

Role of sports on scales of mental health among a battalion of Iranian conscripts

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ABSTRACT

Purpose: Good mental health is important for individuals as well as for society. At the individual level, good mental health enables people to realize their intellectual and emotional potential and fulfill their roles in society. This study sought to investigate the role of sports and physical exercises on scales of mental health among a battalion of Iranian conscripts in Fars province.

Materials and Methods: After translating the standard General Health Questionnaire (GHQ), and adjusting some of its question, the questionnaires were evaluated by a few experts of physical education and sport sciences. The reliability with Cronbach's alpha value was 0.87. Then according to Odineski's table, 98 questionnaires were distributed between the athletic conscripts and 115 questionnaires between the non-athletic conscripts, randomly. The collected data was analyzed by *t*test and one-way ANOVA.

Results: There were significant differences in the mean scores of the four mental health scales: depression, physical signs and sleep disorders and social function disorders in both groups ($P = .01$, $P = .02$, $P = .03$ and $P = .02$, respectively). Also, there was a significant difference in the mental health condition of the single and married conscripts. The married conscripts had better mental health conditions compared to the single conscripts in scales of mental health.

Conclusion: There was significant correlation between exercises and scales of mental health. Since athletic conscripts had less psychological problems, it is recommended that physical activity be part of the strategies to improve mental health among non-athletic conscripts.

Keywords: exercise; mental health; soldiers; physical; conscript.

AMHSR 2014;12:29-33
www.journals.ajaums.ac.ir

INTRODUCTION

Mentality is the balance between different aspects of emotional, spiritual, mental, physical, and social life. The way we manage our environment and make decisions for our life is important. Accordingly mental health is an indistinguishable element of our physical health.¹

Naturally, physical structure of human requires various kinds of physical activities for growth and evolution. Immobility and lack of appropriate physical activities endanger various systems of human body. This major change is one of the important problems of the new era from a healthcare perspective.² The results of studies demonstrate that reluctance to participation in sports causes psychiatric disorders such as abate of personal

motivation, reduction of efficiency, and having wrong beliefs about health.^{3,4} According to The World Health Organization (WHO), any individual who is not mentally sound, is not enumerated as healthy. This is also confirmed by the Pan-American Health Organization and World Federation of Mental Health.⁵

Mental health covers particular aspects of human body such as intelligence, mind, and thought.⁶ It is one of the factors that influence progress and mobility of society. Meta-analytic surveys have reported a significant association between reduction of anxiety, sleep disorder, and exercise⁷ as well as reduction of depression and exercise^{8,9} and also increasing the total time of sleeping and exercise.¹⁰ Lowry and colleagues have demonstrated

that there is a close relationship between physical health and improvement of mental characteristics.⁸ For instance, as the symptoms of trauma increase, aerobic power decreases; so that having poor physical condition has been considered in psychopaths. According to Kameo and colleagues, an individual who has mental health is a person who is away from anxiety and disability symptoms. He or she can make a constructive communication with the others and has ability to confront to life stresses.¹¹

Knechtle and colleagues suggested that exercise results in mental health recovery and temperamental disorders decrease after exercise. They reported the appearance of better temperament after physical activities caused by the exhilarative materials which body generates due to the exercise.⁹ However, a study showed that athletic soldiers have lower negative emotional states and higher positive states than non-athletics.¹²

Dilorenzo and colleagues argue that physical activities and exercises affect the promotion of mental hygiene, depression reduction, increasing well-being, social and mental health, self-esteem, self-confidence, and self-recovery.¹³ Studies which have compared the mental health between athletes and non-athletes have reported significant differences in two subscales of anxiety and depression,^{14,15} in all four scales,¹⁶ as well as only in subscale of depression.¹⁷

Generally, there are various theories about the kinds of exercises as well as their relationships with increasing physical and mental health, all stating that exercises are effective on improving mental and physical health. Also, some researchers have argued that as well as useful effects, physical activities can also cause psychiatric disorders. In the other word physical activity can endanger mental and physical health; particularly when practices are serious and intensive.¹⁸ The relationship between practices and improvement of mental symptoms does not seem to be general and absolute.^{19,20}

Since many researchers have emphasized on the role of physical activates and exercises in preventing diseases and psychiatric disorders and only a few studies have investigated mental health among athletic and non-athletic soldiers, the present study set out to explore whether physical exercises or sports result in improvement of mental health in athletic conscripts compared to non-athletic conscripts or not.

