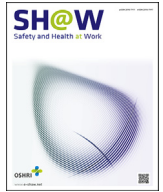




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Original article

## Effectiveness of a Training Program Based on Stress Management on NEDSA Staff and Line Staff

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### ABSTRACT

**Background:** The purpose of present study was to determine the effectiveness of training program based on job stress management in NEDSA and line staff.

**Methods:** The study method of this study was quantitative and quasi-experimental research **Methods:** From the statistical population (all employees of the NEDSA and line staff in 2020–2021), 30 of these people were selected by judgmental sampling method and considering the inclusion and exclusion criteria. The participants were first matched based on age and education and were randomly divided into experimental and control groups. First, pre-test was taken from both groups (Job Stress Questionnaire). The experimental group was presented with a job stress management training package and no protocol was presented in the control group. After the sessions, post-test was received from both groups (experimental and control). After two months, a follow-up test was performed.

**Results:** The results were entered into SPSS-24 software and analyzed. The results of repeated measure showed high effectiveness of the job stress management package (researcher-made). **The** results showed that the job stress management training package showed 67.5% effectiveness and also the training effect of job stress management training was stable for two months (follow-up).

**Conclusion:** Based on these results, Training program based on stress management can be effective in military staff.

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## 1. Introduction

Job stress has become a major issue in the 21st century, affecting family, work and quality of life [1,2]. In fact, job-related stress is the response of people to job demands and pressures that do not match their knowledge and abilities and challenge their ability to cope at work. This stress may vary from mild to severe depending on the type of job, physiological, psychological and social status of the person [3–6]. Job stress reduces a person's level of performance, and when a person is expected to play several conflicting roles, the person experiences conflict, which is more common in military setting [7]. In the face of stress, stress management is a topic that refers to a wide range of psychotherapy techniques and methods that are designed to control the level of individual stress and improve a person's daily functioning [8,9]. Stress management

increases people's ability to reduce stress and adapt appropriately to stressful situations. Stress management training reduces the negative effects of stress on the body and mind [10–14].

Among the population groups, the military are among the groups most at risk. Many stressors influence this group. In fact, job stress and general health are among the factors affecting military performance. Most military personnel have experienced job stress in various areas. Various factors such as workload, dealing with defendants, unpredictable nature of work, continuous shifts, lack of psychological support, ambiguity in the amount of authority and increasing bureaucracy can be among the stressors of militarism [15–18]. Researchers have shown that problem-solving style is the most commonly used style in military personnel in dealing with job stress situations [19–22]. Other researchers in a review study examined the effectiveness of a virtual software program for training stress

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management in the military. The results of this review study showed that the virtual software program can reduce stress perceived in the military by improving stress management skills [23].

Noticeably, the presence of tension and stress reduce the level of consciousness and impaired military performance. On the other hand, these conflicts are greater in some environments, such as military centers. When the person experiencing high stress in the workplace; demand for the work environment is excessive and cannot reach its goals more likely experience job burnout [24–27]. So, stress is one of the most important factors in causing physical and psychological complications in personnel and reducing the productivity of organizations. If job stress is not properly managed, it can affect the quality of work of employees and their psychological health [28,29]. Job stress can also cause behavioral changes, including absenteeism, drug abuse, smoking and drugs [30,31]. In addition to the problems that job stress creates in employees, it also has problems and consequences for the organization, and heavy costs for the organization, including reduced productivity and motivation in people, increase errors and strikes. Given the importance of the role of the military in defending the country, it seems that the implementation of stress management programs can be effective in reducing the psychological burden of stress-related diseases. So, the aim of present study was effectiveness of a stress management training in Navy of the Islamic revolutionary guard corps and line staffs.

## 2. Materials and Methods

### 2.1. Study design and setting

This study was accomplished within three months between January 2020 and March 2021 at the Artesh 505 Hospital (connected to Baqiyatallah University of Medical Sciences). The ethical committee of Baqiyatallah Hospital approved this study (Approval ID: Approval ID: IR.BMSU.REC.1400.070). To consider ethical issues, after thorough explanation of the whole process and the purpose of the study to the participants, a written informed consent was given to each participant. Moreover, authors give a complete explanation to each participant on that they are completely free to finish the trial at any time they want. First, pre-tests were taken from both groups. An educational protocol was presented to the experimental group and no protocol was presented to the control group. After the sessions, post-test was received from both groups (experimental and control). After two months, a follow-up test was performed.

