Effectiveness of Exercise Activity on Mental Health, Depression and Life Expectancy of Improved Addicts

Abdossaleh Zar 1, Salman Alavi 2, Fatemeh Ahmadi 3, Syedeh Zahra Sephrsi 1
1. Department of Sport Science, Jahrom University, Jahrom, Iran
2. Department of Sport Management, School of Sport Science, Allameh Tabatabaei University, Tehran, Iran
3. Department of Exercise Physiology, Shahid Chamran University of Ahvaz, Ahvaz, Iran

Received: 18 December 2016
Accepted: 18 March 2017
Published online: 1 April 2017

Abstract
Introduction: Drug abuse can affect the mental, physical and social health of individuals. In this regard, the purpose of this study was to investigate the effect of exercise activity on mental health, depression and life expectancy of improved addicts.

Methods: 86 patients from Jahrom City, who had stopped at least one year taking any drugs were voluntarily selected and divided into active (n=34) (Mean ± SD; aged: 36.44 ± 9.91 yrs., height: 177.55 ± 6.96 cm., weight: 79.63 ± 7.60 kg) and inactive (n=52) (Mean ± SD; aged: 39.22 ± 9.24 yrs., height: 173.54 ± 8.05 cm., weight: 76.98 ± 10.77 kg) groups. General health questionnaire (GHQ) and Pittsburgh sleep quality index (PSQI) were used for data collection. Data analysis was done by U Mann Whitney test were using SPSS 18 software (p≤0.05).

Results: The results showed that the mean mental health of the active group was significantly lower than the inactive group (p = 0.008). Additionally, the active group was significantly less depressed than its inactive counterparts (p = 0.001). Furthermore, the active group had a higher life expectancy than the inactive group, although this difference was not statistically significant (p=0.36).

Conclusion: According to the results of the study, active improved addicts had a better status in mental health, depression and life expectancy than inactive people.

Keywords: Addicts, Mental Health, Depression, Life Expectancy, Physical Activity

Introduction
Today, drug abuse has become a global issue, calling it one of the four crises of age (the crisis of the threat of a nuclear bomb, the crisis of environmental degradation, the crisis of poverty and the addiction crisis) (1, 2). Consumption of drugs destroys millions of lives and threatens the order and security of the community, and also destroys national capital at macro-level (in order to prevent or compensate for damage) (3). Given the proximity of the two drug-producing countries (Afghanistan and Pakistan), it is unexpected that our country will not suffer from this ill-fated illness (4, 5). The UN's estimate up to 2008 showed that there are 220 million addicts in the world. Also, the statistics of the Government of the Islamic Republic of Iran in 2006 indicate that there are 367100 addicts in Iran (2). In general, addiction can be considered to be drug dependence, which affects the individual physically and psychologically and controls all his social and individual behaviors (6). Drug abuse can endanger the health of individuals. Research suggests that symptoms such as decreased quality of life and satisfaction with life, reduced mental health, increased depression and anxiety, sleep disturbances, cognitive and emotional disturbances, and social relations impairment are among common outcomes during drug abuse as well as the withdrawal
Addiction not only affects the mental health of the individual but also the mental health of other members of the family. Almost half of people with addiction disorders are simultaneously having psychiatric disorders such as depression. Depression occurs while taking or abandoning the substance. On the other hand, depression itself can increase the risk of addiction. In this regard, a significant relationship between depression and addiction has been reported. In the case of life expectancy, Snyder and Lopez suggested that people with low hopes are more likely to have tendency to drugs because they find it difficult to find a way to reach their goals and have no incentive to achieve their goals. Given the high vulnerability of psychiatric addicts, it is necessary to take steps to improve their mental health. To this end, research shows that through exercise, their mental health, depression and life expectancy can be improved; also exercise has the potential to be the most effective way to treat addiction. The results of a study showed that there is a significant correlation between the overall score of physical activity and the component of exercise with general health. Another study on employees also confirmed the positive effect of exercise on mental health. In the case of depression, a study on hemophilia patients showed that after eight weeks of training in water, a significant improvement in depression was found. Also, Tahmasebi et al., and Motaghi et al. confirmed the positive relationship between exercise and depression. The result of a study showed that exercise can improve life expectancy. Other studies have also reported that sports activities can promote life expectancy. In our studies, we did not find any study on improved addicts. Accordingly, the aim of this study was to investigate the effectiveness of sports activities on mental health, depression and life expectancy of addicts.

