

The effect of eight weeks selected aerobic exercise on the lifestyle, blood pressure and heart rate in Darrehshahr Islamic Azad university girl students

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ABSTRACT: The purpose of the current study is the comparison and relationship of eight weeks aerobic with lifestyle, blood pressure and heart rate of girl's university students of Islamic Azad University of Darrehshahr city. In this survey, 35 girl's students who were studying in the second semester participated in the study. The mean age of subjects, was 23.5 ± 3.51 year, 57.13 ± 4.69 kg, 157.23 ± 3.92 cm, and 23.01 ± 1.22 kg/m² respectively and were randomly divided into control and experimental groups. In a pretest the lifestyle of participant was identified via Breslow questionnaire; the blood pressure of test takers was done by a medical pressure tool and medical ear tool. The exercise protocols determined for participants of the study were; making warm the body for ten minutes, doing Ellestad aerobic exercise with intensity of heart rate from 50 to 70 with the time of nearly 15 to 30 minutes each section of activity, in eight weeks and two sessions in each week. Cooling the body and returning to the previous position for 10 to 15 minutes. By using T-test and Pearson correlation coefficient the data were analyzed ($P < 0.05$). The lifestyle of the test takers didn't change meaningfully before pretest to after post test. But the blood pressure change was meaningful, i.e. affected by eight weeks exercise decreased ($P < 0.05$), but the heart rate of the test takers didn't show a meaningful difference ($P > 0.05$). It was also known that there was not a meaningful relationship between the lifestyle and blood pressure before the survey. But after aerobic exercise this relationship was meaningful ($P < 0.05$). There was not a meaningful relationship between lifestyle and heart rate before and after aerobic exercise ($P > 0.05$). It is understood that eight weeks aerobic exercise for changing university student's lifestyle has not been adequate and nutrition and exercise or sporting activities are vital and important for promoting hygienic behaviors.

Keywords: aerobic exercise, lifestyle, blood pressure, heart rate, girl students.

INTRODUCTION

With industrialization and more globalization phenomenon, we perceive the increase of lifelong and the shift in people life in the twenty first century. Among the result of these changes are alteration in diseases patterns and spread of chronic diseases. Breaking out and spreading these disease with dangerous factors is related to life- styles such as improper diet, obesity, smoking and lack of physical activities (Avazeh, 2010). Today, it is believed that almost 70 percent of the diseases are related to the individuals life- style, in fact, many ailments such as heart and muscular-movement diseases are directly or indirectly affected by individuals' life style or at least the people life-style affects it's stability or severity Salem, et al (2008). Despite signification development in preventing and the cure of heart and vessel disease, they are still among one number disease causing the death of men and women in the world around. Statistics show than women are more affected by these diseases than men. It was considered as a disease affecting men till 1970 but today this consideration has been reversed. World Health organization (WHO) believes that with the shift in life- style we can stand against may dangerous factors causing death (Avazeh, 2010). The importance of life- style is so important that today a new branch of medical science named as "life style medical profession" has been created which has an application in preventing the diseases. On this basis,

