Effectiveness of a Cognitive-Behavioral Therapy Program on Reducing Psychological Stress and Improving Achievement Motivation among University Students

Odeh Suleiman Murad

Associate. Prof. of Educational Psychology, Al-Balqa Applied University - Al-Shoubak University College, Jordan

Received February 27, 2021; Revised March 29, 2021; Accepted May 11, 2021

Cite This Paper in the following Citation Styles

(a): [1] Odeh Suleiman Murad , "Effectiveness of a Cognitive-Behavioral Therapy Program on Reducing Psychological Stress and Improving Achievement Motivation among University Students," *Universal Journal of Educational Research*, Vol. 9, No. 6, pp. 1316-1322, 2021. DOI: 10.13189/ujer.2021.090621.

(b): Odeh Suleiman Murad (2021). *Effectiveness of a Cognitive-Behavioral Therapy Program on Reducing Psychological Stress and Improving Achievement Motivation among University Students*. *Universal Journal of Educational Research*, 9(6), 1316-1322. DOI: 10.13189/ujer.2021.090621.

Copyright©2021 by authors, all rights reserved. Authors agree that this article remains permanently open access under the terms of the Creative Commons Attribution License 4.0 International License

Abstract Psychological stress is a feature of human life. Some people feel more stressed than others. Therefore, the mental state of university students is one of the most important indicators that define the results or consequences of stress. A person has a certain ability to withstand stress. If she/he could not afford, new behavioral patterns emerge, resulting in further stress and problems. Thus, the student's failure to resolve problems causes ongoing emotional conflicts that affect energy and reduce achievement motivation. The present study aimed to identify the effectiveness of a cognitive-behavioral therapy program on reducing psychological stress and improve achievement motivation among university students. It adopted the quasi-experimental method and covered a sample of (50) students distributed randomly to an experimental group of (25) students and a control group of (25) students. Results revealed differences in the arithmetic means of the students' responses to the scales of psychological stress and achievement motivation in favor of the post-test and the experimental group. The study recommended adopting the cognitive-behavioral therapy program to reduce stress and improve achievement motivation of university students.

Keywords Cognitive-Behavioral Therapy Program, Psychological Stress, Achievement Motivation

1. Introduction

Individuals encounter psychological stress in various spheres of life due to the nature of the age of technology that is rich in daily diverse complexities in different degrees. Reference [1] reports that psychological stress results are from the stressful situation and response. The stressful situation only does not cause psychological stress. The response to them illustrates whether the person has psychological stress or not. Stress management does not necessarily mean eliminating them because positive or negative stress-free life is meaningless.

Psychological stress is a challenge and an obstacle to both individuals and communities. A person encounters many forms of psychological stress that cause social and economic problems. Moreover, stress is responsible for heart diseases, hypertension, lung diseases, and high rates of accidents that cause severe physical injuries.

Psychological stress refers to a general condition at all levels, ages, and cultures. It includes unpleasant emotions and negative thoughts causing disordered behaviors. The high rates of stress cause fatigue, tension, depression, panic, migraine, anxiety, and loss of appetite. It also causes serious health problems, e.g. cardiovascular diseases. However, some stress is required because it is healthy and useful. This positive stress improves performance,

promotes achievement motivation, and helps adaptation.

Psychological stress takes the form of overwhelming emotions accompanied by anxiety that affect people in different age groups, gender, and different circumstances, causing unpreferable implications physically and psychologically [2]. In general, it is a biological and psychological response to unfulfilled and uncontrolled things. That is, psychological stress is threatening stimuli, including examinations, divorce, death of a close person, change of residence, and job loss.

Although the concept of psychological stress is complex, it should be used accurately because of the inputs and complexity of modern life. In addition, the changing perception of the concept necessitates a change in the methods and strategies of stress management. Coping with psychological stress ineffectively, such as anger instead of problem-solving causes the physiological stimuli and increases stress.

