



Recovery When Doing Physical Activity in Futsal Athletes

Andi Muh. Yusuf^{1✉}, Rasyidah Jalil^{2✉}, Imam Pribadi^{3✉}

Pendidikan Jasmani, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Muhammadiyah Palopo,
Palopo, Indonesia¹²³

Article History

Received April 2022

Accepted May 2023

Published Vol.12 No.(2) 2023

Keywords:

Recovery; Physical activity;
Futsal athlete.

Abstract

The purpose of this research is to restore the athlete's physical condition as soon as possible after doing sports activities. This is a Quantitative research, which is a research model that emphasizes the analysis of numerical data (numbers) that are processed using statistical methods in each result obtained. Based on the results that have been done, it shows that there is a significant difference between the pretest and posttest in the physical activity of the active group and the passive group. The description value of the average active pretest is 47.00 to 57.14 in the posttest and the sig.0.00 value <0.05 . The mean value of the passive group pretest is 40.25 to 52.50 in the posttest and the sig. 0.28 <0.05 . Normality test value of 0.200 >0.05 , so it can be concluded that the active group and passive group data are normally distributed. Sig value, 0.30 >0.05 , it can be concluded that the physical activity testing of the active group and passive group of futsal athletes is homogeneous. The sig value of the active T test is 0.00 <0.05 which means that H_0 is rejected, and the passive value is 0.28 which means H_0 is accepted. Thus it can be concluded that there is an influence on recovery when doing physical activity in athletes.

How to Cite

Yusuf, A. M., Jalil, R., & Pribadi, I. (2023). Recovery When Doing Physical Activity in Futsal Athletes. *Journal of Physical Education, Sport, Health and Recreation*, 12 (2), 111-117.

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✉ Correspondence address :

E-mail: y489332@gmail.com, rasyidah@umpalopo.ac.id
imampribadi@umpalopo.ac.id

INTRODUCTION

Education is not only required to be able to keep pace with advances in science and technology, but most importantly human resources can also develop in line with these developments. Education is a means to offset progress in the development of science and technology with various changes in learning methods in accordance with the conditions and learning objectives to be achieved so as to create a generation of quality and highly competitive nations.(Masgumelar & Mustafa, 2021). Education is a major factor in improving the quality of human resources on earth. Therefore education can and must contribute to a new vision of sustainable global development(Mustafa & Dwiyogo, 2020). Education that is well implemented also has a good impact on national development. To achieve the goals of national education, it is necessary to make mature efforts to develop good plans, approaches and strategies(Muhtar & Lengkana, 2019). Sports education is an educational sport that is taught through schools starting from elementary education to secondary education, usually the subjects are in the form of physical education, sports and health (PJOK)(Rumko et al., 2022). Physical education is a tool to achieve educational goals, or an education through the process of adapting physical activities such as organs, neuromuscular, intellectual, social, cultural, emotional, and ethical.(Iyakrus, 2018). Physical fitness is said to be high if it is able to last a long time carrying out activities compared to those who have a low level of physical fitness(Sinuraya & Barus, 2020). It has been done early on to be able to introduce about physical education, sports and health(Wiyani, 2019). Futsal was invented in 1930 by a man named Juan Carlos Ceriani Gavier who was a sports teacher at a school in Uruguay.(Al-fadirohimi & Pambudi, 2022)Futsal entered Indonesia around 1998-1999 and the public became familiar with it in the 2000s. It was at that time that futsal began to develop rapidly followed by the birth of many futsal schools in Indonesia(Swastika, Herningtyas & Khasanah, Nidaul, 2017).Futsal is a popular team game at the moment and has even become a national game in every country (Utomo, 2017).SportFutsal is generally played indoors or on a closed field (Astono, 2022). The ability to dribble the ball can be improved through continuous practice, one of the exercises that can improve agility is boomerang run (Hulfian, 2020). For this reason, it is necessary to evaluate the policies and programs that have been announced, such as the preparation of a structured and appropriate training program as needed and the need for a joint commitment to achieve the desired goals.(Sutiana et al., 2020).

