Effectiveness of Stress Management Training on Academic Optimism and Hope of University Entrance Exam Applicants

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ABSTRACT

Aims As one of the primary causes of confusion and decline in mental health, stress can be the source of considerable negative effects on student performance. The present study aimed to investigate the effectiveness of stress management training in academic optimism and hope of university entrance exam applicants.

Participants & Methods This was a quasi-experimental study based on a pretest-posttest design with a follow-up. The statistical population consisted of all university entrance exam applicants in Ahvaz, Iran, in 2022. Thirty applicants, who met the inclusion criteria, were selected as the sample using convenience sampling and randomly assigned to the treatment and control groups (15 participants per group). The participants in the treatment group attended eleven 120-minute sessions of cognitive-behavioral stress management (CBSM) training program, whereas those in the control group received no intervention. The Academic Optimism Scale and Adult Hope Scale were used to collect data. Data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (analysis of covariance).

Findings The results showed that the stress management training program improved the academic optimism (F=117.24, P=0.001) and hope (F=66.33, P=0.001) of the participants in the treatment group.

Conclusion It can be concluded that stress management training in stressful situations, such as the university entrance exam can boost candidates' academic optimism and hope.

Keywords Stress disorders; Academic Success; Hope; Students

CITATION LINKS

[1] Participating in university entrance exam despite repeated failure: A qualitative study of ... [2] Academic stress from the viewpoint of Iranian ... [3] The validity of Iran's national university entrance examination (Konkoor) for predicting medical students' academic ... [4] The impact of self-efficacy, optimism, resilience and perceived stress on academic performance and its subjective evaluation: A ... [5] Self-efficacy, optimism, and academic performance as psychoeducational variables ... [6] Reflective teaching and academic optimism as correlates of work ... [7] Components of unrealistic optimism of college students: The case of the COVID-19 ... [8] Comparative study of hope, academic achievement motivation, and academic self-concept among students with and without ... [9] The role of academic hope and perceived emotional support in predicting academic ... [10] Causal explanation of academic enthusiasm based on the interaction of teachers ... [11] Sense of hope affects secondary school students' mental health: A moderated ... [12] Hope and optimism as predictors of academic performance and ... [13] The potential protective effect of hope on students' experience of perceived stress and burnout during ... [14] Effect of cognitive learning strategy on academic stress of the university students in COVID-19 ... [15] The impact of stress on body ... [16] Risk factors associated with stress, anxiety, and depression among university undergraduate ... [17] Effects of test stress during an objective structured clinical ... [18] Examination stress in academic students: A multimodal, real-time, real-life investigation of reported stress ... [19] A review of the effectiveness of stress management skills training on academic vitality and psychological well-being of ... [20] Effects of self-guided stress management interventions in college students: A systematic review and ... [21] Cognitive behavioral stress management effects on psychosocial and physiological adaptation in women undergoing treatment for ... [22] The effects of cognitive-behavioral stress management on ... [23] Student academic optimism: a confirmatory factor ... [24] Evaluate the psychometric properties of Tschannen-Moran et al academic optimism ... [25] Development and validation of the state hope ... [26] The role of self-compassion and hope in the relationship between psychological wellbeing, maladaptive schemas, resilience, and social support in women with ... [27] The effectiveness of stress-management-based cognitive-behavioral treatments on anxiety sensitivity, positive and negative affect and ... [28] Effects of cognitive-behavioral stress management ... [29] A pilot study of cognitive behavioral stress management ... [30] Effect of cognitive behavioral stress management ... [31] Effects of a randomized-controlled trial of ... [32] Cognitive Behavioral Stress Management ...

Introduction

Having a university degree has turned into a social value and is one of the important factors of social mobility in today's Iranian society. Consequently, entering a university is regarded as an important life event because it can affect the future occupation, income level, social relationships, and even the marital life of people [1]. The national entrance exam, which is a perfect example of a decisive exam with great effects on all aspects of the lives of both applicants and their families, is one of the ways of entering a university in Iran [2]. It is hence necessary to understand the factors affecting the performance of the applicants in this period. The applicants' belief in their good performance is one of the factors influencing their educational performance as well as their success in the university entrance exam [3]. Such an attitude toward academic results is referred to as academic optimism, which influences the academic performance of students regardless of their socioeconomic status.

