Original Article: Evaluation of the Effectiveness of Anxiety and Stress Management in Reducing Anxiety and Stress of Conditioned Students

Adnan Sayahi[1]*, Farzaneh Shiralinejad[2], Maryam Beit Sayah[3]

[1]*Department of Psychology, Shahid Bahonar university, Kerman, Iran*
[2]*Department of Phycology, Central Tehran Branch, Islamic Azad University, Tehran, Iran*
[3]*Department of Psychology, Payam Noor University, Ahvaz, Iran*

Use yor device to scan and read the article online

Citation xxx. **Evaluation of the Effectiveness of Anxiety and Stress Management in Reducing Anxiety and Stress of Conditioned Students. Int. J. Adv. Stu. Hum. Soc. Sci. 2021**, 10(4):221-229.

https://doi.org/10.22034/ijashss.2021.289337.1057

Article info:
Received: 05 May 2021
Accepted: 26 June 2021
Available Online: 29 June 2021
Checked for Plagiarism: Yes
Language Editor:
Dr. Behrouz Jamalvandi
Editor who Approved Publication:
Professor Dr. Ahmad Alipour
Keywords:
Meta Worry, Anxiety, Anxiety And Stress Management

ABSTRACT

The purpose of this study was to evaluate the effectiveness of training anxiety and stress management skills (cognitive-behavioral) in the reduction of anxiety and anger in conditional students. The statistical population included all of the conditioned university students. The sample consisted of 30 probation students, 15 experimental group and 15 control group who were selected by available sampling method. The instruments used in this research included Beck Anxiety Inventory (BAI) 1990 with validity and validity of 0.92, 0.75 and Welsh's Interrogations Questionnaire (MWQ) 1997 with validity and validity of 0.88, 0.79. For the experimental intervention (stress management skills training), the training package Saramak Immar (2001) was used for 8 sessions of 90 minutes. Data were analyzed using descriptive methods and inferential statistics methods including covariance analysis (MANCOVA), which was performed using SPSS-21 software. Anxiety and stress management (cognitive-behavioral) skills training was significantly related to the reduction of anxiety and anesthesia in conditioned students.

Introduction

Stress is an integral part of our lives today, and people must constantly adopt new coping strategies to deal with it. Economic needs, family conflicts, the responsibilities of men and women in the home and workplace, environmental pollution, and everyday conflicts have all increased stress; It is estimated that 80 to 90% of diseases are caused by stress. Failure in education is considered as an aggravating factor and less likely to cause stress, which include various criteria such as conditional, repetition of the course, prolongation of study, dismissal, dropout, dropout, etc [1-4]. Students are the assets of every country and one of the problems that students face in the field of education is stress and anxiety that arise from various internal and external factors that reduce the student's performance in his field of study. Anxiety is defined as the anticipation and anticipation of unpleasant events in the future. Anxiety is seen in both healthy and unhealthy

***Corresponding Author:** *Adnan* Sayahi (a.sayahee92@gmail.com)

people. Anxiety varies from person to person more quantitatively and intensely than qualitatively. Knowing uncontrollable anxiety and its pervasiveness and disrupting a person's daily functioning and the presence of anxiety, which is a problematic component in metacognition and repetitive negative thoughts, is one of the important features of many psychological problems [5-7].

When normal anxiety becomes a pathological concern, anxiety arises, for example, beliefs such as that my anxiety is incurable and preventable, or that my anxiety may have catastrophic physical and psychological consequences. As Ratos (2007) points out, a wealth of psychological research is concerned with the ways in which mental and behavioral processes can help individuals cope with stress. Methods such as controlling irrational thoughts, reducing arousal and reducing internal alertness along with exercise and methods based on problem-solving skills can increase self-esteem and reduce anxiety. Relaxation during exams can also increase the function of the immune system [8-10].

Stressors have an adverse effect on students' general health, and by increasing stressors, physical symptoms, anxiety, social dysfunction and depression increase and general health decreases. Behavioral relaxation or muscle relaxation training has also been shown to reduce students' anxiety as well as mental health and problem-solving coping skills. Stress significantly reduces people's scores on depression, general illness anxiety and social dysfunction [11-14].

Since entering university is a critical period in the lives of young people in countries, student time is associated with increased stress. The aim of this study was to determine the effectiveness of anxiety and stress management skills training (cognitive-behavioral) on reducing anxiety and anxiety of conditioned students [15].