### 2.2. Sample size

The sample size was based on quasi-experimental studies of 30 employees of NEDSA and line staff line who were selected through available sampling based on inclusion and exclusion criteria.

$$n_1 = n_2 = \frac{(S_1^2 + S_2^2) \left( Z_{1-\frac{\alpha}{2}} + Z_{1-\beta} \right)^2}{(\bar{X}_1 - \bar{X}_2)^2}$$

$$X1 = 2.85.$$

$$X2 = 2.44.$$

$$S1 = 0.7.$$

$$S2 = 0.4.$$

$$Z1-\alpha/2 = 1.96.$$

$$Z1-B = 0.84$$

$$\alpha(\text{alfa}) = 0.05.$$

$$B(\text{beta}) = 0.2.$$

### 2.3. Inclusion and exclusion criteria

Inclusion criteria included Navy of the Islamic Revolutionary Guard Corps staff, age between 30 and 50 and any acute mental or physical illness. Exclusion criteria included termination of employment and leaving Navy of the Islamic Revolutionary Guard Corps in any form (early retirement, resignation, dismissal, transfer to other organizations, disability, etc.) and not participate in any other stress management program or any stress reduction program.

### 2.4. Procedure

The present training package includes 12 sessions (every session 2 h) that were performed in two groups. Each session has three sections. The first part consists of the activities and tasks of the last session for about 20 min. In the next section, 40 min are devoted to explaining the subject, techniques and examples, and the third section includes 50 min, which discusses how to apply these skills in a person's daily life and in the face of job stress. In the final 10 min of the session, assignments for the next session are presented. Due to the long training session (2 h) after one hour of training, 15–20 minutes of rest and reception were considered.

### 2.5. Instrument

The Job Stress Questionnaire was designed by Hellriegel and Slocum in 1996. It measures a person's stress level in his job. This questionnaire includes 10 items on a five-point Likert scale (always = 10, never = 0), assessing the three factors of physical environment (3 items), role conflict (4 items), and role ambiguity (3 items) [32]. This questionnaire, which was designed on the basis of the views of the two famous management scholars, Hellriegel and Slocum, has a high level of face validity and reliability [44]. To check the reliability of the questionnaire in this study, Cronbach's alpha for 90 persons was measured at 0.79 [33].

### 2.6. Statistical analyses

Descriptive data were analyzed and displayed using descriptive statistical methods such as mean and standard deviation and frequency distribution. Moreover, analysis of covariance (ANCOVA) was used to compare the two groups. SPSS software (version 24, IBM Corp., Armonk, NY, USA) was used for the statistical analyses.

## 3. Results

In experimental group 2 people was between 30–32, 3 people was between 33–35, 5 people between 36–38 and 5 people between 39–41. In control group, 5 people were between 33–35, 6 people was between 36–38, 4 people was between 39–41. In total, most of the subjects are between 36 and 38 years old. Descriptive indices are presented in Table 1. (see Table 2).

Also, based on Kolmogorov–Smirnov test and Shapirovilk test, the calculated significance is above 0.05 that parametric statistics can be used. Moreover, according to the result of M Box The significance level of the test is 0.259 which is more than 0.05 and the null hypothesis based on the equality of the observed covariance matrices between the groups is confirmed. The level of significance in Mauchly's Sphericity Test has been reduced to less than 0.05 and as a result the null hypothesis is not confirmed. Due to the fact that in addition to the post-test in the follow-up stage, the variables were measured in the two groups studied, the repeated measurement