Academic optimism refers to a combination of collective efficacy and trust in parents and students [4]. In other words, this construct is among the most important and prominent personality constructs that include positive cognitions [5]. Optimism encourages and alleviates people's doubts and worries in difficult situations and motivates them to do their best in order to achieve their goals [6]. Accordingly, high levels of academic optimism help students to achieve their academic goals [7].

Academic hope is another construct that influences academic success among students [8]. Academic hope is a cognitive capacity based on a shared feeling that results from the purposive determination of goals and the path to achieving them [9]. It is defined as the expectation of achieving positive educational results. Hope is closely related to academic success and can prepare students for life and a brighter, more dynamic future [10]. Hopeful people are more optimistic and capable of achieving their goals. As a result, academic hope assists students in achieving their academic goals, implying that more hopeful students outperform less hopeful ones in school and in life [11]. It can be hence stated that academic optimism and academic hope are among the influential factors in the success of university entrance exam applicants [12, 13].

As one of the primary causes of confusion and decline in mental health, stress can be the source of considerable negative effects on student performance [14]. Stress causes many physical and psychological symptoms that vary depending on the individual's situational factors. These symptoms can include poor physical health and also depression [15]. Although a limited and manageable level of stress may be beneficial, prolonged or severe stress can help cause or exacerbate illnesses [16]. This may be especially problematic for university entrance exam applicants, who are at a critical stage in their academic careers and jeopardize their academic success [17, 18]. As a result, stress management for the applicants during this period can effectively reduce their psychological problems and stress and also improve their academic optimism and academic hope.

Stress management, which involves a broad spectrum of techniques and psychotherapies aimed at controlling high levels of stress, especially chronic stress, in people and improving their daily functioning, is considered one of the keys to living a happy and successful life in modern society [19, 20]. Stress management programs include several cognitive-behavioral techniques aimed at reducing the psychological or physiological symptoms of stress, eliminating or moderating the stressor, or changing the cognitive evaluation of the stressors, which all can be effective in improving people's physical and mental health [21, 22]. Therefore, stress management is especially important among university entrance exam applicants, and investigating the effectiveness of stress management training on academic optimism and academic hope of them can be very helpful in finding ways to reduce their stress. Accordingly, the aim of this study was to investigate the role of stress management training on academic optimism and hope of university entrance exam applicants.

Participants and Methods

This was a quasi-experimental study based on a pre-test-post-test design with a follow-up and control group. The statistical population consisted of all the university entrance exam applicants who visited the university entrance exam preparation centers in Ahvaz, Iran, in 2022. Thirty applicants, who met the inclusion criteria, were selected as the sample using convenience sampling and randomly assigned to the treatment and control groups. We included 15 entrance exam applicants in each group using G*Power software with an effect size of 1.12, a test power of 0.90, and α=0.05. They took the pre-test and then those in the treatment group attended 11 two-hour sessions of a CBSM training program. The training sessions were presented by the author once a week. Finally, the post-test was performed for both groups, and the follow-up examinations were also conducted two months later. The inclusion criteria were non-affliction with psychological illnesses, being a university entrance exam applicant, and attending no other training intervention. The exclusion criteria were absence in more than two sessions and unwillingness to continue participation in the study.

Measurement tools

Academic Optimism Scale (AOS): This 28-item scale was developed by Tschannen-Moran *et al.* [23]. It measures the academic optimism of students using

the academic emphasis, student trust in teachers, and a sense of identity within the school components. The items are scored based on a five-point Likert scale (From 1: very low to 5: very high), and higher scores indicate higher levels of academic optimism. Ghadampour *et al.* [24] reported a Cronbach's alpha of 0.96 for the AOS.

Adult Hope Scale (AHS): This is a self-report measure of hope developed by Snyder *et al.* [25]. Nine items of this scale are scored based on a five-point Likert scale (From 1: totally wrong to 5: totally right). The minimum and maximum scores obtainable on the AHS are nine and 45, respectively. The higher scores indicate high level of hope. Hasani *et al.* [26] reported a Cronbach's alpha of 0.82 for the AHS.

