

Correlation of Age With Hemoglobin Levels in Trained Soccer Athlete

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ABSTRACT

The problem in this study is the still low hemoglobin level in Rajawali Fc soccer athlete caused by several. The index of body mass, genes, physical activity is one of the factors that influence hemoglobin. purpose of this study was to determine the relationship of age with hemoglobin. This research is a quantitative approach with correlational design. The sample in this study was a Rajawali Fc athlete, amounting to 16 people with various ages. Based on the results of data analysis, the value of t count = 1.384 < t table = 1.764, which means there is no relationship between age and hemoglobin.

Keywords: Age, hemoglobin level, trained athlete

1. INTRODUCTION

Sport is a part of human daily activities that is useful for forming a healthy body and spirit. Until now sport has made a positive and tangible contribution to improving public health. Besides that, sport also plays a role in increasing the ability of the nation to carry out sustainable development systems. One effort to create a complete Indonesian man is by coaching through sports.

Sports are not only for the sake of education, recreation, and physical fitness, but also as a venue for competition to compete in the achievement of an achievement both individually and in groups. This is also confirmed in the Law of the Republic of Indonesia No. 3 of 2005 concerning the National Sports System Chapter II Article 4 which reads: "National sports functions to develop physical, spiritual, and social abilities as well as to shape the character and personality of a dignified nation. Keolah-ragaan nasional bertujuan memelihara dan meningkatkan kesehatan dan kebugaran, prestasi, kualitas manusia, menanamkan nilai moral dan akhlak mulia, sportsmanship, discipline, strengthen and foster national unity and integrity, strengthen national defense, and elevate the nation's dignity, dignity and honor".

From the above quotation, it can be seen that various goals and objectives of Indonesian sports activities, one of which is in the form of fostering sports achievements. This means that sports activities are not only for physical fitness but also to improve sports achievements in order to make the name of the nation and state proud. As an achievement sport covers almost all sports including: football, basketball, volleyball, swimming, badminton, tennis, takraw and others.

In every championship both in the area and in the national arena all athletes competing to find achievements in their respective fields to be able to raise the name of the contingent or region. Among the many sports that are currently being developed, one that gets attention and guidance is soccer Football is a dynamic sport that requires excellent physical condition.

In playing physical football is one of the basic components that a player must have because with the technique of dribble, chasing. Seizing, the ball from the opponents is a physical factor. And also many of the movements involved in playing soccer are like jumping, footwork and a quick headgear to all directions.

A good soccer athlete must have good basic soccer skills, and be trained with the correct training methods so that the resulting movements are also correct. In individuals who regularly exercise their hemoglobin levels are low. Because O₂ will be much more needed by the tissues while engaging in activities. (Bahri et al., 2009) in Mirza Juanda (2014) [1]. In doing soccer movements can increase physical activity, meaning that exercise requires a lot of oxygen, where in the body oxygen-producing role as a transport medium that delivers oxygen throughout the body is hemoglobin.

Hemoglobin is a protein compound with Fe called conjugated protein. As the point Fe and with protoperphyrin and globin (tetra phirin) cause red blood color because of this Fe. Eryt Hb binds to carbon dioxide into carboxy hemoglobin and has a deep red color. Arterial blood contains oxygen and venous blood containing carbon dioxide (MOH RI in Widayanti, 2008) [2].

Hemoglobin has two important transportation functions in the human body, namely the transport of oxygen from the respiratory organs to the oxygen is breathing to the periphel and carbondioxed tissues of cells with multiple protons from the tissues of cells to the respiratory organ to be exhaled.

Hemoglobin accounts for about 15 grams per ounce [15ml] in blood, and “100 percents” in hemoglobin (Evelyn,2009) [3]. In each group for a difference in the number of hemoglobin but the who has determined normal hemoglobin level to average sex sex (WHO in Arisman, 2002) [4].

Table 1. Hemoglobin Level Limits

Age Group Hemoglobin	Value Limit (Gr / Dl)
Children 6 months -6 years	11.0
Children 6 years -14 years	12.0
Adult men	13.0
Pregnant women	11.0
Adult women	12.0

Source: WHO in Arisman 2002[4]

Table 2. Normal Limits of Hemoglobin Levels for Each Age Group

Hemoglobin	Age Group	(gr / 100ml)
Children	1. Children 6 months -6 years	11
	2. 6-14 years	12
Adult	1. Male	13
	2. Women	12
	3. Pregnant women	11

Source: MOH RI, 1999 (Zarianis, 2006) [5]

Hemoglobin levels will increase slightly when a person is exercising properly, measured and regularly. Because sast undergoes a massive network of radio staus need O2 (oxygen). A good soccer athlete must do physical training in order to have good basic soccer skills, and be trained with the correct training methods

so that the resulting movements are also correct. routine and programmed exercise because in other words regular and regular exercise will bring changes to the body's physiological system.

Changes that occur include the pulse in exercise will increase, blood pressure at rest will be normal, hemoglobin levels will increase because this hemoglobin will carry oxygen from the lungs to all body tissues including skeletal muscle cells and the ability of the lungs to supply oxygen to cells. body cells increase, because soccer is a sport that requires a large supply of oxygen to become a source of energy and the formation of Adenosine Tri Phosphate (ATP) as energy as well (Ferry, 2019) [6].

Some of the factors that influence hemoglobin levels are: age, food, sex, physical activity, lifestyle, genetics, and nutritional status. The importance of the function of hemoglobin in the human body and the importance of someone doing regular physical activity are two interrelated things.

The relationship between physical activity a person does on hemoglobin levels in a study that when a person performs Sports such as physical activity, which can increase the metabolic activity produced (lactic acid hydrogen ions) so that it can increase the amount so that it becomes a decrease in PH. Low pH will reduce the between hemoglobin and oxygen.

Which causes oxygen hemoglobin to release a lot so that oxygen has increased to the muscles.

Based on the above discussion, this study aims to determine the relationship between age and hemoglobin.

2. METHODS

This study uses a quantitative approach with a correlational design, to see the relationship of age with hemoglobin. The sample in this study were athletes Rajawali Fc, totaling 16 people with ages 14-20 years.

The instrument in this study was in the form of TKJI test. For the Hemoglobin variable The test determining the hemoglobin level is Indonesian Physical Fitness (TKJI) for ages 14-20 years.

3. RESULT AND DISCUSSION

In theory, the conceptual framework of this research is :



Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Usia ^a	.	Enter

- a. All requested variables entered.
- b. Dependent Variable: HB

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.347 ^a	.120	.058	1.174

a. Predictors: (Constant), Usia

ANOVA^b

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	2.640	1	2.640	1.915	.188 ^a
Residual	19.297	14	1.378		
Total	21.937	15			

a. Predictors: (Constant), Usia

b. Dependent Variable: HB

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	11.319	2.362		4.792	.000
Usia	.151	.109	.347	1.384	.188

a. Dependent Variable: HB

Based on the results of the research from the above output we can find the value of r count = 1.384 with a significance value of 0.188 > 0.05, which means there is no significant influence (significance) of the variable X (age) with the variable Y (HB).

4. CONCLUSION

Research that has been done by researchers some time ago has answered the hypothesis that researchers proposed before. Based on these results it was found that: r count = 1,384 with a significance value of 0.188 >

0.05, which means there is no significant effect (significance) variable X (age) with variable Y (HB).

There is no relationship between age and hemoglobin levels in trained soccer athletes.

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