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## The effect of 8 weeks of aerobic training on primary dysmenorrhea

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### ABSTRACT

The propose of this study was to investigate the effect 8 Weeks of aerobic training on the physical and psychological symptoms of primary dysmenorrhea. The subjects, 30 female, mean age,  $22.86 \pm 4.56$ , height  $160.10 \pm 8.80$ , weight  $57.06 \pm 1.10$  and the first age period  $11.93 \pm 2.46$  and volunteered to participate in the research said. Moss questionnaire to collect raw data subjects before training, one month, and two months to complete. Statistical analysis of data was performed by analysis of variance with repeated measures. The results showed that physical symptoms ( $p=0.002$ ) and psychological symptoms ( $p=0.040$ ) were significantly lower. According to the research findings can be concluded that eight weeks aerobic exercise reduces sympathetic activity and increases blood flow to the uterus and increase the secretion of endorphins, physical and psychological symptoms of primary dysmenorrhea is lowered.

**Keywords:** Primary Dysmenorrhea, Aerobic Training.

### INTRODUCTION

Primary dysmenorrheal is one of the most common menstrual disorders [1]. Nearly 50% of women experience dysmenorrheal. 10% of women experience high dysmenorrheal and fail to life one to three days month [2]. The prevalence of dysmenorrhea in adolescents approximately 93-60% have been reported [3].

When adolescent girls are ovulatory cycles, primary dysmenorrhea begins during the teenage years, and its prevalence increases and then decreases with age spread [4]. Dysmenorrhea is also a major cause of impaired quality of life and social activities for young women [5]. In primary dysmenorrhea pain and started bleeding a few hours before it takes 72-12 hours. The symptoms can include nausea, vomiting secondary to pain, diarrhea, and rarely, syncope named [6].

The cause of primary dysmenorrhea, severe uterine contractions due to the secretion of prostaglandin F<sub>2</sub> is the endometrium during the menstrual cycle [7]. Almost 80 percent of women with dysmenorrhea, pain with use of prostaglandin inhibitors of pass [4]. Taking medications such non-steroidal anti-inflammatory drug and contraceptive pill have side effects are also in this period [8].

In recent years, various no pharmacologic methods have been used in the treatment of primary dysmenorrhea. Among the noninvasive methods of therapy, percutaneous electrical nerve stimulation and the use of vitamins can be named [9]. In the past 30 years has been able to exercise and regular physical activity as an effective method in the

treatment of primary dysmenorrhea should be considered [8]. Primary dysmenorrhea symptoms in female athletes due to hormonal changes affect the lining of the uterus. Exercise also increases the secretion of endorphins can act as a non-specific pain. Exercise also increases the secretion of endorphins can act as a non-specific pain [10,11] and psychological symptoms of depression in primary dysmenorrhea is reduced [12].

According to the Primary dysmenorrhea is a common problem in women and aerobic exercise can reduce the symptoms of primary dysmenorrhea. So in present study to the effect of 8 Weeks of aerobic training on the physical and psychological symptoms of primary dysmenorrhea.

## MATERIALS AND METHODS

This quasi-experimental study was carried out on 30 female non-athlete volunteers were 18 to 25 years with primary dysmenorrhea. Moss Menstrual Disorders Questionnaire [13] before aerobic exercise, first month, and second month was completed. The questionnaire contains 23 questions that included 9 questions about physical symptoms, and 14 questions about psychological symptoms. In Questionnaires, psychological symptoms, such as dysmenorrhea in anger or irritability, anxiety, tension or impatience, a sense of difficulty in concentrating, changes in appetite, insomnia or constant sleeping and physical symptoms, including back pain, dysmenorrhea, abdominal pain, nausea, diarrhea, headache and pain muscle can be assessed. The training program includes eight weeks of swimming training three days a week, each session lasting 45 minutes, the intensity was 75-60% of maximum heart rate. Statistical analysis was performed using SPSS version 18. Data normality was investigated using Kolmogorov-Smirnov test. Statistical analysis of data was performed by analysis of variance with repeated measures. The significance level of the test was considered  $p \leq 0.05$ .

## RESULTS

Average of three phase measurements of the physical symptoms Table 1 has been reported. The results showed that aerobic exercise cannot reduce physical symptoms between pre-test and the first month was ( $p=0.812$ ) but between pre-test and the first month ( $p=0.0001$ ) and the first month of the second year ( $p=0.002$ ), there was a significant decrease.

Average of three phase measurements of the Psychological symptoms Table 2 has been reported. The results showed that aerobic exercise cannot reduce Psychological symptoms between pre-test and the first month was ( $p=0.853$ ) but between pre-test and the first month ( $p=0.023$ ) and the first month of the second year ( $p=0.040$ ), there was a significant decrease.

**Table 1- Average of three phase measurements of physical symptoms**

variable	Means±Sd	df	t	P-value
Phase				
Per test- first month	- 0.079±0.071	29	- 5.074	0.812
Per test- second month	- 0.428±0.079	29	- 2.111	0.0001
first month- second month	- 0.349±0.093	29	- 0.180	0.002

**Table 2- Average of three phase measurements of Psychological symptoms**

variable	Means±Sd	df	t	P-value
Phase				
Per test- first month	- 0.093±0.085	29	- 7.060	0.853
Per test- second month	- 0.256±0.089	29	- 7.604	0.023
first month- second month	- 0.163±0.062	29	- 4.199	0.040

## DISCUSSION

The results of this study showed 8 weeks aerobic training significantly decreased psychological and physical symptoms in primary dysmenorrhea. Over the past 50 years, many studies have been done on the impact of physical activity on menstrual disorders. Exercise can increase or decrease the symptoms of primary dysmenorrhea [14,15]. Israel et al (1985) demonstrated that 12 weeks of aerobic exercise can reduce symptoms of primary dysmenorrhea [15]. Golub et al (1968) in a study found that women who exercise are less prone to dysmenorrhea [16]. Izzo et al

(1991) research showed that athletes who exercise before the onset of puberty have primary dysmenorrhea less experience [17]. Billing et al (1943) also argues that stretching exercises may reduce symptoms of primary dysmenorrhea [18]. These results are consistent with the present study.

Given that primary dysmenorrhea increase uterine muscle contractions and nerve by the sympathetic nervous system is forming, thus reducing sympathetic activity, aerobic activity can reduce stress. Aerobic exercise increases the release of endorphins by the brain, which can raise the pain threshold [15]. Some studies have suggested that the increase in uterine blood flow and metabolism in aerobic activities can be effective against dysmenorrhea [17]. The aerobic training took pains to faster transfer of waste and Prostaglandin the womb helps reduce the pain of dysmenorrhea [19].

### CONCLUSION

According to the results of aerobic training reduces psychological and physical symptoms of primary dysmenorrhea, so these aerobic training as an effective and efficient and are recommended.

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