Methods
Eighty six patients from Jahrom city, who had stopped at least one year taking any drugs were voluntarily selected and divided into active (n= 34) and inactive (n= 52) groups. Initially, a letter was sent to the welfare organization of Jahrom city. The organization then introduced the researchers with coordinators and organizers of NA meetings. In collaboration with these people, they were present at NA meetings for 2 weeks and samples were found. After voluntarily selecting the subjects and describing the purpose and method of conducting the research, the subjects entered the study. First, they completed all informed consent and demographic information forms. They were assured that all information would remain confidential and would be used only to complete this scientific study. Of the subjects, those who had at least three sessions per week of physical activity were selected as the active group and those who did not have any activity were selected as inactive. Subsequently, the subjects completed the questionnaires. It should be noted that all questionnaires were completed individually and with full supervision. Data collection instruments included general health questionnaire (GHQ), depression inventory (Beck) and Schneider's life expectancy questionnaire. General Health Questionnaire (GHQ- 28) contains 28 questions that examine 4 subscales of physical syndrome, anxiety and insomnia syndrome, social dysfunction syndrome and depression syndrome. To measure the general health of the subjects, the 4-point Likert scale was used, which is set from the lowest to the highest and with scores (0, 1, 2, and 3). The total score earned by a person varies from zero to 84. In this method, the sum of scores lower, indicates better general health and high scores reflect disorder. Ebrahimi et al., reported Cronbach's alpha for questionnaire to be 0.97. The Beck depression questionnaire was used to measure depression, which is the most
appropriate instrument for measuring depression. There are 21 questions in this questionnaire with 4 options, which we score from zero to 3, respectively. The total score is obtained from the sum of the selected option scores. Degrees of depression are: 0-9 points for the degree of depression, 10-16% mild depression, 29-30 medium depression, 63-30 severe depression (28). Schneider’s life expectancy questionnaire has been developed to measure life expectancy. of the 12 statements, four phrases are developed to measure factor thinking, four phrases measure strategic thinking and four terms are deviating (29). The method of scoring it is based on the 5-range Likert scale. In order to obtain the overall score of the questionnaire, the total points of each question are calculated together. Higher scores will indicate a greater life expectancy in the respondent, and vice versa. Its validity is 0.80 and the reliability is reported to be 0.50 to 0.60. (30). Mean and standard deviation were used for descriptive statistics and U Mann Whitney test was used for inferential statistics, in which the significance level was P ≤ 0.05. All data analysis was done using SPSS software version 21.

Results

The characteristics of the subjects are shown in Table 1. Also, the study of normal distribution of data using Kalmogorov-Smirnov test showed that the data of this study have a natural distribution. The results of U Mann-Whitney test on the overall score of mental health of the active and inactive addicts in Table 2 show that there is a significant difference between the mental health of active and inactive people (p= 0.008), so that active improved addicts have a significantly better mental health status than their inactive counterparts. In terms of life expectancy, the results showed that there was no significant difference between the life expectancy of active and inactive addicts (p= 0.36). Also, the results showed that there was a significant difference between the level of depression of active and inactive addicts (p= 0.001). Inactive improved addicts are significantly more depressed than their active counterparts. In addition, the percentage of depression in both active and inactive addicts is shown in Table 3.

<table>
<thead>
<tr>
<th>Table1. Demographic characteristics of active and inactive addicts (mean ± standard deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Age (Year)</td>
</tr>
<tr>
<td>Weight (Kg)</td>
</tr>
<tr>
<td>Height (Cm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table2. U Mann-Whitney test results on the level of mental health, life expectancy and depression of active and inactive addicts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Mental Health</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Life Expectancy</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Depression</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

* shows a significant difference between the two means
Discussion

The purpose of this study was to investigate the effect of exercise activity on mental health, depression and life expectancy of improved addicts. The findings of the present study indicate that active improved addicts have significantly better mental health than their inactive counterparts. The results of some studies are in line with this finding. As an example, Arab Ameri et al. (2014), conducted a study on the effect of physical activity in water and drought on general health and some factors of physical fitness that affect the balance of elderly women. Their results showed that performing exercise protocol in water would increase general health (31). In the study of Kashfi et al. (2013), the role of sport activity and gender in mental health of the staff of the Red Crescent (Helal-e- ahmar) population was studied. Their results indicated that the mental health of athlete women and men was significantly higher than that of non-athlete's group of the same sex (21). The findings of Mousavi Rad and Keshavarz (2015) also confirm the significant relationship between exercise and mental health (32). In another study by Tofighi et al. (2014), it was found that physical activity contributes to an increase in the general health of students (20). Soltani et al. And Ramezani Nejad et al. reported that sport activity has significantly increased the general health level, which is consistent with the present study (16, 33). However, the study of Anbari et al. (2012) does not match this finding (34). They conducted a study on the effect of the eight-week general sport model on physical fitness and general health of male employees. Their results indicated that there was no significant relationship between exercise and general health. The reason for this inconsistency can be the difference in the type of statistical population and the amount of exercise. In the study of Anburi et al., the staff were used as a statistical sample. Also, their subjects performed sports activities in an interventional manner for only eight weeks, while in the present study, people who were continuously engaged in sports activities were used. In addition, the research findings show that sport activity is inversely related to depression. This means that the rate of depression in active improved addicts is significantly lower than the inactive group. The results of some studies are in line with this finding. For example, Kargarfard et al. (2011), in a study that aimed to examine the effects of exercise therapy in water on the quality of life, anxiety and depression in patients with hemophilia concluded that exercising in water can help to improve the quality of life, anxiety and depression in those patients (22). Zarepour et al. (2013) suggest that there is a significant difference between athlete and non-athlete women in terms of depression. This means that the mean score of depression in athlete's women is lower than non-athlete women (17). Hekmatipour et al. (2013) investigated the effect of regular exercise on depression among elderly people and concluded that there is a significant difference between the mean scores of depression in two groups of control and intervention (35). Also, Motaghi reported that there is a significant relationship between sport activity and depression (23). According to Hekmatipour et al., in a study by Donohue (2004), active students are more likely to experience impulsivity and psychosis compared to their inactive counterparts. This finding is not consistent with the findings of

