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Fartlek Training on the Improvement of Hemoglobin Conditions and Hematocrit

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Abstract

This study to find out how the effects of regular exercise with fartlek training method in increasing hemoglobin levels (Hb) and blood hematocrit value (Hct) of Phinisi basketball team. This study was a pre experimental study. using one-group Pre-posttest design using 37 basketball players as subjects. They intervened with fartlek exercise program 3 times each week and the final result is measured after the eighth week. Data analyzed using paired T-test suggested that ths intervention increased hb and Hct level significantly.

Keywords: Fartlek; hemoglobin; hematocrit.

1. Introduction

The fartlek practice method created by Gosta Halmer is an endurance training system, which means to build, restore, or maintain one's body condition [1], so it is good for all sports, especially sports that require endurance. Fartlek training combines aerobic demands with continuous movement and interval speed, the fartlek training method is a very fun exercise and aims to increase the strength and aerobic capacity of athletes [2]. Fartlek training method or often called speed play method, which distinguishes fartlek training of high intensity and low intensity.

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Fartlek training is a form of running activity such as Hollow sprint done by way of road, jogging, sprint, and road continuously [3]. The principle of fartlek practice is to run with various variations. This means it can set the desired running speed during the exercise in accordance with the desires and abilities of the athlete. Cardiac endurance called cardio respiratory is the functional ability of the lungs and the heart to supply oxygen to the muscle for a long time [4]. A person who has good heart and lung resistance will not be exhausted after a series of work [5], while the air's lung capacity is 4,500 ml to 5000 ml or 4 ½ to 5 liters of air [6].

The offered training program is expected to be an attraction for athletes to improve their cardiorespiratory capacity, so athletes can have a good level of fitness [7]. Appropriate practice should apply the basic principles of exercise in order to achieve maximum physical performance for a person. According Sukadiyanto (2002) the principles of the exercise include; Individual, (2) adaptation, (3) overload (4) progressive load (5) specification, (6) varies, (7) heating and cooling, (8) periodization, (9) opposite, (10) moderate load and (11) the exercise should be systematic. While in the laboratory the most objective measurements were performed by calculating the maximum uptake of O2 (VO2max) [8,9].

Based on the survey, it appears that most people do physical exercise to achieve better health and physiological capacity, but to get the expected results would require appropriate training methods, therefore to determine whether the training method fartlek training can contribute optimally in elevated hemoglobin levels, and hematocrit values on predetermined subjects.

2. Material and Methods

This study is a pre experimental study or pre-experimental design which is a research used to find cause-effect relationship where randomization is not done and do not use control group [10].

Design research using the one-group Pre-posttest Design. In this study selected a group of subjects or experimental units. Before the treatment is given, a measurement (pre test) is then given treatment and at the end of the activity or after being given intervention, re-measurement (post test). Sample size as many as 37 subjects.

The results of pre and post test measurements will be compared to see the difference in the value of the variables after being given the intervention.

3. Results

Empirical data obtained in the field of test results and endurance measurements conducted before and after the intervention.

Descriptive data analysis is intended to obtain a general overview of data covering the mean, standard deviation, variance, maximum data, minimum data, range, frequency tables and graphs.

Preliminary and final test results of this study by measuring hemoglobin levels, and hematocrit before and after the application of fartlek exercise for 8 (eight) weeks as follows;

Table 1: Intervention Effect of Fartlek Method on Increasing Hemoglobin Level

Time of measurement	N	Hemoglobin Level		*P**
		Mean	Std. Deviation	
Pre intervention	37	13.87	1.01	
Post intervention	37	15.01	0.95	< 0.001

**Paired T- test*

Based on table 1, it was found that the mean hemoglobin level after giving the method of fartlek training on the subject (15.01 gr / dl) was higher than the mean hemoglobin level before the fartlek training on the subject (13.87 g / dl). The result of the analysis used paired T test with trust level (α = 0,05). Based on the test, got the result with value p <0.001 (p <0.05) then Ho is rejected. So it can be concluded that there is a difference of average hemoglobin level before the after giving the method of fartlek training on the subject or in other words there is influence of fartlek training method to increase hemoglobin level.