Procedure

The stress management training program presented to the participants in the treatment group consisted of eleven two-hour sessions based on CBSM. At the end of the intervention program, the participants in both groups filled out the Academic Optimism Scale and Adult Hope Scale as the post-test. Two months later, all participants were invited to take follow-up tests in order to investigate the long-term effects of the intervention. The training sessions of stress management training sessions based on a cognitive-behavioral method included the following contents in brief: Session 1: Understanding the concept of stress, learning about the physical effects of stress, practicing progressive muscle relaxation for the first session of 16 muscle groups. Session 2: Recognizing the importance of awareness in stress management, learning about physical response to stressors, practicing progressive muscle relaxation for the second session of eight muscle groups. Session 3: Understanding the relationship between thoughts and feelings and the thought evaluation process, practicing progressive muscle relaxation for four muscle groups. Session 4: Learning about negative thoughts and cognitive distortions, combining diaphragmatic breathing with imagery, practicing passive progressive muscle relaxation, visualizing a specific place. Session 5: Learning about rational and irrational self-talk and how to replace negative and distorted thoughts with rational thoughts. Session 6: Implementing stress management with relaxation technique in real life, learning different coping techniques, practicing self-training with a focus on heart rate, breathing, abdomen, and forehead. Session 7: Learning effective coping methods, practicing self-training along with imagery, practicing sun meditation in combination with self-training. Session 8: Learning about anger and specific anger patterns, learning anger management techniques, and learning and practicing meditation. Session 9: Learning about interpersonal styles, practicing instrumental communication, learning breath counting meditation, practicing sun meditation. Session 10: Learning about the benefits of social support, assessing the community support

network, reviewing the entire program, and planning home relaxation exercises. Session 11: Developing a personal stress management program, summarizing the program, asking relevant questions, and completing post-test questionnaires.

Statistical analysis

Data were statistically analyzed using analysis of covariance by SPSS 25.

Findings

Table 1 presents the descriptive indices (mean and standard deviation) for academic optimism and academic hope in each group. The mean scores of pre-test, post-test, and follow-up for academic optimism were 93.13±10.7, 103.93±11.91, and 102.67±11.42 in the treatment group and 95.2±9.98, 95.6±10.3, and 96.0±10.81 in the control group. Also, the mean scores of pre-test, post-test, and follow-up for academic hope were 26.73±3.65, 32.2±4.6, and 32.4±4.86 in the treatment group and 25.27±3.28, 25.78±2.97, and 26.53±2.97 in the control group.

Table 1) Mean scores of the academic optimism and hope in experimental and control groups

Variables	Phase	Experimental group	Control group
		Mean±SD	Mean±SD
Academic optimism	Pre-test	93.12±10.70	95.20±9.98
	Post-test	1.3.93±11.91	95.60±10.30
	Follow-up	102.67±11.42	96.00±10.81
Hope	Pre-test	26.73±3.65	25.27±3.28
	Post-test	32.20±4.60	25.87±2.97
	Follow-up	32.40±4.86	26.53±2.91

The Shapiro-Wilk test was used to examine the normality of the dependent variables and Levene's test to check the homogeneity of variances. Because the significance level of these statistics was greater than 0.05 in all dimensions, it can be concluded that these two assumptions were established.

In addition, the homogeneity of the slopes of the interaction regression line across the levels of the factors (treatment and control groups) between auxiliary (pre-tests) and dependent (post-tests) variables was not significant. Thus, the assumption of homogeneity of regression slopes was also met. The MANCOVA results for the post-test and follow-up scores are reported in Table 2.

Table 2) MANCOVA Results on the research variables in experimental and control groups ($\eta^2=0.95$; Power=1.00)

Variable	Value	df	Error df	F	p-value
Pillais Trace	0.96	4	21	115.68	0.001
Wilks Lambda	0.04	4	21	115.68	0.001
Hotelling's Trace	22.03	4	21	115.68	0.001
Roy's Largest Root	22.03	4	21	115.68	0.001

Table 2 shows a significant difference between the treatment and control groups in terms of the dependent variables.

As a result, the difference between the treatment and control groups was significant in at least one of the dependent variables of the research, i.e., academic optimism and academic hope. The one-way analysis

of covariance (ANCOVA) was performed to find these differences. As presented in Table 3, since the post-test and follow-up F-values for academic optimism were 117.24 and 54.94, respectively, it can be concluded that there was a significant difference between the treatment and control groups in academic optimism in both the post-test and follow-up stages. Because the post-test and follow-up F-values for academic hope were 66.39 and 35.18, respectively, it can be stated that there was also a significant difference between the treatment and control groups in this variable in both stages.

