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ORIGINAL ARTICLE

Effect of Military Training on Soldiers' Emotional Reactions

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ABSTRACT
A major part of armed forces consists of soldiers and draftees, who are considered the most valuable treasures of the world's armies. This study aimed to investigate the psychological impacts of military training course on soldiers.This pre-experimental study was done on 373 draftees in military training barracks who were selected using multistage random sampling method. Data collected using a researcher-made questionnaire of personal details and standard DASS-21 questionnaire that was used to assess soldiers' emotional reactions with 3 subscales of stress, anxiety, and depression. Data was analyzed using SPSS 19 using absolute and relative frequencies and inferential statistics including Wilcoxon, Chi-square, Fisher's exact and Spearman's and Pearson correlation coefficients correlation coefficient tests.A significant reduction was observed in stress, anxiety and depression after training course. Military training course affects soldiers' psychological reactions and significantly reduces their anxiety, stress and depression by the end of the course.
Keywords*: Stress, Psychological (68013315); Anxiety (68001007); Depression (68003863); Military Personnel (68008889)*

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INTRODUCTION

Military atmosphere is considered as genuine generator of complex behaviors. The military training aims both adaptation to high uncertainty situations in conflict areas and the specific situations in peacetime [1, 2]. This inherently stressful profession constitutes a unique community with its hierarchic and disciplinary structure, tiresome training curriculum and rigid defined rules and also with a broad range of psychological and physical health challenges related to prolonged exposure to stressful environments [3, 4].

To anticipate military service, troops may experience considerable anxiety and distress followed by higher mental health risk consequences [5]. Living in the crowded conditions and the physically demanding often leads to different diseases epidemics [6, 7] and unhealthy behaviors such as smoking [8] that has been ascribed to high population density, extreme physical and psychological challenges during training and combat operations [7].

A recent research demonstrates a strong association between mental disorders and military services stressors [9]. People are expected to deal with significant and potentially traumatizing stressors before, during and after military services including insecurity, need to hurt others and injury or death possibilities [10, 11]. Moreover, being exposed to combat situations has been linked to a range of health disorders such as disturbed sleep habits, low energy, headaches, chronic pain, gastrointestinal disorders [3], substance abuse, post-traumatic stress disorder, physical health problems [3, 12, 13], cardiopulmonary symptoms and injuries [14], traumatic brain injury, depression and anxiety [15-17].

26% of 470 army enlisted men returned from Vietnam had depressive symptoms [18]. The most frequent diagnosis of about 1138 US Air Force recruits referring for mental health evaluation while basic military training was depressive disorders which accounted for 31% of all diagnoses [4]. 29.9% of the recruits had

depressive symptoms in the Turkish Army and who they were uninterested in sports, were smoked or drank and with low incomes, showed higher Beck Depression Inventory (BDI) scores [19].

In other words, soldier's performance is determined by physiological, psychological, ethical and sociological elements, which are required to interact effectively [20, 21]. It has been shown that military operations can cause various stress disorders due to physical strain, energy deficit and sleep deprivation [22, 23].

A major part of armed forces consists of soldiers and draftees, who are considered as the most valuable treasures of the world's armies, since success or failure in operations and war missions are rather dependent on the morale and mental and physical health of the troops than military equipment and arms [24].

All draftees of Iran army are undergone a minimum two months training course at the beginning of their duty. The course is intensive and diverse including man-to-man combat, military operations, information and security and ideological courses. Although the course provides difficult and overwhelming conditions for soldiers, it plays an important role in their mental and physical preparation for working in armed forces [25]. Despite many advantages including additional and healthy outcomes and screening [26], this new condition of life is also associated with huge stresses; e.g. musculoskeletal disorders secondary to course nature [27-30], changes in daily sleeping and dietary habits, restriction in choice and freedom of action, special discipline, frequent and compulsory changes of location and problems with commanding officers and colleagues [31, 32].

As the special features and conditions of the training course can cause various psychological problems for soldiers, military officials and commanders should monitor them continuously. Farahi Bozjani *et al.* have shown that psychological factors, organizational structure and commanders' interactions are the main causes of behavioral problems among draftees [33].

Military service coincides with the young adulthood of 20 to 30 years and youth are associated with their particular stresses. As onset of many psychological disorders is during youth, research emphasizes the importance of attention to mental health in this period of life [34]. On the other hand, onset of the military service creates dramatic transformations in the person's life and is associated with great hardships and stresses [35]. Drafting into military service is predominantly combined with concerns for youths and their families. The researches indicate increasing in drug abuse among youths at entry to military service [36].

Furthermore, military personnel must have high level of physical fitness and performance in order to perform duties in all combat situations, different seasons and varying weather conditions. This study aimed to investigate psychological impacts of military training course on soldiers.

MATERIALS & METHODS

This quasi-experimental study was done on draftees before and after training course in military training barracks in summer 2013. Multistage random sampling method was used for gathering the samples. 14 barracks were considered as 14 clusters and according to the cluster random sampling, 3 barracks were chosen. Then proportional stratified random sampling was considered. In this step, 50% of included soldiers in each barrack were chosen (130 samples in each barrack). Finally, simple random sampling was chosen based on the random numbers table. Based on similar study [37], sample size was estimated as 322. Ratio of soldiers' emotional reactions (P) was found 0.7 with confidence interval of 95%. Given the potential for withdrawal, sample size was determined 390 and due to 17 incomplete questionnaires, it dropped to 373 soldiers.