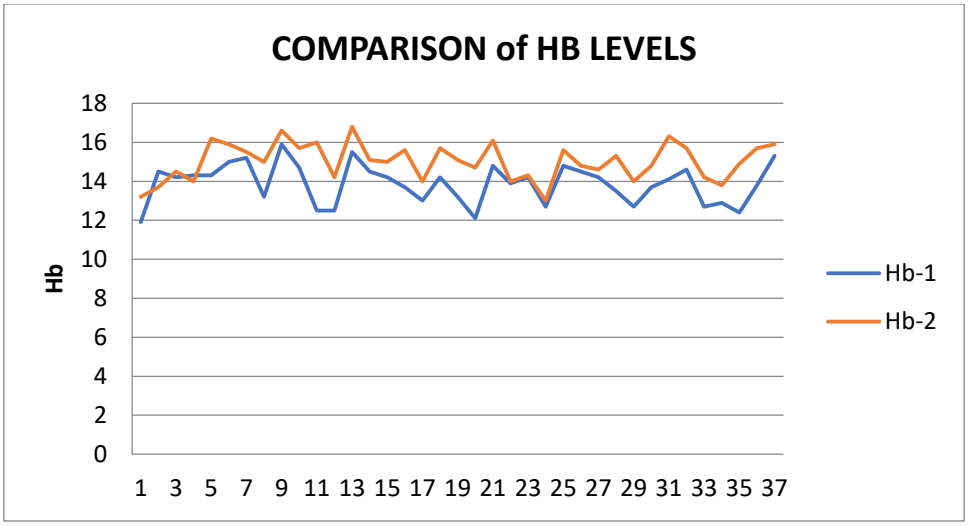

Figure 1: Graph of Comparison of Hb Levels Before and After Fartlek

Table 2: Intervention Effect of Fartlek Method on Increasing Hematocrit Levels

Time of measurements	Hematocrit Level			*p*
	N	Mean	Std. Deviation	
Pre	37	41.64	3.02	
Post	37	44.94	2.99	< 0.001

**Paired T- test*

Based on the table, it was found that the mean hematocrit level after the intervention of fartlek training method

on the subject (44.94%) was higher than the mean hematocrit level before the fartlek training on subjects (41.64%). The result of the analysis used paired T test with trust level (α = 0,05). Based on the test, got the result with value P <0.001 (p <0.05) then Ho is rejected. So it can be concluded that there is a difference of mean hematocrit levels before the after giving the method of fartlek training on the subject.