<table>
<thead>
<tr>
<th>Group</th>
<th>Severe Depression</th>
<th>Moderate Depression</th>
<th>Mild Depression</th>
<th>No Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Addicts</td>
<td>% 82.35</td>
<td>% 5.88</td>
<td>% 11.76</td>
<td>% 0.00</td>
</tr>
<tr>
<td>Inactive Addicts</td>
<td>% 46.15</td>
<td>% 23.07</td>
<td>% 23.07</td>
<td>% 7.69</td>
</tr>
</tbody>
</table>
this study. This inconsistency can be due to cultural differences, age group and type of statistical population (35). It was also found that active improved addicts had a higher life expectancy than the inactive group, but this finding was not statistically significant. According to Sanai et al. the result of the study by Christiane et al. (2007) is consistent with the finding of this research. In their study, there was no significant relationship between physical activity and life expectancy (18). But the results of most studies confirm the positive and significant effect of exercise on life expectancy. A study showed that if physical inactivity is eliminated from society, life expectancy in the world is increased by 0.68 years (25). Another study reported that a group of subjects with at least 15 minutes of physical activity had a longer life expectancy of 3 years than the inactive group. In other words, this study showed that physical activity increases life expectancy (36). In addition, another study suggests that people who have even a low physical activity have a higher life expectancy than normal people (26). Findings from a study in Brazil show that eliminating the state of physical inactivity and initiating activities in individuals increases life expectancy by 0.31 years (37). In Iran, Sanai et al. (2013) studied the effect of physical activity on the quality of life and life expectancy of elderly people in Mazandaran province. Their findings also indicate a significant effect of physical activity on the amount of life expectancy (18). Studies show that body and mind interact with each other. Considering the direct relationship between the body's health and mental health, in order to explain the results, physiological functions and social functions of sports activities can be mentioned. Physiological activity of the exercise can lead to certain changes; for example, reducing cardiovascular responses to physical stress may be associated with a reduction in the response to emotional stress, which ultimately reduces mental disorders in response to such stresses (21). Together with exercise, the levels of serotonin (effective hormone in mood regeneration) and endorphins (natural pain relief medications) are increased, which also reduce depression (17). Sports activities also have the potential to help improve some fitness factors, reduce BMI, reduce cholesterol and triglyceride, and improve some cardiovascular diseases, such as systolic and diastolic blood pressure (38, 39). People engaged in sports activities engage in social relationships and, as a result, get out of seclusion and isolation, which can help reduce depression and increase mental health. Exercise also reveals mental talents, and individuals can overcome their social problems and develop indicators such as mood, confidence, self-esteem, sociability, and social adjustment (40, 41). In addition, sports participation can bring a person with higher levels of satisfaction with life and happiness (42, 43).

**Conclusion**

According to the results of the research, it seems that exercise and physical activity can increase the mental health and reduce the depression of improved addicts; therefore, considering the effectiveness of exercise on mental health and depression, it is suggested to institutionalize exercise and increase and improve the sports facilities in order to increase the mental health and reduce the depression of improved addicts. This can lead to their faster returns to society, which ultimately increases the health of the community.

**Ethical issues**

No applicable.

**Authors’ contributions**

All authors equally contributed to the writing and revision of this paper.

**Acknowledgments**

The present article is based on the results of a research project approved by Jahrom University with the JU-1395/114 code. In this
vein, the authors of this article express their gratitude to the Vice-Chancellor for Research in Jahrom University, as well as the Welfare Office of Jahrom City, and all the respectable subjects accompanying the researchers.

References
12. Amiri M. Depression is one of the most common psychological disorders that comorbid with substance use disorders. Res Addict. 2009; 3 (9): 101-114.
18. Zardoshtian S, Norouzi R. The effect of physical activity on quality of life and life