a healthy life- style cover and the related factors such as nutrition, exercise, stress control a smoking cut off and the likes (Avazeh, 2010). The role of personal hygienic behaviors such as diet and proper exercise has been recognized in reducing the diseases and death. So many hygienic problems originate from chronic diseases which are the result of personal behaviors. More than 1/3 percent of all the deaths is as the result of the spread of so many new threatening to human health that most of them are as the result of social and individual incorrect life style (Avazeh, 2010). The spread of dangerous CVD is worrying. The result of Wilson experiment shows that 63.7 percent of men and 61.4 percent of women have at least one of the threatening dangerous factors of heart disease such as high blood pressure, cigarette, having higher than normal blood cholesterol obesity and diabetic. These show that a shift in life- style for removing the threatening factors is necessary (Avazeh, ,2010). Researches show that the most important health threatening factors are: improper diet, inactiveness, low physical movement, and smoking which culminate in diseases like heart, hypertension, obesity, diabetic (type 2), tooth decay, brain failure and some of the cancers (Avazeh, 2010). WHO make attempts to provide the possible ways of staying against and controlling the diseases such as heart and vessel diseases (Avazeh, 2010). and one of the main factors of causing death in the world (Avazeh, 2010). High blood pressure is one of the main factors of Atherosclerosis and cardio vascular diseases. In most cases, the main reason for blood pressure is unknown, but factors such as obesity have a key role in this disease(Avazeh, 2010). Active life- style is among the factors affecting health. The regular physical activities among women are seen less in comparison to men and this decrease they become older. The low level of body exercise and activities will result in flexibility loss, vessel weakness, overweight, obesity, precocious death as the result of heart vascular diseases, diabetic and cancer (Avazeh, 2010). Some of the studies indicated that the relationship been body activities level and blood pressure with having family heart diseases shifts (Ostaji, 2006). The decrease in blood pressure in normal persons is of highly importance for cardio vascular diseases prevention. Exercise activities can be one of the non-medical remedies for preventing and reducing the blood pressure problems in public (Ostaji, 2006). Aerobic exercise activities can have effects on reducing blood pressure as well (Ostaji, 2006). It has been argued that the low blood pressure as the result of exercise activities will result in low resting blood pressure (Ostaji, 2006). The low blood pressure mechanism has not been exactly measured yet. A lot of factors such as Simpatico and Parasympatic, Baroseptors, may have roles in its creation (Estebarsari, 2005).So, the need to increase of knowledge in the field of reaction after blood pressure practice in all persons with various blood pressure levels to more important variables like intensity, volume and period is necessary. In the other hand, the heart rate after exercise activities is important (Ostaji, 2006).. However, with regard to little researches on aerobic impact upon blood pressure and heart rate of women, the current paper aimed at investigating the answer to the question: what effect dose the aerobic exercise has on heart rate of university girl student? In the United States of America more than one million and half die as the result of cardio vascular diseases annually. American heart association reported the death of women as the result of cardio-vascular diseases five percent more than men in 2007. Meanwhile, the sudden death followed by apoplexy of women was higher than men. High blood pressure has a direct impact upon cardio vascular (Estebarsari, 2005).Today, high blood pressure is considered as the most important factor affecting cardio vascular diseases which is a difficult issue in the world (Ostaji, 2006). Researchers reported that high blood pressure cannot be controlled anymore, so that in the twenty past years one billion people have been affected by these diseases (Ostaji, 2006). Cardio vascular diseases as one of the factors causing the death in the world are as the result of high blood pressure and the kind of life- style like eating more fruits and vegetables have reduced the danger of cardio vascular diseases and as a result the blood pressure has reduced (Estebarsari, 2005). Proper physical activities can decrease the probable danger of cardio-vascular diseases from 20 to 40 percent totally. Exercise has not been determined as the most effective factors as a remedy for lack of movement. Some of the researchers know six weeks aerobic exercise as a factor for meaningful reduction in heart rate (Estebarsari, 2005). Since, no exact method has not been done with regard to eight weeks selected aerobic exercise on heart rate and life- style, specially among women and since cardio vascular diseases are considered as a threat for women in the world and since university students constitute a large sample population in each country, the women in developing countries seek for a remedy. Therefore, the selections of each life- style in the diet and body activities not only affect themselves but also the other groups of people. Therefore, the current study is an attempt to investigate the life- style of the university girl students of Darrehshahr and its relationship with blood pressure and heart rate and the effect of eight weeks selected aerobic exercise on their heart and vessel so that it can change the life- style and prevent from diseases in the society and individuals.

METHODOLOGY

Experiments

The selected sample consisted of Azad University girl students of Darrehshahr (the range of age from 18 to 25) who were studying in the first semester of 89.90(2013). 35 were selected randomly as the subjects of the study. They were all female and were divided into two groups of experimental (Avazeh, 2010)and control (Borhani,

2007) group. This semi-experimental study and is an applied research. Prior to conducting the study, the plan and the purpose of the research were discussed with university authorities. The 35 subjects were selected from among the university students with the observation of the researcher. However, the blood pressures of the subject were measured secretly with a barometer which was made of Japan (ALPK2). A questionnaire based on (Breslow, 1972) life study was provided was also determined. Meanwhile, the height and weight of the participants was also measured. After conducting the research and measuring the variables in both control and experimental groups an eight selected weeks aerobic exercise was conducted the practiced it for eight weeks. After finishing the aerobic exercises both control and experimental group participated in a post-test. In this test the blood pressure and heart rate of the all participants while resting was measured and they completed the questionnaire. Meanwhile, the weight of the subjects was also determined.