Physical activity is a form of physical movement that requires the expenditure of energy produced by skeletal muscles(Study et al., 2021).Every body movement during physical activity will require energy expenditure(Nagara & Roepadjadi, 2020). Physical activity and exercise are essential in primary, secondary and tertiary prevention to manage disease and reduce falls and improve physical performance in everyday life(Abdullah & Nur'amalia, 2022). Lack of physical activity is carried out so that it can lead to obesity or overweight and low physical fitness, this will greatly affect the physicality of humans(Eko Nopiyanto & Pujiyanto, 2022)Exercise is a physical activity that is carried out repeatedly which has a goal, one of which is to increase endurance. To increase endurance, it can be done using high-intensity exercises.(Koesherawati et al., 2022).

Futsal is a very complex sport that requires excellent game techniques and strategies. Likewise in terms of physical aspects of ability. Futsal is a ball game played by two teams, each consisting of five people. The goal is to put the ball into the opponent's goal, by manipulating the ball with the feet. To become a good futsal player, we must learn the correct playing technique and portion of futsal practice.(Hidayat & Riswanto, 2021)Futsal differs significantly from other sports in several ways.(Hidayat et al., 2021) Futsal is a popular team game at this time and has even become a national game in every country(Utomo, 2017).However, most people actually reduce their physical activity because they feel that physical activity such as sports does not match their lifestyle, even though some of them are aware of its benefits.(Sauliyusta & Rekawati, 2016) and also encourage sports health and health education as a solution to the problem of physical fitness from physical activity factors(Putro & Winarno, 2022) Physical activity was measured by recalling activities performed, usually without exercise and a typical day with exercise(Ariani & AF, 2017).Futsal require physical endurance, speed, and a large amount of energy expenditure, usually in athletes, problems often arise with low levels of fitness due to lack of physical activity that can hinder sports ability.(Abdullah & Nur'amalia, 2022) Violence Physical activity in athletes can improve health, reduce the risk of several diseases, and improve a person's quality of life. Regular physical activity can prevent and treat non-communicable diseases such as hypertension(Eko Nopiyanto & Pujiyanto, 2022) Physical activity is any form of body movement that causes an increase in the body's calorie needs in excess of the energy requirements in a resting state. Students have academic tasks with a higher intensity than students at the school level. Burnout in the academic field or commonly known

as academic burnout refers to stress, burden or other psychological factors due to the learning process followed by students so that it shows a state of emotional exhaustion, a tendency to depersonalize, and feelings of incompetence.(Publikasi & Kesehatan, 2022).

In futsal extracurricular activities at Senior High School number 1 Palopo, the sports coach or teacher usually wants each student or participant to try to improve their performance. However, in reality not all students or participants have basic knowledge about recovery after exercising. This gap causes problems in the process of practicing sports in general, futsal in particular. There are still many students who feel that recovery is not important after practice, they think that warming up is important even though they agree(Syaefulloh Ivan & Purbodjati, 2022)Passive recovery is a type of recovery in sports. Passive recovery aims to restore the athlete's physical condition as quickly as possible after sports activities. This method is different from active recovery, during passive recovery athletes are advised not to do strenuous activities that trigger excessive muscle contraction activity. Recovery is expected to be more optimal when athletes are fully rested. In addition, special attention is needed from the coach regarding the views of the athletes on the importance of recovery and self-control of the athletes.

Athletes who lack a sense of self-control will create negative expectations about their awareness to overcome and ability to achieve goals. Self-handicapping is the practice of generating excuses for errors or substandard performance. It is basically a person's defensive response to possible failure. As a result, self-handicapping is a practice in which a person intentionally puts himself in a disadvantageous situation to succeed. If success is to be achieved, it may be tied to personal accomplishments and abilities.(Dandy, Rasyidah Jalil, 2022).

Based on the problems above, the researcher interested in conducting research on "Physical Activity Recovery in Futsal Athletes at Senior High School number 1 Palopo. Recovery is one way to lower blood lactic acid levels after exercise, there are several kinds of recovery, namely active recovery and passive recovery, but what I take is active recovery, active recovery is exercise with low or light intensity active recovery refers to recovery from exercise using intensity low activity with a view to recovery(Hamzah et al., 2018).One of the most basic and important ways to deal with injuries or fatigue problems experienced by athletes before, during and after physical activity.(Nasution, 2020). In order to improve recovery after experiencing fatigue, one way is to use the sports massage method.