To address psychological stress, authors utilize different skills and methods. While some of them decrease stress by confronting the stressful issue, others tackle the cognitive aspects related to the assessment of stress sources, evaluation of the available resources, or modification of the irrational beliefs [3]. The strategies of stress management differ according to the personality traits, the nature of the stressful situation, and the authors' perception of the effect of stress. The interest in studying the methods and strategies of stress management has decreased the negative effect of stress [4].

Reference [5] claims that individuals can acquire stress management by perceiving stressful situations, such as training on time management, prioritizing tasks, and seeking social support. Furthermore, they can manage stress through negative emotions, emotional expression, as well as behavioral strategies, such as relaxation, meditation, and exercise.

1.1. Symptoms of Psychological Stress

- 1) Physical symptoms: Psychological stress weakens physical immunity. Its physical symptoms include dry mouth and general fatigue, nervous shake, tachycardia, diarrhea/ constipation, frequent urination, gastrointestinal disorders, neck pain, and back pain [6].
- 2) Emotional symptoms: Reference [7] reports that stress exacerbates psychological disorders. Its symptoms include depression, anxiety, different appetite, sleep disorders, and lack of life enjoyment [8].
- 3) Cognitive symptoms: The person is preoccupied with the subject of psychological stress, which weakens the ability to concentrate at work.
- 4) Behavioral symptoms: The behavioral symptoms are manifested more than the emotional or cognitive ones. They comprise two groups. First, the direct symptoms are immediate repercussions of internal tension, e.g.,

irritability, mood swings, trouble improvising, quick fear, and stuttering. Second, the indirect symptoms reflect an increase of certain behaviors to reduce the stress that cause pain [8].

1.1.1. Sources of Psychological Stress

Reference [9] lists different sources of stress.

- Environmental stress: It is in the surrounding environment.
- Social stress: It includes family problems, social formations, difficult events, and difficulty of making friends.
- Economic stress: It represents the economic conditions, such as unemployment and poverty.
- Political stress: It results from the inability to adapt to the existing political situations.
- Occupational stress: It relates to work conflicts, stressful work rules, and dissatisfaction.
- Academic stress: It is the difficult interaction with classmates and teachers, low achievement, lack of concentration, inability to do homework, and failure in the achievement tests.

1.1.2. Psychological Stress and Achievement Motivation

Many studies, e.g. [10], investigated the relationship between psychological stress and achievement. Results revealed that higher psychological stress causes low achievement, depression, and low self-esteem. Furthermore, psychological stress results in tension and anxiety about the future and poses many obstacles to goals. Consequently, individuals feel depressed and pessimistic and have low achievement motivation.

Achievement motivation is an important aspect of human motivation systems. It is a distinctive feature of psychological research and academic achievement. That is, the achievement is one of the most important desires driving human behavior. She/he seeks to occupy a prominent position and a higher level. Furthermore, achievement motivation plays an important role in enhancing performance in various fields and activities. In other words, academic success is based on achievement.

Reference [11] defines achievement motivation as the desire for good performance and success achievement. It is a self-goal that guides behavior. It is one of the important components of academic achievement. According to [12], it is a set of feelings that motivate a learner to engage in learning activities and to achieve the desired goals. It is a basis for learning. It affects the individual's performance and productivity in various fields and activities, especially in education. It is the driving force of the student's behavior towards the higher achievement [13].

Reviewing the afore-mentioned literature shows that most of the studies tackled the effectiveness of training programs in helping students acquire the skills of coping with stressful situations, e.g., quarrel, exams, and anxiety using some relaxation skills, problem-solving, strategic

stress management, and mental cognitive strategies, such as [6,14]. Reference [3] aimed to examine the effectiveness of confrontation groups according to Rogers' theory with muscle relaxation exercise and biofeedback of physiological indicators (blood pressure and heart rate) on reducing stress and trait anxiety.