Selected aerobic exercise

In investigation of the selection of aerobic exercise, the aerobic exercises began with the intensity of 50% of heart rate of eight weeks selected exercises eight week sessions each week one session. After testing the participants and measuring their heart rate and the heart rate in relaxed mood, the experimental group started the exercises and extended the heart beat to 70%. Before the aerobic exercise program, in order to raise general awareness they used 3 sessions for the physical preparation.

The main aerobic exercise program started in the way that after 10 minute warming prior to each session and doing light activities for controlling safety they started the mine practice program which included Elstad aerobic test in 15 minutes and with 50% heart rate (table 1-11) the mine program focused on running in an open saloon with 30-45 temperature centigrade. The intensity control during exercises with the use of heart rate (THR) was estimated with use of Kronen formula following formula was used $220 - \text{age} = \text{HR background}$.

The Kronen formula is the difference between the heart beat while resting HR and heart rate $\text{HRR} = \text{HR}_{\text{HR}}$, Target HR = HR rest (HRR fraction) $(\text{HR}_{\text{max_HR rest}})$ The experimental persons were trained to control their heart rate while running in 15 seconds. After finishing 15 seconds running program they returned to the normal and original mood (Avazeh, 2010).

Life- style measurement

To evaluate the testers life- style the Brselow questionnaire sample was used (Belloc et al 1972). this questionnaire included 7 question about the usual life- styles like enough sleep eating breakfast not smoking not using alcoholic drink doing regular exercises.

The total score of the questionnaire was 7 in which each positive response was given on and each negative response zero. meanwhile this questionnaire was provided by Borslo and Bellock in 1972. it has been in Iran. its reliability has been estimated by Alf Cranach $r=0/85(19)$.

Blood pressure measurement

The blood pressure of the subjects was measure via a barometer model ALPK2 made in Japan it has a round surface which includes numbers which show the blood pressure amount the blood pressure of each girl student was done on her right arm after resting. the testers were asked not to drink or eat anything ten minutes before they go to sleep measuring heart

The heart rate was measured in 15 seconds around neck vessels to measure the heart rate exactly they were asked to measure their heart rate in the morning and before arising from bed.

Measuring the height and weight

The height of the participants was measured with a special band. By using a digital scale their weight was measured. BMI estimated by dividing the height. The BMI was less than 20 to 24.9 as the far (6).

Statistic methods

The results of this study were as the average disperses the correlation and relationship between various factors was done by Pearson and t-test.

To analyze the data the SPSS18 software was used ($P \leq 0.05$) as the meaningful difference level.

Findings

The life- style of all the subjects was evaluated by life-style Breslau questionnaire (1972). The correlative t-test showed that the life-style and heart rate after eight weeks' selected exercise didn't change meaningfully. But the blood pressure was affected and reduced to a lower level. The person correlation coefficient showed that there was a meaningful difference between the Breslau life- style and blood pressure after the aerobic exercise. But there wasn't a meaning full difference between Breslau life- style and the heart rate after the aerobic exercises. The result also revealed that the blood pressure after eight weeks selected

exercises reduced. The life- style of testers changed a little but it was not meaning full. The mean and standard deviations are shown in Table 1.

RESULTS AND CONCLUSION

To prove how the treatment is effective the subjects who were girl students were selected in Darrehshahr Islamic Azad University. In order to conduct the study, two groups as the experimental and control group were studied in the outset of the study. After conducting a pretest, the results were measured and analyzed and the data were obtained. Based on the data they were grouped into two groups. In the current paper, the comparison has been aimed at the investigation of the eight weeks selected exercises related to aerobic exercises, blood pressure and heart rate of Islamic Azad University of Darrehshahr girl students, the results showed that 5.71 percent of the subjects were fat and 22.85 percent were overweight. Meanwhile, the life-style of the control group (4.55 versus 4.80) and experimental (4.60 versus 5.26) showed that Breslau life-style from pre to post test changed a little. The results were analyzed via SPSS. However, the results revealed that there was no meaningful difference between the groups after the intended treatment.

