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The Impact of 8 Weeks Morning Exercise on Some Physical, Physiological and Psychological Indicators of Young Men

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ABSTRACT

The purpose of this study was investigating the impact of 8 weeks' morning exercise on some physical, physiological, and psychological indicators of young men. The method of the study was Semi experimental and applied. The number of 24 non-athlete's young men was selected in accessible way in Malayer city.12 person was placed in the experimental group (the mean of age 27.27, weight 81.12 kg, stature 177.5 cm) and 12 persons were placed in the control group (with means of age ,27.33, weight ,81.18, stature 177.5). Pre-test and post-test measurements include Vo2max, height, weight, and mental health questionnaire (GHQ-28) was done. One-way covariance analysis ANCOVA was used for testing research hypothesis and Kolmogrov-Smirnov test in the SPSS software (version 23) was used for normality of the data. the average cardiovascular endurance of experimental group before practice was 65.35 (ml / kg/min) that after exercise with 38.18 increases (ml/kg/min) was meaningful at (P = 0.05) Body mass index (BMI) of experimental group before exercise was 25.39 kilograms per square meter that after exercise had 21.07 meaningful reduce in (P = 0.05) level. Eight weeks of aerobic training, running and exercising of mental health indicators on physical health (P = 0.05) had a significant effect and had meaningful impact on anxiety and sleep disorders, social function and depression level and had meaningful impact on total score of mental health (P=0.05). Result of research showed that 8 weeks' morning exercise had not meaningful impact on physical, physiological, and psychological indicators.

KEY WORDS: *Morning Exercise, Physical Indicators, Physiological Indicators, Mental Health, Young Men*

INTRODUCTION

Physical readiness is an energetic status of energy costs that enables person to do his daily activities without early fatigue and participate in leisure activities with motivation and finally cope with anxiety-causing situations. According to the scientists and specialist physicians, physical activity can increase cardiovascular efficiency. This is done by raising working potential of heart and lungs to reduce blood pressure in people with high blood pressure and reduce harmful blood fats [1]. Today public sport, as morning exercise in the form of walking and leniency, along with its champion aspect and due to the extent of different people and easy it for society is taken into consideration by most people. Also, due to the mechanization of life, physical activity is including efficient practices that will lead people to physical and mental health [2,3]. At the beginning of the third millennium with industry and technology progress and requires development to more communication, humans have been imposed in many different stressors situations to the extent that their effective growth and development are faced with long obstacles and needs to psychological and subjective challenges to meet their needs. According to the World Health Organization (WHO) in two upcoming decades non-communicable diseases such as mental illness will be increased and will be the most important factors for premature death and will be substitute for debilitating infectious and contagious diseases [5]. Health in a general view, includes different aspects of social-mental and physical and has relationship with the environment. Mental health is the effectiveness and performance of psychological that fits to the human [6] and is part of the overall health of the society and every culture according to its criteria is looking for mental health. The purpose of mental health is the health of special aspects of human such as intelligence, mind, mood and thinking that also affect the physical health [7]. Hawker (2012) in a research suggested that encouraging students to physical activity due to increasing confidence, leads to the risk of reducing anxiety and depression [6]. Exercise for mental health is an effective intervention to reduce stress [8]. Physical activity causes to biochemical and biological changes in the body that lead to improved mental health and athletes have better mental health than non-athletes [10]. Exercise is an effective intervention on physical and mental health [11]. lack of mental health is the inhibitor of progress of the person and inability to perform the tasks that he/she is going to perform and will cause dysfunction in the health and progress of the society [12] and mental health will be created when blood flow to the brain correctly. Evidences suggests that the ability of the mind, such as the ability to learn and progress, with increased by fitness increasing [13]. A regular exercise has physical and mental benefits. Aerobic exercise increases cardiovascular readiness, which protects individuals from cardiovascular diseases. High triglycerides and cholesterol and low cardiovascular cause cardiovascular diseases and reduce people's lives. According to research Noordsy & Pajonk (2012) exercise reduces cholesterol and triglycerides in people who suffering from schizophrenia and increased their cardiovascular fitness, which is effective in increasing the live of the patients [14].

Cardiovascular disease (CVD) is one of the main causes of death in the world. Although genetic factors and age have special importance at Diagnosis of this disease but other factors, such as hypertension, hypercholesterolemia, diabetes, and lifestyle are factors of diagnosing cardiovascular diseases. Correct life style such as not smoking, proper nutrition and an active lifestyle have important role in the prevention or treatment of cardiovascular diseases and improve them [15] also, determine the maximum of oxygen consumption is considered to determine