MATERIALS AND METHODS

In this cross-sectional study, the statistical population consisted of all conscripts of Fars province who served in 2012. From among them, 98 athletic and 115 non-

athletic conscripts were selected randomly as the sample.

A 28-item questionnaire of General Health Questionnaire which designed by Goldberg and Hiller was used to elicit the data.²¹ This is a standard tool which is used by many countries including Iran. It has been used widely in intention to diagnose minor psychiatric disorders.¹⁸ Reliability of this form has been calculated as 91%.²² This 28-item questionnaire is the most common and the best-known of its kind.

In the present research the 28-item questionnaire consisted of four scales, each scale encompassing seven questions. They were scale A related to physical symptoms (questions 1-7), scale B that covers anxiety symptoms and sleep disorder (questions 8-14), scale C that contains social performance disorder (questions 15-21) and scale D related to depression symptoms (questions 22-28).

Various methods have been suggested to score this test. In present research the simple method of Likert was used. According to this method, a score between 0 to 3 (0, 1, 2 or 3) is assigned to each answer. The total score of any individual is calculated by summation of the scores of four subscales; so that the maximum of total score of any individual may be 84. In the present questionnaire, higher total score indicated lower lever of mental health and lower total score signified the higher level of mental health. This meant that the participants, whose total scores were less than 23, were not recognized to have disorder.²³ In the present research, face validity was verified through correction of some questions and receiving the experts opinions. The reliability of the test was assessed 87% by Cronbach's alpha; so the validity was high. Statistical methods utilized for data analysis included descriptive statistics consisting of mean and standard deviation, and inferential statistics such as student *t* test and ANOVA.

RESULTS

Anthropometric characteristics of subjects have been reported in Table 1. The mean age of athletic conscripts was less than the mean age of non-athletic conscripts. Also, the mean weight of athletic conscripts was less than the mean weight of non-athletic conscripts. However, the

Table 1. Characteristics of anthropometric participants.

Variable	Athletic Conscripts* (n = 98)	Non-athletic Conscripts* (n = 115)
Age (years)	25.36 ± 4.3	27.42 ± 3.5
Height (cm)	173.17 ± 6.1	168 ± 5.4
Weight (kg)	63 ± 2.7	67 ± 4.6

*Mean ± SD

mean height of athletic conscripts was more than the mean weight of non-athletic conscripts. In Table 2 the results of the research demonstrated that there is a significant difference between the level of physical symptoms in athletic and non-athletic conscripts ($P = .02$); Thus, the athletic conscripts have better physical symptoms than the non-athletic conscripts.

Comparing the average of social performance disorder of athletic and non-athletic conscripts also showed a notable difference ($P = .02$); athletic conscripts had less social performance disorder in comparison with the non-athletic conscripts. Comparing the average level of the depression indicated that athletic conscripts have less depression than non-athletic conscripts and the difference was significant ($P = .01$). Considering the level of sleep disorder shows that athletic conscripts had less anxiety and sleep disorder in comparison to the non-athletic conscripts ($P = .03$).

There was a significant difference between the physical symptoms scale of married conscripts and single conscripts ($P = .01$) and single conscripts had better physical symptoms (Table 3). Regarding depression, married conscripts had less depression than single conscripts and the difference was significant ($P = .03$). Considering the mean of anxiety and sleep disorder, a significant difference was observed between single and married conscripts ($P = .02$). Married conscripts had less anxiety and sleep disorder. Also, concerning social performance disorder, married conscripts had less social performance disorder than the single conscripts which was significant ($P = .01$).

DISCUSSION

This study set out to investigate whether physical

exercises or sports result in improvement of mental health in athletic conscripts compared to non-athletic conscripts or not. The results showed that generally the average scores of athletic conscripts are less than the average scores of non-athletic conscripts in the scales of depression, physical symptoms, anxiety and sleep disorder, and social performance disorder (Table 2).

These differences were significant and presented the better condition of mental health of athletic conscripts than the non-athletic conscripts. These findings are similar to Taylor and colleagues' work, which stated that people who regularly do physical activities such as walking, jogging, swimming, aerobic, and playing in sports team presumably have more ability to do tedious tasks in long period than people who do not exercise. This may be due to adaptive responses of body caused by regular exercises.²⁴

There are many evidences concerning the advantages of doing regular physical activity for health.^{25,26} Researches indicate that regular exercise is accompanied by less stress and anxiety. People who participate in fitness and exercise programs have reported that their attitude and efficiency improve in their work offices, for instance by making fewer mistakes.²⁷ Novell and Belles showed that training programs have great contribution in gaining mental health.²⁸ Another study confirmed that athletic students have a better condition of mental health than non-athletic students.²⁹ Comparing sportswomen with non-sports women, Isfahani described significant differences in all scales of mental health¹⁶ while Hosseini and colleagues argued that the different is only significant in the subscale of depression.¹⁷

Cox and colleagues have stated that athletes have lower negative emotional states and higher vitality in comparison with non-athletes. Also successful athletes

Table 2. Scales of mental health among athletic and non-athletic conscripts.