With regard to the obtained results obtained it is understood that the results of this study are in line with others (1, 5 and 7). There was no relationship between the life- style and heart rate after the aerobic exercises. Therefore, it is not line with(Naimi,2002), Mirheidari and Takali(2003) , (Mohebi ,2009).

The result of life-style of subjects and the impact of eight weeks selected on it

The findings of this paper show that university girl students life-style is average. The results emphasize the involvement in these exercises. The results of this study were in line with Farmanbar (2005),(Mansoori ,2009) and showed that most students lack a proper or special life-style study. The results are also in line with (Qorbani ,2009) studies that reported 24/1 percent of university students do not have a desirable life-style (Avazeh, 2010)). According to the obtained result in this study among the testers 60 percent had sleep abnormality, 85 percent had not a natural weight. The result of this research showed that is in line with (Kristi ,2004) with regard to smoking and was not in with (Mansoorian ,2009) in which ten percent of the students smoked. Therefore, with regard to the result obtained it is necessary that for desirable result they do 2 sessions a week the aerobic exercises.

The effect of eight weeks selected aerobic exercises on blood pressure of the subjects

The findings revealed that the experimental persons had an inactive life-style prior to the treatment. The Pearson correlation showed that there was a meaningful relationship between life-style and blood pressure of the subjects. The findings are in line with (Tesyofis ,2010) . This study is also in line with (Kernilessen ,2009) .The finding of (Avazeh, 2010) also verifies our findings of (Avazeh, 2010). The result of this study with regard to life study and blood pressure of the testers are in line with Mehrabani and Demirchi (2009), Mohammadi Zeidi et al (2005), (Skates ,2010) J.yana and Dimopolas (2010), Anderson et al (1999). The results of eight weeks selected exercises on heart rate of the testers In a research done by (Naimi,2002) like our research, the heart rate didn't change meaningfully(Avazeh, ,2010). The results of the study are in line (with Di ,1998) (Avazeh, 2010). The findings of (Bilt ,1999) were not line with the current study finding.

3.3The effect of eight weeks selected aerobic exercises on heart rate of the subjects

The findings show that doing 8 weeks aerobic exercises by testing 50 to 70 percent of the subjects heart beat despite some shift but a meaningful change didn't happen. In Naimi research (2002) like our research, after 8 weeks aerobic exercise and testing the heart rate of 55 to 70 percent of the subjects no meaningful difference was seen (Avazeh, 2010).The results of this study were in line with Dei et al studies who found out that after 6 weeks power exercise and testing 60 to 70 percent of the subjects they didn't see a meaningful difference in heart rate (Avazeh, 2010). Billate et al findings were not in line with these studies (Avazeh, et al (2010). As it is seen, the time and tensely of aerobic exercises had different results with regard to heart rate.

Table 1. Mean and standard deviation of variables in the control group

SD	posttest		pretest		number	variant
	SD	average	SD	average		
17.66	171.55	16.28	187.25	20	Blood pressure	
5.54	77	9.42	80	20	Heart rate	
0.833	4.80	1.09	4.55	20	Life style	

Table 2. The mean and standard deviations of variables, blood pressure, heart rate and lifestyleSubjects in the experimental group pre-test and post-test is indicated.

posttest		pretest		number	variant
SD	average	SD	average		
15.9	177.06	16.23	187	15	Blood pressure
7.5	77	6.5	80	15	Heart rate
0.961	5.26	1.05	60.4	15	Life style

CONCLUSION

Totally, it seems that an active life-style is a proper factor in reducing the blood pressure especially among those with high blood pressure. Meanwhile, the findings of the present are logical representation. For showing the relationship between inactive life study and the diseases related to it.

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