**Table 1**  
Job stress management training package

Session	Technique	Assignment
1	Express the goals of the sessions and receive a commitment to continue the sessions. Explain and define some of the concepts affecting stress and job stress and Holmes table training to learn more about stress and its impact on life.	Write down the stressors at work based on the Holmes and Raheh table.
2	Initial introduction and expression of the history of positive psychology and emphasis of this branch of psychology on strengths and weaknesses instead of focusing on weaknesses and shortcomings.	Imagine a stressful job situation and determine your reaction during and after stress.
3	Review and check the assignments of the previous session. Defining resiliency and its importance in life and dealing with stressful problems and situations.	Write two examples in cases where you have shown resiliency.
4	Explain how hope grows and the necessity of its existence and its effect on despair, depression and feelings of emptiness.	Mention a few current events and explain the role of hope in it.
5	Explain about emotions and its types. Increasing positive emotions in the present (doing things that make life happy and enjoyable), discussing the lack of positive emotions and as a result causing psychological damage.	Write down two of your past events and highlight the role of your attribution style in it.
6	Self-efficacy and characteristics of self-efficacy individuals, training of factors affecting self-efficacy.	Make a list of your strengths and weaknesses and identify the source of their formation
7	Explain social capital and express its components, relationships, networks, cooperation, trust, mutual understanding, values, commitment.	Write your social capital according to the explanations given in the meeting.
8	Explaining the different parts of a communication (messenger, message, and recipient).	Write a stressful job situation that is related to others.
9	Strengthen self-control and patience skills, interruption techniques (such as drinking a glass of cold water, leaving the place).	Identify the task of the previous session in terms of nonverbal communication,
10	Defining emotion and controlling emotions, managing anger and stress and anxiety, teaching stress management techniques. Stress coping strategies.	Practice the relaxation technique.
11	Introducing relaxation as a treatment method and behavioral therapy techniques physical methods of coping with stress.	Practice active listening.
12	Summarizing the topics of the previous sessions and the relationship between these topics and the impact of these issues on the individual's behavior.	—

method was used to analyze and test this hypothesis. Result of MANCOVA analysis for comparison between two groups is presented in Table 3. Also, as it can be seen the box plot of three measurement of study presented (Fig. 1).

The above table is the most important table for interpreting the results of repeated measures analysis of variance test and shows the significance of the effect of the independent variable (group). In this table, the significance level of the group variable for the job stress variable is 0.001, which is less than 0.05 and shows that this variable has a significant effect on the average job stress score. That is, the mean score of job stress was significantly different between the two groups and the ETA squared index was calculated to be 0.675.

#### 4. Discussion

The aim of present study was effectiveness of stress management training on job stress of NEDSA staff and line. The results of the present study confirm the hypothesis that the job stress management package increases the job stress management in the staff of NEDSA and line staff. Also, there is no similar study to review and compare these results. However, there are studies that have used methods to reduce stress. So, the findings of the present study are consistent with these studies [1,11,18,26].

**Table 2**  
Descriptive indices

Test	Group	N	Mean	SD
Pre-test	Experimental	15	42.06	2.86
	Control	15	35.93	2.73
	Total	30	39.00	4.16
Post-test	Experimental	15	25.73	1.70
	Control	15	35.07	1.16
	Total	30	30.40	4.95
Follow up	Experimental	15	26.33	1.75
	Control	15	34.13	1.35
	Total	30	30.23	4.25