Reference [15] investigated whether coping strategies mediated relations between job stress, psychological stress, and burnout. Results indicated a positive correlation between job stress, psychological stress, and burnout among the participants. Reference [16] meta-analytically reviewed the efficacy of cognitive-behavioral therapy in the reduction of anxiety sensitivity. They concluded a strong efficacy of the training programs based on cognitive-behavioral therapy in reducing anxiety and psychological stress among the participants.

Therefore, the present study aimed to develop a cognitive-behavioral therapy program to reduce psychological stress and improve achievement motivation among students. Many studies, e.g. [17] reported a positive relationship between achievement motivation and academic achievement. The different degrees of achievement motivation lead to different degrees of academic achievement among students. The motivations related to the test situation trigger appropriate responses and may eventually result in high performance.

2. Statement of the Problem

The different definitions of psychological stress highlight its important impact on behavioral, cognitive, and psychological responses. Hence, methods that help individuals, in general, and students, in particular, in coping with and adapting to stress should be defined. University education is one of the stages that are affected by the former and affect the subsequent developmental stages. It is a stage of biological and psychological change that cultivates personality, self-concept, as well as emotional and intellectual development. Furthermore, it is a stage of social and cultural transformation.

University students are a really important national treasure as the leading force to progress and development. They need scientific, physical, and psychological care, as well as the cultivation of abilities. Moreover, joining the university provides new experiences, including university learning with its culture, registration, marking, and transportation. It results in financial matters, e.g., registration fees, textbooks, and pocket money. Such experiences and events cause stress that results in major psychological, health, and social problems. The present study aimed to develop a cognitive-behavioral therapy program to help university students cope with psychological stress and improve achievement motivation by providing them with a set of behavioral and cognitive methods and skills.

2.1. Hypotheses

1. There are no significant differences at $\alpha \leq 0.05$ in the level of psychological stress between the experimental and control groups due to the cognitive-behavioral therapy program.
2. There are no significant differences at $\alpha \leq 0.05$ in the level of achievement motivation between the experimental and control groups due to the cognitive-behavioral therapy program.

2.2. Significance

The study is significant because it addresses a society segment with much stress, i.e., university students who do not often have objective strategies to handle such stress. Therefore, it develops a therapy framework based on some behavioral and cognitive skills to decrease stress, tension, and anxiety and to enhance effective functioning, affecting positively their future.

2.3. Terminology

Psychological Stress: Reference [18] defines psychological stress as a state of emotional tension that arises from situations causing disorders of the physiological and biological functions and the inadequacy of the required cognitive functions.

Achievement Motivation: It is a set of internal and external conditions that urge the person to fulfill the needs and re-balance. It is a process or processes that trigger(s) the behavior towards the goal, as well as its maintenance, keeping, and stop at the end [19].

Cognitive-Behavioral Therapy Program (CBTP): It is a set of systematic actions and training based on therapeutic methods. In its theoretical framework, this program is based on behaviorism and cognitivism. That is, the individual's behavior is not mere reactions. Instead, it is a cognitive factor to be responsible for behaviors.

2.4. Limitations

The study was limited to intermediate diploma students at Ma'an University College in the second semester of the academic year 2018/2019. It was also limited to using scales (psychological stress, achievement motivation), and the cognitive behavioral therapy program that the researcher developed.

3. Method

The study adopted the quasi-experimental method and distributed the participants to two groups: an experimental group that received training in the therapy program and a control group that received no training.

Table 1. Distribution and characteristics of the participants

Group	Treatment	Academic Level			Gender		
		Total	Second Year	First Year	Total	Female	Male
Control	No Treatment	25	13	12	25	13	12
Experimental	Therapy Program (CBTP)	25	14	11	25	12	13
Total		50	27	23	50	25	25

3.1. Population and Sampling

The population of the study covered all the 250 students of the Engineering Program at Ma'an University College in the second semester of 2018/2019 who were willing to participate. The sample consisted of (50) students with the highest grades on the scale of psychological stress and the least grades on the scale of achievement motivation. They were distributed randomly to an experimental group of (25) students and a control group of (25) students.