One of the problems that students face in the field of education is the problems of stress and anxiety that originate from psychological and external factors that cause students to suffer from anxiety and worry in the coming semesters and cause a decrease in student performance in his field of study is.

Stress and anxiety are an undeniable reality and a factor in the evolution of human life; if the changes and developments caused by stress and anxiety are mild and limited, it is useful and constructive and plays a significant role in human adaptation. But when changes go beyond the process and for a long time, they may be difficult to tolerate and the capacity for human adaptation may be exhausted. For this reason, over the past two or three decades, researchers have shown great interest in research into how people deal with stress and anxiety.

These researchers have given a special name to the methods that humans choose to deal with stressful and anxious situations in each perspective: Domination, defense, management skills, realism in problem solving, etc., which in the concept, have a lot in common [16-18]. Today, stress, anxiety and depression are an integral part of our lives and people must constantly adopt new coping methods to deal with them [19].

Predicting and anticipating unpleasant events in the future should be defined. If a person's anxiety is severe and a person is involved in it for a long time, it is harmful for him and will play an important role in causing mental illness and mental disorders.

Anxiety disorder is one of the most common disorders, consisting of two independent components of physical arousal or physical anxiety. Most of the emotional aspects and physical symptoms such as sweating, flushing, increased heart rate and the like. The component of anxiety or cognitive anxiety in which the cognitive aspects of the physical aspects prevail that the evaluation of anxiety symptoms is very important in the diagnosis and treatment.

Knowing that uncontrollable anxiety and its pervasiveness and disrupting a person's daily functioning and the presence of anxiety (worry about anxiety) is one of the problematic components in metacognition. Repetitive negative thoughts are one of the important features of many mental problems.

Depression is closely related to mental rumination and anxiety is related to anxiety. Concern is important not only as a symptom of anxiety, but also as a motivational and active style for evaluating and coping with failure. Concern seems to exacerbate anxiety, but because the person needs to worry and imagines a kind of confrontation, it does not break the chain of concern [20].

In universities, if students do not take the necessary measures to control stress, it will cause students to drop out of school. Academic decline means failure in education, which can be examined by various criteria such as conditional, repetition of the course, extension of study, expulsion, cancellation, dropout, etc [21-24].

Certainly, a set of factors of interest in the field of study, study skills, learning style, cognitive and metacognitive skills, personality traits, field of study, marital status, economic poverty, family problems and employment while studying and on conditional students influence the study of these factors and the role of each in the condition of students in the design and implementation of intervention planning to prevent condition and dropout of students and facilitate the creation of educational conditions for students to succeed in acquiring scientific and specialized skills to achieve the mission of the university.

Therefore, the study of conditional causes and lack of academic achievement of students and the role of each factor in the occurrence of this problem is very important to prevent it, considered an important issue in the higher education system, and neglecting it in the long run reduces the quality of education of students and irreparable losses in the country.

It seems that cognitive-behavioral anxiety and stress management training can be useful in reducing anxiety, depression, and increasing ways of coping with stress, and as a way to better control the disease, reduce and prevent problems and complications, physically and psychosocially. Coping models include the coping models of Moses and Billings, the model of Lazarus and Folkman, and the training model of Saramak Namara.

Anxiety and stress management refers to a set of techniques and methods that are used to reduce anxiety and stress experienced by people or increase their ability to deal with anxiety and stress in life. This method is known to be effective for many psychological disorders such as anxiety and depression, psychosomatic diseases and even diseases such as cancer [25].

Because behavioral and cognitive techniques are taught to the patient simultaneously, behavioral techniques such as muscle relaxation training that enhances the activity of the parasympathetic system and cognitive techniques help the patient to identify negative and irrational thoughts and replace them with positive logical thoughts and hopeful mental schemas. These techniques witness some behavioral techniques, such as coping skills training, discovering negative thoughts, and cognitive reconstruction.

In this regard, Soltani (2004) in a study entitled "Evaluation of the effectiveness of stress management skills training on reducing negative attribution style and increasing students 'mental health", has stated that stress management skills training reduces negative documentation and increases students' mental health. The results reported by Kaviani et al. (2006) and Poor Kazem *et al*., (2007) demonstrate the effectiveness of education in reducing stress symptoms. In Sudanese research (2008) on the effectiveness of stress management skills training on increasing students' mental health, it has been shown that training stress management skills increases mental health and reduces anxiety and depression in students [26].