cardiovascular fitness [16]. In recent decades, the prevalence of obesity has increased around the world and obesity is a risk factor for getting disease and hypertension, arthritis, cancer, type 2 diabetes, and cardiovascular diseases [17]. In addition, has a considerable impact in decline confidence, physical performance, and mental, emotional, and social relationships. Inactivity is considered an important factor in obesity [18]. Given that sport is one of the interventions that affect both the body and the mental [11] in some studies it is stated that, the students physical activity has decreased in recent years [19] and sedentary is one of the factors of obesity and chronic diseases such as cardiovascular disease [18, 21] thus the generalization of exercise and do it continuously and individual and mass sports including aerobic exercise like simple and low-cost sports such as jogging and jumping rope will cause the public health [13]. Aerobic exercise is of sports that have positive effect on overall health. In terms of physical health, active lifestyle versus sedentary lifestyle is recommended to avoid heart attacks and heart disease. Physical activities that have moderate to severe intensity and done regularly are recommended to people to reduce heart attacks and heart disease [21]. According to the mentioned information and the importance of all aspects of health (Physical, physiological, and psychological and social) of young men at present era due to the increased psychosocial pressures exerted on them [9] doing further research in this area is essential.

MATERIAL AND METHODS

Participants: A total of 24 young men in the city of Malayer were selected at the summer of 2016 as accessible method. 12 people were placed in the experimental group (the mean of age 27.27, weight 81.12 kg, stature 177.5 cm) and 12 people were placed in the control group (with means of age, 27.33, weight, 81.18, stature 177.5). Participants completed consent form and those who had specific diseases such as heart disease were excluded.

The method for doing research: at first participants completed consent form and those who had specific diseases such as heart disease were excluded. Cooper test, test of weight and height were used to measure physiological indicators of cardiovascular endurance and body mass index. Maximum oxygen consumption was calculated based on the Cooper test for men in order that Cardio respiratory fitness of participants to be studied. Mental health questionnaire of (GHQ-28) was used to measure psychological indicator of mental health. Measurements of the indicators were performed in the pre-test and post-test and then the data collected were analyzed. After measurements of height and weight to measure BMI the formula of body weight (kg) divided by height in squared meters (m2) was used and maximum oxygen consumption was calculated based on Pele Cooper's test (19).

Cooper formula: Vo2max (ml/kg/min) $=\frac{the\ traveled\ distance\ 504.9}{44.73}$

Group exercise was used in three times a week for 8 weeks and each session rate monitor (polar Belt) was used to measure heart rate. The exercise program of experimental group was done includes morning exercise for 3 days a week and for 8 weeks. While the control group continued their daily lives without regular physical activity. The training program was beginning at 6 am and continued for 60 minutes. The participants after 15-minute warm-up has done 30 minutes' aerobic rhythmic movements with an intensity of 55 to 75 percent of maximum heart rate

(Heart rate range for 5 ± error for each subject was determined and displayed by the meter rate, continuity of heart rate in the target domain and how to do exercises properly supervised was controlled, the participants after doing the main program, was doing 15 minutes as cool of in the jungle park of Sifieh in Malayer city.

Statistical method: Of the 24 subjects participating in the study, 12 patients were in the experimental group and 12 patients were in the control group which in table 1. Descriptive indicators of cardiovascular endurance and body mass index are shown. According to Table 1, mean experimental group before cardiovascular endurance exercises, was 65.35 (ml / kg / min) that after the exercise increased to 18.38 (ml / kg / min). Body mass index of experimental group before practice, was 39.25 kilograms per square meter that after practice reduced to 21.07 Kilograms per square meter.

RESULTS

Table-1: Descriptive indicators of cardiovascular endurance (ml / kg / min) and BMI (Body Mass Index) kilograms per square meter

Indicators	Period	Group	Indicators of Descriptive Statistics	
Cardiovascular endurance (ml / kg / min)	Before practice	Experiment	35.65	12.25
		control	34.21	22.11
	After practice	Experiment	38.18	2.05
		control	35.18	7.18
BMI (body mass index)	Before practice	Experiment	25.39	2.6
		control	25.10	2.6
	After practice	Experiment	21.07	2.24
		control	25.09	2.7

Based on the significant level of the test the effect of group significance level test is increased at (P = 0.05), cardiovascular endurance subjects after exercise and the significance of BMI after practice was 21.07 that indicating the significance level at (P = 0.05), on selected aerobic exercise on body mass index.

According to values of significance level the impact of mental health indicators before practice concluded that their values had impact on the value of indexes after practice. Based on significant levels of the tests the impact of eight weeks of aerobic training, running and exercising test had a significant effect on physical health (P = 0.05), and had meaningful impact on anxiety and sleep disorders at the level of (P=0.05), social performance at (P=0.05), and the value of depressing at level of (P=0.05), and had meaningful impact on total score of mental health (P=0.05).