Table 3) One-way ANCOVA results on research variables in the experimental and control groups

Phase	Variable	SS	df	MS	F	p-Value	η²
Post-test	Academic optimism	728.16	1	728.16	117.24	0.001	0.83
	Hope	164.11	1	164.11	66.39	0.001	0.73
Follow-up	Academic optimism	513.63	1	513.63	54.94	0.001	0.69
	Hope	133.17	1	133.17	35.18	0.001	0.59

Discussion

This study aimed to investigate the role of stress management training in academic optimism and hope of university entrance exam applicants. CBSM training program significantly improved academic optimism and academic hope of the university entrance exam applicants. This finding is consistent with the results of previous studies [27]. CBSM training program combines various types of relaxation, diaphragmatic breathing, passive muscle relaxation, autogenic training of heart rate, breathing, abdomen, and forehead, visualization, and other anxiety reduction techniques with common cognitive-behavioral approaches, such as awareness of the effects of stress on health, cognitive restructuring, challenging automatic thoughts, effective coping strategies, self-assertiveness, and anger management [28]. Such interventions help the applicants to recognize the thoughts that cause anxiety and stress in them and change the false beliefs and logic that cause them anxiety and stress. This intervention included training and practicing body and muscle relaxation, which allows individuals to redirect their thoughts from worrying, stressful, and self-blaming topics to more neutral or even calming topics thereby reducing their stress level [29]. As a result, this intervention can effectively increase academic optimism and academic hope of individuals, which was confirmed by the findings of this study.

To explain the positive effect of stress management training on academic optimism of the university entrance exam applicants, it can be stated that stress management training fosters a positive attitude and outlook on life, lays the groundwork for optimism in people, and helps them return to their normal level of performance after experiencing difficult and stressful situations, such as the university entrance exams. Even after failures and difficulties, some of these people reported improved performance in comparison to the past [30]. In other words, they have more resistance to unavoidable injuries and stress, are more likely to find a positive meaning for their stress and problems, adapt flexibly to them, and as a result, have more control over life and upcoming challenges, such as university entrance exam, feel a greater sense of belonging to what they do and are more receptive to new ideas and changes [31]. Stress management training along with social support training and how to attract it can play an effective role in reducing people's stress. This method trains the applicants to view their thoughts and feelings as simple mental events that come and go, rather than as a part of themselves or a reflection of reality [32]. As a result, these preventive reactions assist them in quickly returning to a state of equilibrium in stressful situations, which can affect their academic optimism. Our results also demonstrated that stress management practices significantly improved academic optimism of the participants in the treatment group.

Our findings also confirmed the positive effects of stress management training on academic hope of the participants. Adolescents experience stressful situations during their studies, including the university entrance exam that results in major changes in their life. These stressful situations have negative and disappointing effect on their education. In such cases, students must be optimistic about their future so that they can overcome the challenges ahead and consciously change the way they plan, study, and live. Accordingly, stress management training programs can familiarize students with suitable strategies, empower them, help them to cope with their stress in such situations, and improve their academic hope. In addition, this skill reduces negative attitudes toward education by developing new attitudes toward it and toward the university entrance exam and via substituting their initial negative attitudes with positive ones. This reduction in negative attitudes increases academic hope of students. This was confirmed by the findings of this study as the CBSM training program significantly improved academic hope of students in the treatment group compared to the control group.

The stress management training program increased academic optimism and academic hope in the university entrance exam applicants and allowed them to maintain academic optimism and hope in stressful situations, such as the university entrance exam. It is suggested that education officials and authorities pay as much attention as possible to the positive effects of stress management training on

academic optimism and academic hope of students and organize educational workshops and effective counseling and intervention programs to improve these variables and ensure the academic success of students.

Because this study was conducted on the university entrance exam applicants in Ahvaz, Khuzestan Province, the findings should be cautiously generalized to students in other regions. In addition, considering the cross-sectional nature of this study, it is difficult to come to a general conclusion about the findings.

Conclusion

It can be generally concluded that training interventions based on stress management are appropriate methods to control the stress level of students and increase their academic optimism and academic hope. Students who use this method will be able to keep themselves calm in the face of stressful situations, improve their performance, accept and cope with problems, increase their academic optimism and academic hope, and, eventually, achieve educational success.

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