	Athletic*	Non-athletic*	P value**
Depression Symptoms	5.3 ± 2.1	15.4 ± 3.6	.01
Physical symptoms	3.8 ± 1.9	13.7 ± 2.2	.02
Anxiety symptoms and sleep disorder	2.3 ± 1	14.3 ± 1.6	.03
Social performance disorder	4.2 ± 1.5	16.5 ± 3.3	.02

*Mean ± SD;

**Significant at level of $P < .05$.

Table 3. Scales of mental health among single and married conscripts.

	Married*	Single*	P value**
Depression Symptoms	7.2 ± 3.2	19.5 ± 3.1	.03
Physical symptoms	6.3 ± 2.7	15.7 ± 3.2	.01
Anxiety symptoms and sleep disorder	3.5 ± 2.1	14.5 ± 2.7	.02
Social performance disorder	5.8 ± 2	17.1 ± 2.6	.01

*Mean ± SD;

**Significant at level of $P < .05$.

mentally have healthier profile mood states in comparison with unsuccessful athletes.¹² Landers and colleagues have explained the conflicting results of some studies. Some studies suggest exercises with low intensity are more profitable,³⁰ while others claim that aerobic exercises with moderate intensity are more useful.³¹ Still, another study claimed that exercises with high intensity are more efficient.³² This has made some researchers to suggest that the intensity of the exercises be determined for each individual.³⁰

According to findings of the present research, it is probable that regular exercise be a determining factor of mental health. Appropriate physical activities result in preservation of self-esteem and can also be used to control and treat anxiety and depression in the vulnerable groups, particularly long-term and aerobic-related exercises such as running, walking, swimming, and biking which are done in long periods and result in physiological changes and reduction of reactions caused by stress in human body. Since there are less psychological problems in athletes,²² it can be stated that physical activities seem to be more essential than before as an appropriate, easy, inexpensive strategies to increase the soldiers' mental health.

Another finding of the present research is that there is a significant difference between the scales of mental health of married and singles conscripts. Accordingly married conscripts have better mental health condition than single conscripts in scales of depression, physical symptom, anxiety and sleep disorder, plus social performance disorder. This might be due to the role of marriage in improving social support and security. This results in a situation which an individual is able to solve his or her environmental problems more effectively and accurately, leading to increasing happiness in a soldiers/conscripts life.

Sarafino believes that social support by friends, family and others results in stress reduction, affecting the mental health.³³ A study concluded that the total scores of mental health among married people was less than the total scores of the singles. Also the scores of married people in all subscales were less than the scores of singles.³⁴ It suggests that married people's mental health surpasses those of the singles. This finding is similar to many researches.^{35,36}

This study had a few limitations. Firstly, it was the lack similar previous researches in this country, i.e. Iran. Secondly, some conscripts were not cooperative in participating in this study. Lastly, it was the impossibility of gathering the all the participants in a particular location and fulfilling the test in a completely identical place and conditions.

CONCLUSION

This study showed that the athletic conscripts enjoyed a better mental health condition than the non-athletic conscripts by doing regular long-term exercises ones such as running and jogging. Sports can result in reduction of anxiety and depression, increasing of mobility, boosting self-confidence and social spirits. They will lead to a more enhanced and efficient defensive forces and military system for the country. Also, marriage seems to be an effective factor on gaining more social support from family, friends, and other people, resulting in better mental health for conscripts.

It is suggested that more similar studies be done to assess the mental health condition between athletic and non-athletic conscripts in the other battalions of this country. Also, it is recommended that the effective factors on the single conscripts' mental health conditions be investigated. Since it seems that non-athletic conscripts do not have an ideal mental health, it is suggested that the Armed Forced Organization set the required conditions for doing various physical activities and provide more sport facilities for conscripts.

ACKNOWLEDGEMENTS

The authors would like to thank all the conscripts who participated in this study. Also they would like to thank the other battalion members, such as Abozar Behrozi, Armin Behrozi, and others for their guidance and support throughout the process of this study.

CONFLICT OF INTEREST

None declared.

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Received October 2013

Accepted December 2013