Also, Saki *et al*. (2013) showed that students who receive the coping skills necessary to control anxiety and stress, have the ability to control their anxious and worrying thoughts. As a result, stress, anxiety, and anxiety are steadily declining. Glaser et al. (1985, 1986, 1984) showed that relaxation during exams can increase immune system function. Lou (1994) has shown that stressors have an adverse effect on students' general health, and with increasing stressors, physical symptoms, anxiety, social dysfunction and depression increase, and general health decreases. Garner et al. (1985) showed that relaxing during exams can boost immune system function. Lou (1994) has shown that stressors have an adverse effect on students' general health and increase and decrease public health with increasing stressors such as physical symptoms, anxiety, social dysfunction and depression [27].

Halamandariz and Power (1999) also showed that training in behavioral relaxation or relaxation reduces muscle and student anxiety. Timern et al. (1998) examined the effects of a management training program on stress. The results of their research showed that this training can reduce stress, anxiety and bring more courage and satisfaction.

Mizuno *et al*. (1999) showed that mental health and problem-oriented coping style have a

significant relationship and stress management training significantly reduces people's scores on depression and anxiety. In a study examining the effectiveness of stress management training on students' academic achievement and mental health, Kogg *et al*. (2005) showed that stress management training increases both academic performance and students' mental health. Accordingly, the main question of the research is whether the training of anxiety management skills and cognitive-behavioral stress is effective in reducing anxiety and distress of conditional students [27-30].

Research Instruments

Beck Anxiety Inventory (BAI)

Evaluation of anxiety symptoms is of particular importance in diagnosis as well as treatment. Although many scales have emerged so far, depending on different perspectives, an examination of these scales suggests that there may be problems in theoretical conceptualization and their methodological features. Given these problems, in 1990 Aaron Beck and colleagues introduced the BAI scale, which specifically measures the severity of clinical anxiety symptoms in individuals [31-33].

They presented normative and psychometric findings of this scale in two studies. The BAI is designed to measure anxiety and consists of 21 terms, with four options to choose from. Each expression of reflection is one of the symptoms of anxiety that is usually experienced by people who are clinically anxious or who are in a state of anxiety [34-36].

The questionnaire is a 21-item scale in which the subject selects one of four options that indicate the severity of his anxiety. Four Options Each question is scored in a four-part range from zero to three. Each test item describes one of the most common symptoms of anxiety, mental, physical, and panic.

Therefore, the total score of this questionnaire is in the range from zero to 63. Studies show that this questionnaire has high validity and reliability. Its internal consistency coefficient (alpha coefficient) is 0.92. Its validity varies from 0.30 to 0.76 with a one-week interval test method and the correlation of its substances varies from 0.30 to 0.76. Five types of content validity, simultaneous, structural, diagnostic and complete, have been measured for this test, all of which indicate the high efficiency of this tool in measuring the severity of anxiety [37].

Some researches in Iran have been done on the psychometric properties of this test, for example, Gharaei (1993) has reported its validity coefficient by retest method and 0.80 at two weeks interval. Also, Kaviani and Mousavi (2008) in the study of psychometric properties of this test in the Iranian population have reported a validity coefficient of about 0.72 and a validity coefficient of one-month test-retest 0.83 and Cronbach's alpha of 0.92 [38].

In other studies, abroad to evaluate the appropriateness of BAI software, the results indicate that Beck anxiety measurement tool can very well explain the anxiety of the subjects, but due to the nature of this questionnaire, the bit of anxiety and depression did not make much difference [39-41].

In other studies, to examine the factor structure of this questionnaire, two, four and five factors have been introduced for this tool. The reliability of this instrument from 0.80. to 0.92 has been reported.

Welsh Wellness Questionnaire (MWQ)

The questionnaire was developed by Wells in 1997 and consists of a 30-item self-report scale that measures individuals' beliefs about their thoughts. The answers to the questions are calculated in the form of a four-point Likert scale. This scale has five subscales including: Positive anxiety beliefs; uncontrollable beliefs; cognitive competences; general negative beliefs, and cognitive self-awareness. The score of each factor is obtained through the sum of its related items [42-45].

The items of this questionnaire were obtained from interviews with patients with generalized anxiety disorder and panic disorder. Other items were taken from Beck Depression Inventory, Madzley Obsessive-Compulsive Questionnaire and Adjective Anxiety Inventory. The results of factor analysis showed that this tool consists of three factors: Social concern, health concern, and transcendence [46-48].

The first two factors are purely cognitive in nature, but the transcendental factor includes substances that measure the metacognitive aspects of assessing self-concern or "concern about anxiety or type II anxiety"; for example, I worry that my thoughts will not be able to be controlled as I wish).