3.2. Measurements

3.2.1. Psychological Stress Scale (PSS)

The study adopted the scale of psychological stress developed by [20], which consisted of (60) items distributed to (6) types of psychological stress on a three-point scale from "3=always", "2=sometimes", to "1=rarely". Its content and construct validity were verified by calculating the correlation coefficient of each item to the total score. The correlation coefficients ranged (0.35-0.75) and were statistically significant. Furthermore, reliability was verified using the test-retest method and internal consistency. Table (2) shows the reliability coefficients of the domains and total score.

Table 2. Reliability coefficients of the domains and total score

Stress	No. of items	Test-Retest Reliability	Internal consistency
Family	11	0.82	0.86
Financial	11	0.79	0.83
Academic	9	0.79	0.84
Personal	9	0.81	0.83
Social	10	0.84	0.86
University environment	10	0.83	0.87
Total score	60	0.86	0.91

3.2.2. Achievement Motivation Scale (AMS)

The author employed the scale of achievement motivation developed by [21]. It comprised (55) items distributed to five domains on a four-point from "4=always", "3=very often", "2=rarely", and "1=never". Its content validity was verified by calculating the correlation coefficients between each domain and the total score that were statistically significant, as shown in table (3).

Table 3. Correlation coefficients between the domains and the total score

Domain	Total score
Desire to success and excellence	0.79
Challenge	0.66
Commitment and taking responsibility	0.68
Curiosity	0.77
Independence and self-reliance	0.71
Total score	0.72

The reliability of the scale was verified by split-half. It was (0.89), which indicated that the scale is reliable and acceptable for the study.

3.2.3. Cognitive-Behavioral Therapy Program (CBTP)

After reviewing relevant literature and some theories that combined both behavioral and cognitive theory methods, such as the theory of cognitive modification of behavior by Donald Herbert Meickenbaum and other anthologies [3], the researcher built the therapy program, and it consisted of (14) sessions. The sessions included many topics (welcome and acquaintance, the concept of psychological stress, its sources, methods of treatment and reducing the stress, the concept of achievement motivation, the factors that help to improve it, daily homework's, relaxation, time management, problem-solving, skills that help reduce stress, Training in skills that increase motivation, daily session evaluation, and final program evaluation). It was reviewed by specialists and experts. It comprised (14) sessions for (50) minutes each, and (2) sessions per week.

3.3. Procedures

1. The program was applied collectively to the members of the experimental group after the researcher obtained official approvals and permissions for the application.
2. Develop and verify the reliability and validity of the scales, i.e., psychological stress and achievement motivation.
3. Test both scales to (250) students who were willing to participate. Select (50) students with the highest grades on the scale of psychological stress and the least grades on the scale of achievement motivation and distribute them randomly to an experimental

group of (25) students and a control group of (25) students.

4. Testing the therapy program to the members of the experimental group in two sessions weekly for seven weeks by the author.
5. Re-test both scales to the two groups after finishing the program by the author.

4. Results

4.1. Hypothesis I

There are no significant differences at $\alpha \leq 0.05$ in the level of psychological stress between the experimental and control groups due to the cognitive-behavioral therapy program.

Table 4. Means and standard deviations of the two study groups on PSS

Group	Treatment	Total	Pre-test		Post-test	
			Mean	Std	Mean	Std
Control	No Treatment	25	1.75	0.44	1.62	0.46
Experimental	Therapy Program (CBTP)	25	2.42	0.40	1.49	0.51

To verify the significance differences and the effectiveness of the therapy program, the researcher conducted an ANCOVA test to isolate the effect of the pre-test.

Table 5. Results of ANCOVA of the participants' scores on PSS

Source of variance	Total of squares	Freedom degrees	Means of squares	(F) value	Significance level
Therapy program	9.138	1	9.138	10.80	*0.000
Pre-test	126.02	1	126.02	148.68	0.061
Error	86.452	47	0.848		
Total	787.00	50			

Table (5) shows statistically significant differences at the level of ($\alpha \leq 0.05$) in the scale of psychological stress between the experimental and control groups due to the cognitive-behavioral therapy program, indicating a positive impact of the program in favor of the experimental group.