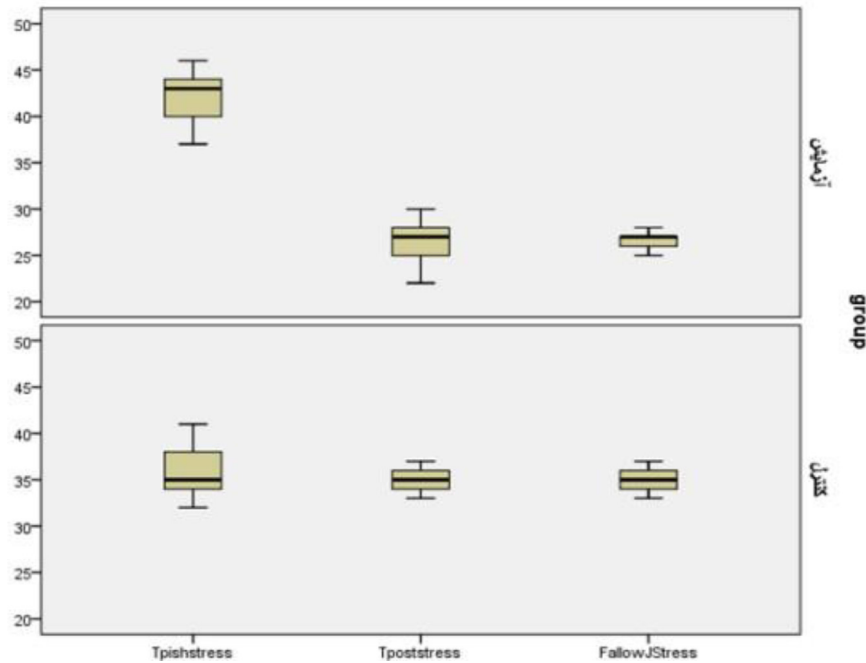
Jackson et al. (2019) showed stress management training is effective among veterans with post-traumatic stress disorder and brain injury. They concluded that the use of stress management training protocol is effective in reducing the symptoms of post-traumatic stress disorder and depression, improving performance and increasing the rate of treatment initiation in evidence-based and trauma-focused therapies. Hourani et al (2018) demonstrated that stress management training reduces the risk of post-traumatic stress disorder in people who do not have primary mental health problems and prevents depressive symptoms. Moreover, authors in a review study, the effectiveness of a virtual software program for stress management training in the military was examined. The results of this review study showed that the virtual software program can reduce the perceived stress in the military by improving stress management skills [6]. Also, Zhu et al. conducted a study aimed to evaluate the effectiveness of stress reduction programs in the military. Examination of the results showed that the stress reduction program had a significant effect on reducing the perceived stress of the military [8].

In explaining these results, it can be said that the stress management package is appropriate to the characteristics and conditions of NEDSA employees, and on the other hand, due to its multifaceted nature and addressing several important aspects of coping with job stress, has been able to significantly reduce job stress in NEDSA employees. We know that there is no person who has not experienced traumatic and stressful events even once in their lifetime, but not all people are equally affected and are not

**Table 3**  
Result of MANCOVA analysis for comparison between two groups

Source	SS	F	MS	F	Sig
Group	99268.011	1	99268.011	19060.910	0.001
Error	302.500	1	302.500	58.084	0.001
Error	145.822	28			

SS: Sum of squares, F: Freedom, MS: Mean of squares



**Fig. 1.** Box plot of three measurement of study. \* The up and down plots are related to experimental and control groups, respectively.

harmed by stress, because It is the ability of people to cope with stress and manage it [17,22]. Job stress occurs when a person feels unable to cope or control the situation, so training and knowledge of physical and psychological techniques to deal with job stress leads to the development of abilities and help him manage job stress. In fact, stress awareness and training to deal with stressful situations increase people's adaptability [12,24].

In this regard, positive characteristics in the individual lead to better coping and greater adaptation to stress. Positive psychology uses the term psychological capital to indicate the motivational desire of the individual that occurs through positive psychological structures. Recent studies have shown that psychological capital can be increased through short-term educational interventions among individual [15].

One of the problems and limitations of the present study was the involvement of NEDSA staff and staff. On the other hand, coordination to attend the sessions was associated with problems, but nevertheless, the sessions were held and there was no drop in the subject. It is suggested that considering the use of the package (content validity) and review and confirmation of effectiveness (about 68%) as well as the importance of reducing job stress among NEDSA employees, the use of this package widely and in the form of training courses for these employees and Hold forces. Also, if a stress package is developed for the families of these employees, its effectiveness should be examined.

## 5. Conclusion

Stress management protocols can be effective in reducing military job stress. The material in this protocol emphasizes the individual's cognitive and coping mechanisms and increases the resilience of the military to deal with stressful situations. Military resilience is also affected over time by stress management training programs and in the long run is institutionalized as part of the learned behavior in the military.

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## Roles and contributions

Dr. Esfandiar Azad created the idea and devised the research plan. Then, he handled the correspondence for the official permission in order to conduct the study. Dr Bagher Hassanvand proceeded with the data collection. Dr. Eskandari wrote the entire article and performed the statistical analyses. Dr Bagher Hassanvand reviewed the drafts and corrected the mistakes.

## Prior publication

The authors declare that all the data collected during the study is only presented in this manuscript and this article has not been presented or published in any form partially or in full.

## Conflicts of interest

The authors declare that they have no competing interests.

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