Data collected using a researcher-made questionnaire of demographic data (age, education level, marital status, history of drug abuse, place of birth, race, service barrack and history of family psychiatric diseases) and the standard DASS-21 questionnaire that was used to assess soldiers' emotional reactions. It contains 21 items in 3 subscales of stress (7 items), anxiety (7 items), and depression (7 items). Scoring was according to Likert scale. "0" did not apply to me at all; "1" applied to me to some degree, or some of the time; "2" applied to me to a considerable degree or a good part of time; and "3" applied to me very much or most of the time, were regarded as the rating scale. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items. Scoring in three axes were according to the five likert ratio as "normal" for depression (0-4), anxiety (0-3) and stress (0-7); "mild" for depression (5-6), anxiety (4-5) and stress (8-9); "moderate" for depression (7-10), anxiety (6-7) and stress (10-12); "severe" for depression (11-13), anxiety (8-9), and

stress (13-16) and lastly, "extremely severe" for depression (14 and more), anxiety (10 and more) and stress (17 and more) [39, 40]. Validity and reliability of the questionnaire has repeatedly been confirmed in Iranian population [37, 40, 41] The reliabilities of the DASS-21 anxiety, depression, stress and total scale were estimated using Cronbach's alpha; 0.88 (95% CI=0.87-0.89) for the depression scale, 0.82 (95% CI=0.80-0.83) for the anxiety scale, 0.90 (95% CI=0.89-0.91) for the stress scale and 0.93 (95% CI=0.93-0.94) for the total scale [42].

Necessary permissions were obtained from Research Office of Nursing Faculty of Baqiyatallah University of Medical Sciences to enter the selected barracks and start the considered procedures. Training barracks were visited after coordination with the officials. Participants were assured of confidentiality and privacy and consents of study subjects were obtained. Questionnaires then were distributed.

Data was analyzed with SPSS 19 using Wilcoxon (for comparing before and after scores of stress, anxiety and depression), Chi-square was used for comparing demographic variables (marital status, qualification, history of substance abuse, location of parents and ethnicity) with three dimensions of emotional reactions, Fisher's exact (for comparing dimensions of emotional reaction and subscales), Spearman's correlation coefficient was used for comparing other demographic variables with three dimensions of emotional reactions tests and Pearson correlation coefficient was used for comparing the age variable with three dimensions of emotional reactions.

FINDINGS

Participant's age ranged from 20 to 29, with the mean of 24.8±1.6 years. 329 soldiers (88.2%) were single, 191 (51.2%) had university education and 343 (91.9%) had backgrounds of diseases and using psychiatric drugs.

The mean score of stress (0.23±0.56), anxiety (0.63±1.00) and depression (0.44±0.75) subscales before the training course were significantly decreased to 0.05±0.27, 0.14±0.47 and 0.14±0.45 after the training, respectively ($p<0.0001$).

Significant differences were observed between Marital Status ($p=0.01$) and Family's Diseases Background ($p<0.001$) and the subscale of anxiety. There were no significant differences between Drug Abuse Background, Parents' Residence, Ethnicity and Education and each subscale.

There were no observed significant correlations between age (Pearson) and other qualitative variables (Spearman) with three dimensions of DASS.

DISCUSSION

This study aimed to investigate psychological impacts of military training course on soldiers. The results of demographic characteristics such as age, marital status and education were in line with results of studies on Iranian soldiers [25, 33, 37, 42] which indicates that samples represented community of draftees.

There were significant differences between soldiers' stress, anxiety and depression before and after training course. These reactions improved after training. These results are consistent with the results of a study by Daneshfar and Zakeri, which indicate that military training course affected psychological empowerment of soldiers and made them more confident and competent [25]. They are inconsistent with the results of a study by Fakorian *et al.* on the effect of a selected military exercise course on physical preparation, mental health and mood of cadet officers that despite affecting physical preparation of the subjects, military training course do not have a significant effect on their mental health and moods [43]. Two reasons are involved; first; elevated psychological reactions such as stress, anxiety and depression is normal at onset of training course, which is due to unfamiliar environment. Soldiers' fears and concerns reduce as time passes. Second; by the end of military training course, not only no undesirable changes in psychological reactions occurred in soldiers, but also these reactions were reduced [43].

The results are also in agreement with those of Hong Zhang *et al.* in which signs of anxiety and depression reduce after military training course [44] and with those of Buško and Kulenović which reveal moderate but a significant increase in ability to cope with stressful situations as well [45]. However, they disagree with results obtained by Khademhossaini *et al.* using GHQ28 questionnaire. Although soldiers' mental health before and after training did not significantly change, the difference is significant in physical signs and social functioning [24].

A significant difference was observed between family's mental illness background, anxiety and depression, which is concurs with results found by Hajiamini *et al.* [37]. In other words, anxiety, stress and depression increased in soldiers' families with history of mental diseases. Results also showed a significant difference between marital status, anxiety and depression, which is inconsistent with the results of Hajiamini *et al.* [37]. The relationship between marital status and mental health and its subscales is insignificant in Farsi *et al* study. [46]. In this study, there was a significant relationship

between education and depression. But, in Hajiamini *et al.* study, education level was significantly related to all three areas of psychological reactions [37]. However, in Farsi study the relationship between education and depression was insignificant [46], which disagrees with our results.

Of limitations of this study was handling the multistage sampling; entering to barracks and data collection; and finally sustaining and maintaining the closed communication to soldiers with the purposes of exact data collection and higher response rate of useful completed questionnaires.

It is suggested to consider educational and administrative measures to prevent, control and reduce anxiety, stress and depression of soldiers during their training. Theoretical, practical and environmental situations of soldiers' training in military barracks could ameliorate, improve and enhance the psychological reactions of soldiers after military training.

CONCLUSION

Military training course affects soldiers' psychological reactions and significantly reduces their anxiety, stress and depression by the end of the course.

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