and anxiety of academic emotions. In explaining this result, it can be said that Lazarus (1991) states that hope is related to the feeling associated with desirable outcomes that are perceived and accepted based on desirable and acceptable goals (Lazarus, 1991). Therefore, students who have hope for progress and success and along this path, using the mindfulness method, accept the results that come from efforts and academic tasks without judgment and prejudice, and if acceptable, continue it, and if not acceptable, examine issues and obstacles and solve them and use them in subsequent efforts. In this case, by reducing anxiety and stress in achieving educational goals and values, they can achieve higher academic success. Also, the component of anger, which is a pervasive emotion and the most intense emotion, arises from facing obstacles and can be dangerous if not controlled. The basis of anger is the belief that things are not as they should be. However, on the one hand, anger can be fruitful in that it increases individuals' sense of control, makes individuals more sensitive to others' injustice, and through struggle and a sense of control, directs individuals towards overcoming unreasonable obstacles and correcting them (Reeve et al., 2004). This control of feeling through awareness and oversight of actions and the environment helps the individual to respond with thought and consideration to events rather than impulsively and without reflection. In other words, mindfulness helps us understand that negative emotions may occur, but they are not a constant and permanent part of personality (Emanuel et al., 2010) and, as a result, control that immature heated emotion and receive calmness. This process is from mindfulness-based stress reduction training methods that an individual using mindfulness with stress reduction can have a significant share in increasing academic progress. Since academic stress and academic progress have negative relationships with each other and psychological resilience, belief in the value of education, and the intensity of academic stress have a moderating role in this relationship, mindfulness training can be effective on these factors. Another component that mindfulness training based on stress reduction was more effective on is anxiety. Mindfulness techniques are effective in increasing muscle relaxation and reducing worry, stress, depression, and anxiety (Kabat-Zinn, 2003). In other words, mindfulness means paying attention to the present moment in a particular way, purposefully and without judgment. Being in the moment with whatever is happening now along with without judgment and without comment on what is happening (Heydarian & Salimi, 2021); therefore, mindfulness by creating mental and psychological calm helps the individual to take steps towards academic progress while maintaining calm and reducing their anxiety.

On the other hand, the results showed that time management skills training was more effective on the components of enjoyment and fatigue of academic emotions than mindfulness. Enjoyment arises from pleasant outcomes such as success in performing a task or activity, personal progress, achieving goals and values, and ultimately what the person desires to achieve (Reeve et al., 2004). On the

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other hand, time management skills also deal with the outcomes and results of goals and planning. In this sense, when students plan and manage their time for their academic tasks and studies, and act according to it, they achieve successful results by reducing the experience of stress and anxiety, and then experience the feeling of happiness and enjoyment from achieving positive results. Also, another component is fatigue. During studies, it often happens that students feel tired and weak due to difficult tasks, academic failures, classroom teachings, etc., and as a result, experience negative emotions, increasing their anxiety. However, when students learn time management skills, plan the times for performing different tasks at different times, and proceed based on the planning that has been done according to abilities and personal and environmental conditions, then with the completion of each part of the plan and learning and performing tasks, their anxiety and stress are reduced, and they gain peace of mind and confidence and achieve higher academic progress.

5. Limitations & Suggestions

Every research faces limitations for implementation. Among the limitations of this research was the limitation of the sample group to female middle school students; therefore, caution should be exercised in using and generalizing the results to other groups. Also, the absence of a follow-up period was a limitation that measured the sustainability of the effectiveness of educational interventions. Therefore, it is suggested that the effectiveness of these effective interventions be examined in other age groups and other educational stages and with the control of confounding variables. In addition, to show the sustainability of the training, one-month or six-month follow-up periods should also be implemented. Also, considering the different motivational patterns in girls and boys, it is suggested that this plan be implemented on male samples as well. In this regard, it is suggested that given the positive effectiveness of mindfulness training and time management on success and academic progress, these educational interventions be implemented for students by teachers so that students can achieve higher academic progress by being aware of their capabilities and planning and managing their time in performing academic tasks such as challenging tasks and not emphasizing external controllers in learning environments.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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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Authors' Contributions

All authors equally contributed to this article.

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