Studies using the Frangrani questionnaire on the metacognitive model of anxiety disorders implicitly confirm the convergent validity and differentiation of this instrument. For example, Wells and Carter (1999) found that type II anxiety predicted pathological anxiety more effectively than type I anxiety and trait anxiety [49].

Also, Welzo Carter (2001) reported that the transgression factor effectively scored significantly higher in patients with disseminated anxiety disorder than in those with social phobia in the health concern factor. In addition, people with generalized anxiety disorder scored significantly higher than normal people and people with panic disorder in the social anxiety factor. Wells, Papagio, and Giorgio (1998) also found that the Frangrani questionnaire factor was positively correlated with the Pennsylvania questionnaire. Recent studies have also confirmed the sensitivity of the Frangrani questionnaire to the effect of treatment in patients with generalized anxiety disorder [50].

Shirinzadeh (2019) has translated and prepared this questionnaire for the Iranian population. The Cronbach's alpha coefficient of the whole scale in the Iranian sample is reported to be 0.91 and for the subscales of uncontrollability, positive beliefs, cognitive self-awareness, cognitive, and the need to control negative thoughts in the Iranian sample 0.87, 0.86, 0.81, 80, 0.0 and 0.71 have been reported. Internal consistency of social anxiety, health anxiety, and transgression factors were reported to be 0.84, 0.81, and 0.75, respectively, and the reliability was 0.76 for social anxiety factor, 0.84 for health anxiety, and 0.81 for transcendental factor [51-53].

Convergence validity of Frangrani questionnaire was evaluated by its correlation method with BAI, BD-II and GHQ-28.

All three factors of health anxiety, social anxiety and transcendence have a positive and significant relationship with BAI, BDI-II scores as well as general health subscales. In addition, the internal consistency of extraneous factors, social anxiety, health anxiety was 0.81, 0.85 and 0.74, respectively [54]

Cronbach's alpha coefficient of the whole questionnaire was 0.91 and the reliability coefficient of the scale was 0.92 by retest method and 0.89 by half method. The reliability coefficient of the test sub-scales of transgression, social anxiety and health anxiety were 0.77, 0.82 and 0.75, respectively [55].

The internal consistency coefficient of this scale in the study of Hamidpour et al. (2010) was reported by 0.78. In the study of structural validity, which was done using factor analysis, they confirmed its reliability with Cronbach's alpha for our total and subscales between 76% to 93%, as well as the validity and validity of this questionnaire by two psychologists. Clinically, a psychiatrist was examined and in order to measure internal consistency, a coefficient of 79% was obtained through the bisection method and through the Cronbach's alpha method.

Also, a validity metacognition questionnaire was administered to 52 people and its reliability coefficient was r = 0.88. (Yousefi et al., 2006). In this study, the internal consistency coefficient of 0.81 was obtained.

Results

In this section, the mean, standard deviation, maximum and minimum scores of the subjects in the anxiety and depression scores are presented.

Table 1. Mean, standard deviation shows the highest and lowest anxiety scores in the experimental and control groups in the pre-test and post-test

At Least	The Most	Standard Deviation	Average	Number	Statistical Indicators	The Level
26	0	45.8	26.9	15	pre-exam	**Control**
23	0	88.7	33.9	15	Post-test	
27	21	711.	66.24	15	pre-exam	**The**
31	0	09.10	33.10	15	Post-test	**Experiment**

As Table 1 shows, in the control group, the mean anxiety scores in the pre-test stage were 9.26 and in the post-test stage 9.33. Also, in the experimental group, the mean scores of anxieties in the pre-test stage were 24.66 and in the post-test stage 10.33.

Table 2 shows the mean, standard deviation, maximum and lowest scores in the experimental and control groups in the pre-test and post-test.

Table 2. The mean, standard deviation, maximum and lowest scores in the experimental and control groups in the pre-test and post-test

The Significance Level	Degree of Freedom 2	Degree of Freedom 1	F	The Dependent Variable	Effect
091.0	34	1	01.2	Anxiety	Group
299.0	34	1	11.1	Frangarani	

As Table 2 shows, in the control group, the mean of Frangrani scores in the pre-test stage was 71.93 and in the post-test stage 71.40. Also, in the experimental group, the mean scores of Frangrani in the pre-test stage was 90.93 and in the post-test stage 72.86. Homogeneity of variances Levin test was used to evaluate the homogeneity of variance of variables. The results of homogeneity of variances are shown in Table 3 below.