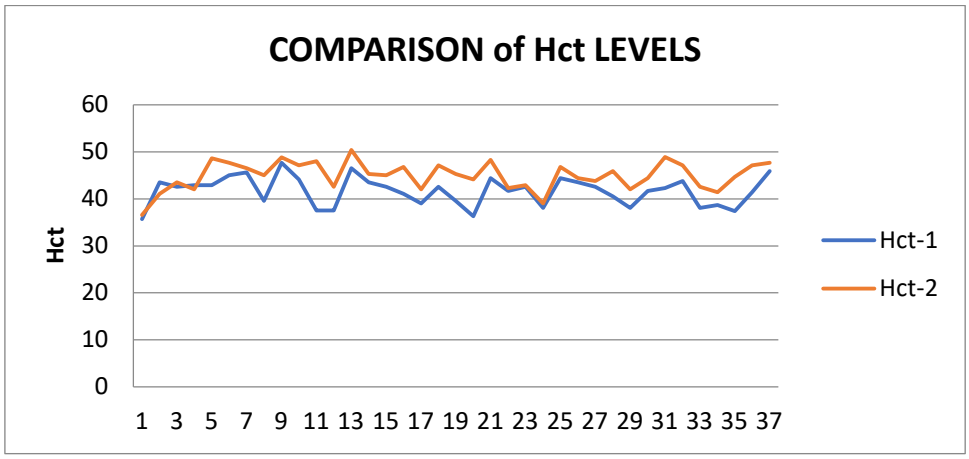

Figure 2: Graph of Comparison of Hct Levels Before and After Fartlek

4. Discussion

This study analyze how the model of fartlek exercise can be an exercise model that can increase the levels of Hb and Hct, in this study we involve 37 basketball players, which after the initial data collection of hemoglobin, and hematokrit then in the intervention with fartlek exercise program 3 times each week and the final result is measured after the eighth week. We inherit many factors that contribute to aerobic fitness, including the maximum capacity of respiratory and cardiovascular systems, larger heart, red blood cells and more hemoglobin [11]. In theory, fartlek exercise is said to increase the maximum oxygen volume of the lungs so it will certainly affect the increase in endurance, hemoglobin itself is a protein in the blood that serves to bind the oxygen and then delivered throughout the body tissue, therefore it can be concluded that someone who has a good hemoglobin which is in the range 13-18 g / dL and Ht values of 40-52% of blood volume, will have a better cardiorespiratory ability as well, as much as approximately 80% of body iron is in hemoglobin [12]. More than half the maximum aerobic power difference is due to genotype differences, and environmental factors (nutrients) as other causes [12] (Magnus, 2011) because of the greater supply of oxygen that can be provided previously known that hemoglobin and hematocrit levels will affect a person's cardiorespiratory endurance , then in this study we will analyze how an exercise model can stimulate an increase in hemoglobin levels and athlete's hematocrit value.

5. Conclusion

Cardiorespiratory endurance is the most important component of physical fitness [13]. The output obtained as a result of our research activities showed that the mean hemoglobin level after the application of fartlek training method on the subject (15.01 g / dl) was higher than the mean hemoglobin level before the fartlek training on

subjects (13.87 g / dl) there is an average increase of 1.14 g / dl, whereas at hematocrit value there is an increase of 3.3% after the intervention done, so it can be concluded that there is significant influence of intervention fartlek training method to increase hemoglobin level and hematocrit value of red blood cells in athletes .

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Competing Interest

There is no conflict interest in this research.

References

[1] Harsono. (1988). Coaching and the Psychological Aspects of Coaching. Jakarta: CV. Tambak Kusuma

[2] Birch K., MacLaren. D., and George. K. (2005). Sport & exercise physiology. UK: Garland Science /BIOS Scientific Publishers.

[3] Sukardiyanto. 2002. Introduction to the theory and methodology of physical training. Yogyakarta: FIK UNY

[4] Irianto, Djoko P. 2004. Practical guidelines for exercising. Yogyakarta: Andi Offset

[5] Arthur C. Guyton. 1997. Physiology of Medicine. Jakarta: Medical Books

[6] Evelyn CP, 2009. Anatomy and Physiology for Paramedics. Jakarta: Gramedia

[7] Eri P. Dwikusworo. 2006. Practicum Test and Sports Measurement Guide. Semarang

[8] Sukardiyanto. 2002. Introduction to the theory and methodology of physical training. Yogyakarta: FIK UNY

[9] Effendi, F & Makhfudli. 2009. Community Health Nursing; Theory and Practice in Nursing. Jakarta: Salemba Medika

[10] Dahlan, Sopiyudin. 2011. Statistics for Medicine and Health. Jakarta: Salemba Medika

[11] Sharkey, Brian J. 2003. Fitness and Health. Jakarta: PT. Raja Grafindo Persada

[12] Almatsier, Sunita. 2001. Basic Principles of Nutrition Science. Jakarta: PT Gramedia Pustaka Utama

[13] Kravitz, Len. 2001. Total Complete Guide. Jakarta: PT. Raja Grafindo Persada.

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