4.2. Hypothesis 2

There are no significant differences at $\alpha \leq 0.05$ in the level of achievement motivation between the experimental and control groups due to the cognitive-behavioral therapy program.

Table 6. Means and standard deviations of the two study groups on AMS

Group	Treatment	Total	Pret-est		Post-test	
			Mean	Std	Mean	Std
Control	No Treatment	25	1.62	0.57	1.82	0.46
Experimental	Therapy Program (CBTP)	25	1.61	0.56	2.48	0.42

To verify the significance differences and the effectiveness of the therapy program, the researcher conducted an ANCOVA test to isolate the effect of the pre-test.

Table 7. Results of ANCOVA of the participants' scores on AMS

Source of variance	Total of squares	Freedom degrees	Means of squares	(F) value	Significance level
Therapy program	138.60	1	138.60	71.61	*0.000
Pre-test	22.271	1	22.271	11.50	0.050
Error	197.482	47	1.936		
Total	5883.00	50			

Table (7) illustrates statistically significant differences at the level of ($\alpha \leq 0.05$) in the scale of achievement motivation between the experimental and control groups due to the cognitive-behavioral therapy program, indicating the reduction of psychological stress and improvement of achievement motivation among the experimental group.

5. Discussion

5.1. Discussion of the First Hypothesis' Results

Results revealed that the cognitive-behavioral therapy program (CBTP) helped reduce psychological stress among university students. It made a significant difference in the dependent variable of reducing the level of psychological stress because of the effect of the sessions, containing guidance and effective methods for the experimental group to equip them with skills of coping with stressful situations. The perception of the event affected feelings and behaviors. In addition, the program was based on homework, applied skills, training in solving problems by handling them objectively.

The sessions allowed the participants to have emotional discharge, replacing the irrational with rational beliefs, deep understanding of them, self-control, and self-monitoring. They were also trained in stress inoculation, which increased their ability to cope with stress. Therefore, the therapy program worked as an outlet for the trainees to expose the problems and obstacles they encounter in their academic and personal lives.

The result of this study matches the results of some studies. The study tackled the effectiveness of training and therapy programs in helping students acquire the skills of coping with stressful situations, reducing the severity of psychological stress. It is shown that physiological indicators associated with psychological stress, such as [3,10,14] have been reduced.

5.2. Discussion of the Second Hypothesis' Results

Results revealed that the therapy program (CBTP) improved achievement motivation among university students because identifying the sources of psychological stress and failure of the skills of handling difficulties can help reduce achievement motivation. The ongoing or chronic stress may be a source for many problems that exacerbate stress, weaken resistance ability, and cause tension, fatigue, insomnia, and lack of problem-solving. The problems and difficulties may be daily, such as waiting for a long time, traffic, family burdens, academic burdens, as well as social and economic stress. In other words, the difficulties that students face in daily life may affect mental health decisively, cause psychological stress, and weaken achievement motivation.

This result matches the results of some studies, e.g. [10] which revealed that higher psychological stress causes low achievement, depression, and low self-esteem. And [22] study, whose results indicated the effectiveness of the program used in the study to improve achievement motivation among the experimental group members.

In conclusion, the maturation of the participants, the period of CBTP that lasted 14 sessions, and the cognitive and behavioral skills that the program contained, and multiple activities allowed them to reduce psychological stress and thus increase their achievement motivation.

6. Recommendations

1. Conduct further studies on university students to identify the sources, handling, and reduction of psychological stress and the factors affecting achievement motivation and improvement.
2. Hold training courses and deliver lectures to university students on coping with psychological stress and identifying its sources.
3. Provide the heads of counseling programs at universities with the developed therapy program to surpass administrative counseling to clinical therapy counseling.