The results in Table 3 show that Levin test is not significant in the variables of anxiety (F = 2.01 and P = 0.109) and transgression (F = 1.11 and P = 0.299).

Therefore, the variance of the experimental and control groups in anxiety and anxiety are not significantly different and the assumption of homogeneity of variance is confirmed. Results of ANCOVA analysis in MANCOVA text on the mean scores of post-test anxiety and anxiety of experimental and control groups are presented in Table 4 below.

Table 3. Results of ANCOVA analysis in MANCOVA text on the mean scores of post-test anxiety and anxiety of experimental and control groups

The Significance Level	F	Average Squares	Degrees of Freedom	Total Squares	Title of Exam
011.0	77.7	47.431	1	47.431	Anxiety
009.0	09.8	15.608	1	15.608	Frangarani

According to Table 3, it can be seen that the difference between the experimental and control groups in the post-test is significant in terms of anxiety variable at the level of p <0.05. Based on this, it can be stated that hypothesis 1 of the research is confirmed.

Also, in Table 3, it can be seen that the difference between the experimental group and the control group is significant in terms of variability at the level of P = 0.01. As a result, hypothesis 2 of the study is confirmed.

Discussion and conclusion

Hypothesis 1. Training in anxiety and stress management skills (cognitive-behavioral) has a significant effect on reducing conditional students' anxiety. Based on the results reported, this hypothesis is confirmed. The results of Kicklett *et al*. (1985) are consistent with the results of the present study, which showed that relaxation during exams can increase immune function. As a result, it is expected that there is a significant inverse relationship between anxiety scores and test scores (Sar Golzaei *et al*., 2003).

It is undeniable that increased anxiety is associated with decreased academic performance (Covington, 1985). Crasson and Mandler (2018) believed that in the test situation, test-related information and learned anxiety states entered the field at the same time. Some anxiety states are related to the test and others are unrelated to it. If the aroused anxiety is related to the test content, the level of efficiency increases and the unrelated

anxiety states assigned reduce the level of efficiency.

Also, students with high academic performance had lower cognitive homework performance on exam anxiety than other students. The prevalence of test anxiety in subjects with a conditional history (18.4%) is higher than the prevalence of test anxiety in subjects with no condition (17.2) (Abolghasemi, 2003). Exam anxiety is largely related to negative thoughts and pessimistic assessments of the exam and may change students' credentials as well as alter their subsequent self-concept and negative behavior.

There is a positive negative relationship. There is also a negative relationship between test anxiety and high school students' self-concept. Exam anxiety is due to inadequate study habits. However, people with high test anxiety report difficulty concentrating and actually have little study in the final stages close to the test.

Numerous studies have been conducted to investigate the relationship between test anxiety and general anxiety, the results of which indicate a positive relationship between test anxiety and general anxiety. Among these inquiries, we can mention Cal, Joe and Beer (2018), in which a significant positive relationship was found between test anxiety and general anxiety.

Hypothesis 2: Teaching anxiety and stress management skills (cognitive-behavioral) has a significant effect on reducing transgression in conditional students. Based on the results reported, this hypothesis was confirmed. These results are in line with those of other studies including Wells (2005), Romero Waversier (2003), Ambramotis *et al*. (2003), Damascus (2003), Simon (2006), and Lazarus and Folkman (1984). Mousavi (1993), Sudani et al. (2008) agree that the effect of cognitive-behavioral stress management training on reducing anxiety and anxiety has been confirmed.

In explaining this hypothesis, it can be said that in addition to the effect of anxiety on its emergence and shape, new research evidence suggests that anxiety can lead to other mental disorders such as obsessive-compulsive disorder, post-traumatic stress disorder and depression, and anxiety.

Concerns can also include beliefs about the negative effects of anxiety, for example, beliefs such as that my anxiety is incurable and preventable, or that my anxiety may have catastrophic physical and psychological consequences.

Explaining the mechanism of action of Frangrani, Wells (2005) believes that Frangrani is of special importance not only as a symptom of anxiety, but also as a motivational and active style for evaluating and coping with failure, and it seems that Frangrani causes anxiety to get intensified, but because one sees the need to worry as a form of coping, one does not break the chain of anxiety.