Table-2: Descriptive indicators of mental health before and after 8 weeks aerobic training, running and exercising

Mental health indicators	**period**	**group**	**Indicators of descriptive statistics**	
			mean	**SD**
physical health	Before practice	Experiment	6	2
		control	7	4
	After practice	Experiment	3	3
		control	6	4
anxiety and sleep disorder	Before practice	Experiment	6	2
		control	7	5
	After practice	Experiment	3	4
		control	7	6
Social performance	Before practice	Experiment	7	2
		control	8	3
	After practice	Experiment	4	3
		control	8	1
depression	Before practice	Experiment	6	3
		control	5	4
	After practice	Experiment	3	4
		control	5	6
Total score	Before practice	Experiment	25	9
		control	27	16
	After practice	Experiment	13	14
		control	26	17

DISCUSSION AND CONCLUSION

Sedentary is one of the factors of obesity and chronic diseases such as cardiovascular disease [18, 21]. Aerobic exercise such as running and exercising along with rhythm and repetition with involving large muscles leads to increasing cardiovascular endurance. In addition, aerobic exercise and doing physical activity in addition to physical health affects mental health and there is relationship between these two [11]. As Goodwin in the 2003 survey revealed negative relationship between mental disorders such as depression and anxiety and physical activity among American adults [23] with advances in technology and industry, people are facing with psychological challenges that exercise is an effective intervention to reduce these challenges and psychological factors [4]. According to the findings 8 weeks of aerobic training although caused the increase in cardiovascular endurance and had a significant effect on cardiovascular endurance and 8 weeks of aerobic training had a significant effect on body mass index. These findings are consistent with some studies and are inconsistent with some which among them we can refer to Hossein Pour et al at 2009 that the result indicates meaningful improvement of cardiovascular index [24]. The effect of changes in volume and intensity aerobic training on cardio respiratory endurance and resting heart rate of young men was studied by Gholami and colleagues in 2012 and results indicated that aerobic exercises had meaningful impact on Vo2max of exercise groups [26].

Farsani and Rezaee Mnesh (2011) studied the impact of 6 weeks of aerobic periodic training on some of the blood lipids and maximal oxygen uptake. The results showed that aerobic training has a positive effect on some blood lipids and improve maximum oxygen uptake [27]. Sloan et al in a study in 2009 stated that aerobic training significantly increased the subjects' aerobic capacity and heart rate. Aerobic exercise increases heart automatic control, but gender plays an important role in protecting the heart by exercise [28]. Pribis et al (2010) studied obesity, body mass index and physical fitness of female and male students during 1998 and 2008. The purpose of this study was the relationship of physical fitness with obesity of body and students' body mass index. The purpose of physical activity that there was an indirect relationship between the maximum of the maximum of oxygen consumption and obesity of male and female students and physical fitness of students has decreased during the last 13 years and their body fat has increased [29]. Stressing between 2005 and 2008 were examined a total of 117 patients with schizophrenia (41% male) in the schizophrenia patients center to measure cardio respiratory fitness and physical performance capacity in patients by calculating their maximal oxygen uptake. Bruce protocol was used to assess cardio respiratory fitness. The results indicated that those who were fatter in all age groups had lower cardio respiratory fitness and low cardio respiratory fitness of schizophrenia patients who were obese was risk factors for cardiovascular disease in these patients [30]. In other studies, Noordsy & Pajonk (2012) studied the effect of physical activity on cardiovascular health of schizophrenia patients. The results showed that cardiovascular fitness of schizophrenia patients in the exercise group was higher than therapy professional group and exercise were recommended for the treatment of schizophrenia patients to improve their lives [14]. According to the mentioned researches, aerobic exercise had impact on cardiovascular endurance that was incompatible with the results of this study which the cause of this lack of consistent may be short-term training period and a short time of each training session and insufficient intensity and volume of exercise. In conducted researches exercise with moderate-intensity

has been lead to increase cardiovascular fitness. Eight weeks of aerobic exercise and mental health, according to the findings of the study eight weeks of aerobic training had significant effect on improving mental health which is consistent with the findings of internal and external investigations. Meanwhile we can mention Boostani and Sayari at 2011that the results of their research show the positive effects of exercise on psychological factors [31]. Kiani et al (2011) stated that there is meaningful difference between mental health and happiness of athletes and non-athletes. Physical activity leads to biological and biochemical activity in the body that will improve mental health and athletes have better mental health than non-athletes [10]. Exercise especially as a group has greater impact on improving mental health. In the Asztalos and colleagues (2010) participatory exercise reduces stress and distress [1]. In the Hawkar research (2012) encourage nursing students to physical activity due to increase confidence, reduced the risk of anxiety and depression in the students [8].

CONCLUSION

According to the results of the present study mental health and peak aerobic power and body mass index in young men after 8 weeks of aerobic training was improved. Biochemical and physiological changes can improve mental and psychological health of participants. The secretion of beta-endorphins during exercise is a biochemical agent in reducing depression and creates a good mood in people [33]. Fitness and physical ability leads boost confidence and making positive psychological changes that has impact on improving the mental health impact [34]. In this study, cardio respiratory fitness of participants was significant which its reason may be intensity, duration, and period of exercise.

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