

## **A study of the effect of an aerobic training program on the level of trait anxiety in high school students of Khauf County**

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### **ABSTRACT**

*In order to study the effect of an aerobic selected program on Anxiety Trait rate ,60 students at secondary school level from Khaf city –Khorasan province that were studying in the period 2010-2011. The students were put in two 30-member control and experimental groups in from of simple random. Experimental group passed an aerobic selected exercise for 18 sessions of 45 minutes in 6 weeks. first both groups were given Spielberger Anxiety Trait Questionnaire. They filled out questionnaires including registration of their personal particulars as height, weight and age. Then the acquired marks were analyzed by T text (related &connected )and also by pearson coefficient correlation and following results were observed: 1-Between anxiety triat marks in pre-test of post-test for experimental group a meaning difference was observed. 2- Between anxiety triat marks in post-test of control group and post-test for experimental group a meaning difference was observed. 3- Between anxiety triat marks in pre-test of post-test of control group no meaningful difference was observed.4-Between anxiety trait marks with height , weight and age at both control & experimental groups no meaningful relation was observed.*

**Key words:** Anxiety , Anxiety trait, Aerobic Training

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### **INTRODUCTION**

Human beings, though walking on the path of civilization, are vulnerable creatures, surrounded by difficulties and disorders. With much trepidation and fear, they search for strategies and methods to save themselves; strategies to keep them safe from perils and retrieve them their courage and rigor. On the other hand, studying the traces of life reveals that intellectual and spiritual progress cannot occur separately from the body and no permanent peace can dominate human societies when people are in an internal conflict with themselves [5].

Anxiety is one of the grave problems of contemporary societies and the twentieth century was named the age of anxiety [14]. According to the statistics provided by World Health Organization in 1993, half a billion people were inflicted with psychological disorders. Another research in the US revealed that during a month, 15.4% of all the patients were inflicted with psychological disorders and it was estimated that only 20% of this number were effectively treated [6].

One of the sciences that clearly and practically influence cultural and social dimensions is physical education that always pays special attention to physical activities and its effect on psychological issues. Many studies have been carried out on psychological disorders and the effect of physical activities on them. Due to the small sample

provided by previous research, the present study examines the effect of an aerobic exercise program on the trait anxiety of students.

## MATERIALS AND METHODS

The present research is experimental. After selecting the subjects using simple random sampling, they were divided into an experimental group and a control group. 30 subjects were assigned to each group and their trait anxiety was measured and compared before and after a six-week period of aerobic training administered to the experimental group.

### Population

The population of the present research consists of all the high school students of Khaf County that were studying in the period 2010-2011. The subjects had the following characteristics:

- The age of the subjects varies between 15 and 19.
- They have no record of regular participation in sports at the level of schools in the county.

### Instruments

The instruments of the research is Spielberger's State-Trait Anxiety Inventory (STAI) which was developed in 1970 with 20 questions related to state anxiety and 20 questions related to trait anxiety [14]. This questionnaire can measure the level of state and trait anxiety in different populations and more importantly, STAI is an instrument for mere measurement of anxiety and other psychological factors play no role in it. The STAI and STAIC (State-Trait Anxiety Inventory for Children) form of the inventory have been translated into many different languages and adapted and applied in many different cultures [14]. Carol Hazard reported that STAI has good measurement validity and that there is a high correlation between this inventory and other acceptable anxiety scales. For instance, there is a correlation coefficient of 79 to 83% between STAI and Taylor Manifest Anxiety Scale [13].

In addition to STAI, a scale was used to measure the weight of the subjects, a scaled wall for recording the height of the subjects, and a cardiac monitor for measuring heart rate.

### Statistical methods

After collecting the required information, the data were analyzed using Student's t-test and Pearson correlation coefficient.

### Terminology

Aerobic exercise: an activity that increases the need for oxygen. Thus, any exercise with long duration and high oxygen uptake is considered as an aerobic exercise [11].

Trait anxiety: the consistent predisposition of an individual to regard situations as stressful and threatening [14].

## RESULTS

T-test for independent and correlated samples as well as Pearson correlation coefficient were used for data analysis and the results are as follows:

- No significant difference was observed between the pretest scores of the control and the experimental group ( $\alpha = 5\%$ ;  $df = 58$ ).
- A significant difference was observed between the posttest results of the experimental and the control group ( $\alpha = 5\%$ ;  $df = 58$ ).
- There was a significant difference between the pretest and posttest scores of the experimental group ( $\alpha = 5\%$ ;  $df = 29$ ).
- No significant relationship was observed between trait anxiety and the height of the subjects in the control group ( $\alpha = 5\%$ ;  $df = 28$ ).
- No significant relationship was observed between trait anxiety and the height of the subjects in the experimental group ( $\alpha = 5\%$ ;  $df = 28$ ).
- No significant relationship was observed between trait anxiety and the age of the subjects in the control group ( $\alpha = 5\%$ ;  $df = 28$ ).
- No significant relationship was observed between trait anxiety and the age of the subjects in the experimental group ( $\alpha = 5\%$ ;  $df = 28$ ).
- No significant relationship was observed between trait anxiety and the weight of the subjects in the control group ( $\alpha = 5\%$ ;  $df = 28$ ).
- No significant relationship was observed between trait anxiety and the weight of the subjects in the experimental group ( $\alpha = 5\%$ ;  $df = 28$ ).

## DISCUSSION AND CONCLUSION

The results of the present research regarding the effect of aerobic exercise on trait anxiety are consistent with the following research studies: Ravizaveris reported that participation in yoga and tennis classes improves mental health [1]. Burden showed that participation in 5-to-10-weeks training programs reduces the electrical activity in the muscles of male adults [12]. Morgan et al. (1970) proved that chronic exercise creates a better psychological effect [17]. Morgan (1984) reported that physical activity can be effective in bolstering the psychological and emotional aspects of students [10]. Moreover, Sonstroem and Morgan (1989) reported that physical exercise leads not only to physical efficiency, but also increases self-esteem and reduces stress [3]. Burger (1984) showed that when people exercise with 75-90% maximal cardiac output for 30 minutes and for 4 or 5 days they will achieve the maximum physical and mental improvement [11]. Cooper believes that aerobic exercise is helpful for physical and mental well-being [12].

Further Rostad and Long showed that aerobic conditioning for 10 weeks leads to the reduced stress in male and female citizens [7]. Roth and Holmes (1987) found that moderate-intensity aerobic exercise reduces the anxiety of male and female college students [15]. Raglin and Morgan (1987) Raglin and Morgan (1987) compared participants in a quiet rest condition to those who took part in a 40-minute aerobic exercise routine. Participants in this study showed substantially decreased state anxiety after the exercise routine [16]. A research carried out by Khalaji (1995) showed that aerobic exercise reduces anxiety [4]. On the other hand, Martens et al. (1990) found no significant relationship between aerobic exercise and mental states [9]. In sum, a review of the literature and the results of the present research reveal that regular physical exercise reduces anxiety.

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