References

[1] A. Wells, *Clinical Psychology and Psychotherapy*, **2002**, *6*, 86-95. **[crossref], [Google Scholar], [Publisher]**
[2] A. Wells. *Anxiety Stress and Coping*, **2009**, *6*, 289-299. **[crossref], [Google Scholar], [Publisher]**
[3] A. Wells, Cognitive therapy Research, **2005**, *22*, 107–21. **[Google Scholar], [Publisher]**
[4] A. Wells, K. Carter, *Behavior Therapy*, **2001**, *32*(1), 85-102. **[crossref], [Google Scholar], [Publisher]**
[5] T.A. Brown, *The Canadian Journal of Psychiatry*, **1997**, 817-825. **[crossref], [Google Scholar], [Publisher]**
[6] G.M. Ruggiero, L. Stapinski, G. Caselli, F. Fiore, M. Gallucci, S. Sassaroli, R.M. Rapee, *Personality and Individual Differences*, **2012**, *53*, 224-230. **[crossref], [Google Scholar], [Publisher]**
[7] L. Roemer, S.M. Orsillo, *Clinical Psychology, Science and Practice*, **2003**, *10*, 172-178. **[crossref], [Google Scholar], [Publisher]**
[8] J.S. Abramowitz, S. Whiteside, S.A. Kalsy, D.F. Tolin, *Behavior Research and Therapy*, **2003**, *41*, 529–540. **[crossref], [Google Scholar], [Publisher]**
[9] N. Amir, L. Cashman, E.B. Foa, *Behavior Research and Therapy*, **1997**, *35*, 775–777. **[crossref], [Google Scholar], [Publisher]**
[10] G. Warda, R.A. Bryant, *Behaviour Research and Therapy*, **1998**, *36*, 1177–1183. **[crossref], [Google Scholar], [Publisher]**
[11] P.K. Macinejewski, H.G. Prigerson, C.M. Mazure, *B. J. Psych*, **2000**, *176*, 373-378. **[crossref], [Google Scholar], [Publisher]**
[12] L. Lu, psychological medicin, 1994, 24, 81-7. **[PDF Download], [Google Scholar],**