(Wijaya Kusuma, 2021). Physical exercise reduces the risk of degenerative diseases, increases heart capacity, prevents high blood pressure, improves blood lipid profiles, prevents osteoporosis, improves muscle and joint flexibility, and boosts the immune system.(Purnomo, 2016).

METHODS

The type of research used in this study is using quantitative research, which is a research model that emphasizes analysis of numerical data (numbers) which are processed using statistical methods in each result obtained.(Syaefulloh Ivan & Purbodjati, 2022). The design used in this study was the submaximal physical activity method to determine the initial pulse, and to determine the final pulse. This research is a type of research that is experimental. The population in this study are all high school futsal athletes of senior high school number 1 Palopo. who every week actively participate in training with a total of 20 (twenty) people. While taking samples using saturated sampling technique which means the entire population or 20 (twenty) samples. The place used at the time of this research was in the futsal field of Senior high school number 1 Palopo. The instrument used to collect data in this study is to use a recovery pulse test. First, the athlete is tested for the initial pulse for 30 seconds before carrying out physical activity, after carrying out physical activity again, the pulse was checked again for 30 seconds, then the athlete was given the active recovery treatment after that, the pulse was checked again for 30 seconds and the athlete recovers passively, the pulse test was carried out. initial pulse for 30 seconds after doing physical activity and finally doing a pulse test because of passive recovery after doing physical activity immediately took complete rest then did a pulse test for 30 seconds **Figure 1**.



Figure 1. Research stages.

RESULTS AND DISCUSSION

This research was conducted to discover whether there is a difference between active recovery and passive recovery for futsal athletes, after the data was collected, the following results were obtained.

From the **Table 1**. above is the data from

Table 1. Data description

	Active group					Passive Group					
	N	Mini- mum	Maxi- mum	Means	std. Devia- tion	N	Mini- mum	Maxi- mum	Means	std. Devia- tion	
Pretest recovery active	7	42	52	47.00	3,317	Passive Recovery Pretest	8	36	46	40,25	3,151
Posttest recovery is active	7	52	64	57,14	4,337	Passive Recovery Posttest	8	47	58	52.50	3,665
Valid N (list-wise)	7					Valid N (list-wise)	8				

Table 2. Normality test

Variable	Active group				Passive group				
	N	Sig	A	Information	N	Sig	A	Information	
Active Recovery Pretest	7	,200*	0.05	Normal	Passive Recovery Pretest	8	,200*	0.05	Normal
Posttest Recovery Active	7	,200*	0.05	Normal	Passive Recovery Posttest	8	,200*	0.05	Normal

Table 3. Homogeneity Test

variable	Levene					
	statistics	df1	df2	sig	descriptionn	
Active recovery and passive recovery	15,000	1	3	0.30	Homogeneous	

Table 4. T test Active

Pre-test	95% Confidence Interval Of the difference				df	Significance
	Post-test	Lower	Upper			
		-10.82782	-6.31504		7	0.00

Table 5. T Test Passive

Pre-test	95% Confidence Interval Of the difference				df	Significance
	Post-test	Lower	Upper			
		-1.14090	.39090		8	0.28

the measurement test results physical activity in futsal athletes active group and passive group. It can be seen that the lowest active rockvery pretest value (minimum) = 42, highest value (maximum) = 52, average (mean) = 47.00, standard deviation value (std. Devianton) = 3.317, active rockvery posttest value lowest value (minimum) = 52, highest value (maximum) = 64, mean (mean) = 57.14, standard deviation (std. Devianton) = 4.337. While value pretest rockvery lowest passive (minimum) = 36, highest value (maximum) = 46, average (mean) = 40.25, standard deviation value (std. Devianton) = 3.151, while the active rockvery posttest lowest value (minimum) = 47, highest value (maximum) = 58, mean (mean) = 52.50, standard deviation (std. Devianton) = 3.665. The difference in the mean value of the active group and passive group testing shows that there is an increase in the physical acti-

vity of futsal athletes.

The **Table 2.** above can show that the results of the normality test for the active group and the passive group are normally distributed in the pretest value rockvery active obtained the Kolmogorov Smirnov (KS) value of .190 with a significance value of $0.200 > 0.05$ and the posttest obtained a Kolmogorov Smirnov (KS) value of .168 with a significance value of $0.200 > 0.05$. While the pretest value rockvery passive obtained the Kolmogorov Smirnov (KS) value of .157 with a significance value of $0.200 > 0.05$ and the posttest obtained a Kolmogorov (KS) value of .159 with a significance value of $0.200 > 0.05$. So it can be concluded that the active group data and the passive group are normally distributed.