REFERENCES

[1] Alqatnany, A. "Psychological needs, self-concept, and

relationship to the level of ambition among the students of Al-Azhar University-Gaza based on self-determination theory "[Unpublished master's thesis]. 2011, Al-Azhar University-Gaza.

- [2] Sinha, R. "Chronic stress, drug use and vulnerability to addiction". *Annals of the New York Academy of Science*, 1141, 105-130, 2008. doi: 10.1196/annals.1441.030.
- [3] Alasemy, R. "Effectiveness of a counseling program based on client-centered counseling and biofeedback on reducing stress and trait anxiety and improving self-concept among teachers". *Damascus University Journal for Educational & Psychological Sciences*, 27(1-2), 219-281, 2011.
- [4] Hussein, T., & Salama, A. "Strategies of educational and psychological stress management". Amman, 2006.
- [5] Malham, S. "Abnormal psychology". Amman, 2003.
- [6] Alkhawaldeh, S., & Alkhawaldeh, A. "Effectiveness of a therapy program in reducing psychological stress and improving self-concept among the students of Philadelphia University". *Journal of Educational & Psychological Studies- Sultan Qaboos University*, 11(3), 642-658, 2018.
- [7] Woolfolk, A. "Educational psychology". Massachusetts, 2001.
- [8] Karve, S., & Nair, S. "Role stress and coping with role stress among Indian women executives". *Indian Journal of Arts and Science*, 3(12), 57-85, 2010. ISSN: 1944-6934.
- [9] Ar-Rashidi, H. "Psychological stress- theories- a therapy program". Cairo, 1999.
- [10] Alasemy, R., & Badria, A. "Psychological stress and relationship to achievement motivation among the students of the Faculty of Education". *Damascus University. Tishreen University Journal for Research and Scientific Studies*, 39(4), 885-901, 2017.
- [11] Khalifa, A. "Achievement motivation". Cairo: Dar Ghareeb for Publishing and Distribution. 2000.
- [12] Pranuneheer, P. "Principles of effective teaching". Cairo, 2000.
- [13] Alhamid, M. "Academic achievement motivation". Riyadh, 2003.
- [14] Hall, A., & Torres, I. "Partnerships in preventing adolescent stress: Increasing self-esteem, coping, and support through effective counseling". *Journal of Mental Health Counseling*, 24(2), 97-109, 2002.
- [15] Wallace, S., Lee, J., & Lee, S. "Job stress, coping strategies, and burnout among abuse-specific counselors". *Journal of Employment Counseling*, 47, 11-122, 2010. doi:10.1002/j.2161-1920.2010.tb00096.x.
- [16] Jasper, J., Angela, C., Candyee, D., & Mark, B. "The efficacy of cognitive-behavioral interventions for reducing anxiety sensitivity: a meta-analytic review". *Behavior Research and Therapy*, 46(9), 1047-1054, 2008. doi: 10.1016/j.brat.2008.06.010.
- [17] Singh, K., Granville, M., & Dika, S. "Mathematics and science achievement: Effects of motivation, interest, and academic engagement". *Journal of Educational Research*, 95(6), 323-332, 2002. <https://doi.org/10.1080/00220670209>

596607.

- [18] Lazarus, R. "Psychological stress and emotion: A history of changing outlooks". New York, 2003.
- [19] Ar-Rimawi, M. (2004). *General psychology*. Amman.
- [20] Dokhan, N., & Alhajjar, B. "Psychological stress and relationship to psychological resilience among the students of the Islamic University". *Journal of the Islamic University*, 14(2), 369-398, 2006.
- [21] Al-Azmi, M. "Standardization of the measure of achievement motivation for adults". *World of Education*, 14(43), 333-351, 2013.
- [22] Abas, S., & Osman, A. "The effectiveness of a counseling program to improve a achievement motivation among less academic achieved female students in Girls faculty of education in Zulfī". *Arab Studies in Education and Psychology*, 37, 415-452, 2017.