[13] J.R. Godfrey, *Journal of Women's Health*, **2004**, *13*(5), 474-479. **[crossref], [Google Scholar], [Publisher]**
[14] G.H. Timmerman, P.M.C. Emmekamp, R. Sanderman, *Behaviour Research and Therapy*, 1998, 36, 863-875. **[crossref], [Google Scholar], [Publisher]**
[15] J.D. Hovey, *Cultural Diversity and Ethnic Minority Psychology*, **2000**, *6*(2), 134-151. **[crossref], [Google Scholar], [Publisher]**
[16] J.K. Kiecolt-Glaser, W. Garner, C.E. Speicher, G.M. Penn, J.E. Holiday, R. Glaser, *Health Psychology*, **1985**, *4*, 25-41. **[crossref], [Google Scholar], [Publisher]**
[17] J.K. Kiecolt- Glaser, R. Glaser, E.C. Strain, J.C. Stout, K.L. Tarr, J.E. Holiday, C.E. Speicher, *J Behav Med*, **1986**, *9*, 5-21. **[crossref], [Google Scholar], [Publisher]**
[18] J.K. Kiecolt- Glaser, C.E. Speicher, J.E. Holiday, R. Glaser, *J Behav Med*, **1984**, *7*, 1-12. **[crossref], [Google Scholar], [Publisher]**
[19] C.L. White, K. Kashima, G.A. Bray, D.A. York, *Physiology Behavior*, **2000**, *68*(5), 715-722. **[crossref], [Google Scholar], [Publisher]**
[20] K.L. Harkness, J. Luther, *Journal of Abnormal Psychology*, **2001**, *110*(4), 564- 572. **[crossref], [Google Scholar], [Publisher]**
[21] K.F. Halamandaris, K.G. Power, *Personality and Individual Differences*, **1999**, *26*, 665-685. **[crossref], [Google Scholar], [Publisher]**
[22] E. Tovar, M.A. Simon, *Community College Journal of Research & Practice*, **2006**, *30*(7), 547-564. **[crossref], [Google Scholar], [Publisher]**
[23] S. Sangy, F. Miryousefiata, A. Bahaoddini, H. Dimiati, *Budapest International Research in Exact Sciences (BirEx) Journal,* **2020,** *2(4),* 458-466. **[crossref], [Google Scholar], [Publisher]**
[24] F. Miryousefiata, S Sangy, *Journal of Medicinal and Chemical Sciences,* **2021**, *4*, 60-74. **[crossref], [Google Scholar], [Publisher]**
[25] H.R.A. Otaghvar, M. Hoseini, A. Mirmalek, H. Ahmari, F. Arab, N. Amiri Mohtasham, *Iranian Journal of Surgery*, **2014**, *22*, 1-11. **[crossref], [Google Scholar], [Publisher]**
[26] M. Zargar, H.R.A. Otaghvar, A. Danaei, M. Babaei, *Razi Journal of Medicinal Science*, **2017**, *24*, 88-98. **[crossref], [Google Scholar], [Publisher]**
[27] P. Atef Vahid, M. Hosseini, H.R.A. Otaghvar, A. Tizmaghz, G. Shabestanipour, *J. Clin. Diagn. Res.*, **2016**, *10*, PC19–PC22. **[crossref], [Google Scholar], [Publisher]**
[28] H.R.A. Otaghvar, M. Hosseini, G. Shabestanipour, A. Tizmaghz, G. Sedehi Esfahani, *Case reports in surgery*, **2014**. **[crossref], [Google Scholar], [Publisher]**
[29] M. Rohani, H.R.B. Baradaran, A. Sanagoo, M. Sarani, S. Yazdani, H.R. Alizadeh, *Razi journal of medical sciences*, **2016**, *23*, 115-124. **[crossref], [Google Scholar], [Publisher]**
[30] M. Hosseini, H.R.A. Otaghvar, A. Tizmaghz, G. Shabestanipour, S. Arvaneh, *Medical journal of the Islamic Republic of Iran*, **2015**, *29*, 239. **[crossref], [Google Scholar], [Publisher]**
[31] M. Hosseini, A. Tizmaghz, H.R.A. Otaghvar, M. Shams, *Advances in Surgical Sciences*, **2014**, *2*, 5-8. **[crossref], [Google Scholar], [Publisher]**
[32] S.A. Mirmalek, F. Tirgari, H.R. Alizadeh, *Iranian Journal of Surgery*, **2005**, *13*, 48-54. **[crossref], [Google Scholar], [Publisher]**
[33] H.A. Danesh, S. Javanbakht, M. Nourallahzadeh, N.M. Bakhshani, S. Danesh, F. Nourallahzadeh, F. Rezaei, H.R.A. Otaghour, *International Journal of High Risk Behaviors and Addiction*, **2019**, *8*, e66232. **[crossref], [Google Scholar], [Publisher]**
[34] A. Rouientan, H.A. Otaghvar, H. Mahmoudvand, A. Tizmaghz, *World journal of plastic surgery*, **2019**, *8*, 116. **[crossref], [Google Scholar], [Publisher]**
[35] S.E. Hassanpour, M. Abbasnezhad, H.R.A. Otaghvar, A. Tizmaghz, *Plastic surgery international*, **2018**. **[crossref], [Google Scholar], [Publisher]**
[36] M. Yavari, S.E. Hassanpour, H.A. Otaghvar, H.A. Abdolrazaghi, A.R. Farhoud, *Archives of Bone and Joint Surgery*, **2019**, *7*, 258. **[crossref], [Google Scholar], [Publisher]**
[37] S.E. Hasanpour, E. Rouhi Rahim Begloo, H. Jafarian, M. Aliyari, A.M. Shariati Moghadam, H. Haghani, H.R.A. Otaghvar, *Journal of Client-Centered Nursing Care*,

2017, *3*, 223-230. **[**crossref**], [**Google Scholar**], [**Publisher**]**

[38] M. Tarahomi, H.R.A. Otaghvar, D. Shojaei, F. Goravanchi, A. Molaei, *Case reports in surgery*, **2016**. **[**crossref**], [**Google Scholar**], [**Publisher**]**

[39] R. Seyedian, S.M. Hosseini, N. Seyyedian, S. Gharibi, N. Sepahy, S. Naserinejad, S. Ghodrati, M. BAHTOUEI, H.R.A. Otaghvar, A. Zare Mir akabadi, *Iranian Suth Medical Journal(ISMJ)*, **2013**, *16*, 215-224. **[crossref], [**Google Scholar**], [**Publisher**]**

[40] M. Sarani, M. Oveisi, H. Rahimian Mashhadi, H.R.A. Otaghvar, *Weed Research*, **2016**, *56*, 50-58. **[**crossref**], [**Google Scholar**], [**Publisher**]**