Based on the **Table 3.** above, it can be seen that the results of the physical activity of the futsal athletes in the active group and the passive group

with a statistical level value of 15,000, and a significance value of $0.30 > 0.05$, it can be seen that the data is homogeneous. So it can be concluded that testing the physical activity of futsal athletes in the active group and the passive group is homogeneous.

Based on the data in the **Table 4.** above, it can be seen that the probability figure of the sig is $0.00 < 0.05$. Which means that H_0 is rejected. Thus it can be concluded that there is a significant effect on the active group on the physical activity of futsal athletes.

Based on the data in the **Table 5.** above, it can be seen that the probability figure for sig is $0.28 > 0.05$. Which means that H_0 is accepted. Thus it can be concluded that there is no significant effect in the passive group on the physical activity of futsal athletes.

Based on the T test of the two groups, it can be seen that the active group has a significant effect on this study and the passive group is not significant for this study and based on the T test on the two groups above, it can be concluded as shown in the diagram below.

This research was conducted to determine active recovery and passive recovery of futsal athletes at Senior high school number 1 Palopo. Providing physical activity treatment to determine the pulse when carrying out physical activities of futsal athletes, this action is very helpful to determine the athlete's pulse by providing activities to carry out physical activities. Recovery heart rate is the number of pulses per minute measured after 5 minutes of rest. This measurement is needed to see how quickly a person's body can recover after strenuous activity (Nasution, 2020). Regular exercise can also improve mental health and can reduce the risk of depression, cognitive decline, and delay the onset of dementia, as well as increase feelings of overall well-being. Students who are dependent on digital media tend to do more sedentary activities, they are seen sitting more than walking or playing in the field with other friends (Asri & Octaviana, 2021). Basic techniques in futsal games are very necessary when playing futsal games. To be able to play futsal well, a player must be equipped with good basic techniques, not only being able to kick the ball but also skills in mastering or controlling the ball. (Alfredo et al., 2020). The criteria for the time needed in the recovery period of sports activities using the lactic acid system requires a minimum of 3 minutes of rest and a maximum of 5 minutes. When resting for 10 minutes, accumulated lactic acid levels can be restored by 25%, if resting for 20-25 minutes can be restored by 50%, and if resting for 2 hours then accumulated lactic acid levels will disappear (Yamaguchi & Rochmania, 2022). Futsal has become a

prima donna sport around the world in recent years. A sport that doesn't look at age, futsal is one of the sports of football with a smaller arena or field. Can play indoor or outdoor court, day or night (Taufik, 2019). Futsal is a team invasion game activity that is played five against five people in a certain time duration. The game of futsal is almost the same as the game of football, especially the basic techniques that must be mastered (Festist, 2020). An important factor in achieving one's futsal achievement is the mastery of basic futsal game skills possessed by the player himself. Forms of playing futsal skills such as; basic technique of baiting (passing), basic technique of holding the ball (control), basic technique of hull (chipping), basic technique of dribbling and basic technique of shooting the ball (shooting). In order to achieve optimal futsal performance, coaching is needed. Coaching must start early, young age is very decisive towards achieving optimal quality achievements in the sport of futsal (Fabiana Meijon Fadul, 2019).

These results show that the post test of active recovery in futsal athletes at Senior high school number 1 Palopo is 0.00 While the passive recovery post test on futsal athletes at Senior high school number 1 Palopo namely 0.28. Based on the results of the above research from the two groups it can be seen that the active group has a significant effect on this study and the passive group is not significant for this study and is based on two groups.

CONCLUSION

The results of this study show that there are significant data differences between the two teams. Sports activities carried out with high intensity will cause the accumulation of lactic acid levels in the body. The greater the level of lactic acid, the more tired you will feel. There is a theoretical connection resulting from a review of previous research in this article. This study supports the theoretical framework of active recovery and passive recovery of changes in lactic acid levels. Apart from that, the implications of this review for those who do sports activities are that recovery is needed after doing activities that make you tired. This is because recovery can reduce the risks of health problems that may occur.

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