[41] GH.R. Heydari, F. Hadavand, H. Maneshi, N. Moatamed, K. Vahdat, M. Fattah, H.R.A. Otaghvar, *Iranian South Medical Journal*, **2014**, *16*, 479-485. **[crossref], [**Google Scholar**], [**Publisher**]**

[42] M. Hosseini, A. Tizmaghz, G. Shabestanipour, A. Aein, H.R.A. Otaghvar, *Annual Research & Review in Biology*, **2014**, *4*, 4381-4388. **[**crossref**], [**Google Scholar**], [**Publisher**]**

[43] K. Ghajarzadeh, M.M. Fard, H.R.A. Otaghvar, S.H.R.Faiz, A. Dabbagh, M. Mohseni, S.S. Kashani, A.M.M. Fard, M.R. Alebouyeh, *Annals of the Romanian Society for Cell Biology*, **2021**, *25*, 2457-2465. **[crossref], [**Google Scholar**], [**Publisher**]**

[44] K. Ghajarzadeh, M.M. Fard, M.R. Alebouyeh, H.R.A. Otaghvar, A. Dabbagh, M. Mohseni, S.S. Kashani, A.M.M. Fard, S.H.R. Faiz, *Annals of the Romanian Society for Cell Biology*, **2021**, *25*, 2466-2484. **[crossref], [**Google Scholar**], [**Publisher**]**

[45] K. Ghajarzadeh, M.M. Fard, H.R.A. Otaghvar, S.H.R. Faiz, A. Dabbagh, M. Mohseni, S.S. Kashani, A.M.M. Fard, M.R. Alebouyeh, *Annals of the Romanian Society for Cell Biology*, **2021** *25*, 2449–2456. **[crossref], [**Google Scholar**], [**Publisher**]**

[46] M.D. Feizollah Niazi, S. Niazi, H.R.A. Otaghvar, F. Goravanchi, *Res. Bul. Med. Sci.*, **2018**, *23*, 7. **[crossref], [**Google Scholar**], [**Publisher**]**

[47] S.M. Moosavizadeh, H.R.A. Otaghvar, M. Baghae, A. Zavari, H. Mohyeddin, H. Fattahiyan, B. Farazmand, S.M.A. Moosavizadeh, *Medical journal of the Islamic Republic of Iran*, **2018**, *32*, 99. **[**crossref**], [**Google Scholar**], [**Publisher**]**

[48] A. Tizmaghz, S. Motamed, H.A.R. Otaghvar, F. Niazi, S.M. Moosavizadeh, B. Motaghedi, *J. Clin. Diagn. Res.*, **2017**, *11*, PC05-PC07. **[**crossref**], [**Google Scholar**], [**Publisher**]**

[49] M.R. Guity, H.R.A. Otaghvar, M. Tavakolli, A.R. Farhoud, *J Orthop Spine Trauma*, **2016**, *2*. **[crossref], [**Google Scholar**], [**Publisher**]**

[50] H.R.A. Otaghvar, P. Soleymanzadeh, M. Hosseini, S. Karbalaei-Esmaeili, *Journal of Cancer Research and Therapeutics*, **2015**, *11*, 655. **[**crossref**], [**Google Scholar**], [**Publisher**]**

[51] H.R.A. Otaghvar, M. Baniahmad, A.M. Pashazadeh, I.Nabipour, H. Javadi, L. Rezaei, M. Assadi, *Iranian Journal of Nuclear Medicine*, **2014**, *22*, 7-10. **[crossref], [**Google Scholar**], [**Publisher**]**

[52] M. Hajilou, H.R.A. Otaghvar, S. Mirmalek, F. Yosefi, S. Khazrai, N. Tahery, M. Jafari, *Iranian Journal of Surgery*, **2013**, *21*, 0-0 **[crossref], [**Google Scholar**], [Publisher]**

[53] H.R.A. Otaghvar, S. Firoozbakht, S. Montazeri, S. Khazraie, M. Bani Ahmad, M. Hajiloo, *ISMJ*, **2011**, *14*, 134-139. **[crossref], [**Google Scholar**], [**Publisher**]**

[54] H.R.A. Otaghvar, K. Afsordeh, M. Hosseini, N. Mazhari, M. Dousti, *Journal of Surgery and Trauma*, **2020**, *8*, 156-160. **[crossref], [**Google Scholar**], [**Publisher**]**

[55] I.M. Zeidi, H. Morshedi, H.R.A. Otaghvar, *Journal of Preventive Medicine and Hygiene*, **2020**, *61*, E601. **[**crossref**], [**Google Scholar**], [**Publisher**]**