

Relationship of Physical Fitness with Physical Activity in Beginners Level Basketball Players During Covid-19

Arnaz Anggoro Saputro  ^{A-D*}

Physical Education, STKIP PGRI Jombang, Jombang, Indonesian

*Corresponding Author: arnazsaputro@gmail.com

Authors' contribution:

A. Conception and design of the study; B. Acquisition of data; C. Analysis and interpretation of data; D. Manuscript preparation; E. Obtaining funding

ABSTRACT

This study aims to determine the correlation between physical activity and physical fitness for beginner-level basketball players at Ploso High School in the 2021-2022 academic year. The method used in this study is a survey method with a correlational study. The sampling technique used total sampling, so the entire population of 20 people was used as the subject of this research. Instruments to measure physical activity use the Physical Activity Questionnaire for Older Children (PAQC) and to measure physical fitness use TKJI. Data analysis using SPSS version 25 with a simple correlational test. The results of data analysis show that the correlation between physical activity and physical fitness is $r = 0.78$, so it can be concluded that there is a positive correlation between physical activity and physical fitness for beginner level basketball athletes at Ploso High School in the 2021-2022 academic year.

ARTICLE HISTORY:

Received: April 30, 2022

Accepted: May 29, 2022

Published: June 5, 2022

KEYWORDS:

Physical activity;

Physical fitness;

Basketball

How to Cite : Saputro, A. A. (2022). Relationship of Physical Fitness with Physical Activity in Beginners Level Basketball Players During Covid-19. *International Journal of Basketball Studies*, 1(1), 1-7. <https://doi.org/10.31949/ijobs.v1i1.2561>

INTRODUCTION

Basketball today is a form of sport that is done in groups. Nowadays, basketball has become one of the most popular sports in the world, including in Indonesia. Basketball is very popular with all people, both men and women, especially teenagers as a place for positive activities as well as to achieve achievements (Mylsidayu & Kurniawan, 2016). Basketball is a big-ball game with the aim of getting as many balls into the opponent's basket as possible and maintaining your own basket so you don't throw in as many balls as possible (Sofyan, et al., 2020). To prepare basketball athletes who are ready to wade through a competition, athletes must pay attention to and develop their techniques, tactics, mental and physical conditions (Harsono, 2015). However, due to the impact of the COVID-19 pandemic, it is difficult for athletes to carry out routine training together with coaches (Setiawan, Iwandana, Festiawan, & Baptista, 2020).

All sports activities, physical activities or exercise routines that are carried out simultaneously are currently not allowed (Jukic et al, 2020), because the Indonesian

government has currently implemented physical distancing, this is done so that the transmission of COVID-19 does not spread among basketball athletes. massively. With the cessation of training or physical activity, this will be a very big loss for athletes to face competition in the future. Basketball training consists of various factors that are tailored to the training category (Sofyan & Budiman, 2022). As a result of the cessation of training sessions, it will trigger athletes to stay at home without doing any activities, or just doing activities, such as watching TV or YouTube, playing cellphones, even lying down from morning to night (Kastrena, et al., 2020) . The activities carried out by athletes at home should lead to positive physical activities, such as going up and down stairs, cleaning the house, jogging, gymnastics, push-ups, sit-ups, back-ups or others.

Physical activity is an activity that is carried out by a person through the movement of skeletal muscles, thereby triggering the movement of all or part of the body's limbs (Murbawani, 2017). Physical activity is also defined as the activity of the musculoskeletal system which is carried out in a structured and systematic manner with predetermined intensity, frequency, type, and time (Wiaro, 2013). According to Prasetyo & Winarno, (2017) physical activity is any body movement produced by skeletal muscles that requires energy expenditure. Some literature claims that physical activity is closely related to a person's physical fitness level. As previous studies have shown that physical activity correlates with physical fitness levels in softball athletes (Vania et al., 2018).

Physical fitness is the ability of an individual to be able to perform daily performance efficiently without excessive fatigue, so that he can still enjoy his spare time. Physical fitness is a biomotor component which includes strength, speed, endurance, and flexibility (Wibowo, 2016). With the biomotor component, physical fitness has a function as the body's ability to carry out an activity efficiently in a relatively long time without causing significant fatigue (Lee, et al., 2018).

Without good physical fitness, athletes will not succeed in obtaining achievements even though they have good technical and tactical skills (Kuswari, et al., 2019). Physical fitness for basketball athletes is a very important aspect, without a high level of physical fitness, an athlete will have difficulty or will not be optimal in carrying out daily movements and movements in sports, such as running, throwing, catching, kicking, hitting, because all these movements require physical fitness components, namely strength, agility, speed and endurance (Ortega-Becerra, et al, 2018). Thus, if the level of physical fitness is high, an athlete will be able to carry out activities for a long time without experiencing significant fatigue (Setiawan et al., 2020), and can perform a better movement skill. However, previous studies have found that physical activity has little correlation with physical fitness, even showing a negative correlation (Liposek, et al., 2019). With contradictory results in previous studies, this is the basis why this research needs to be carried out.

METHODS

The method used in this study is a simple correlational descriptive method with the rxy research design. For more details about the RXY design, see Figure 1. The population used in this study was a beginner level basketball athlete at SMA Ploso for the academic year 2021-2022, which amounted to $n = 20$ people (7 sons and 13 women) aged 16 years. The sampling technique was carried out by using total sampling, so that the entire population of 20 people was used as research subjects. The reason for using total sampling is because the total population is relatively small, which is less than 30 people (Sugiyono, 2016).

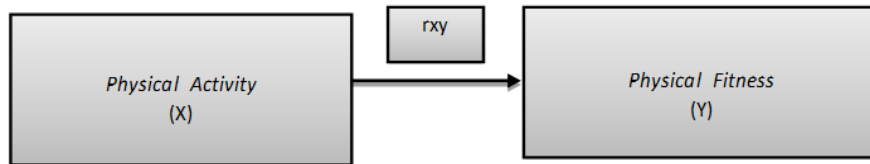


Figure 1. Simplified Correlational Research Design

The physical activity instrument uses the Physical Activity Questionnaire for Older Children (PAQC) for ages 8-17 years (Prasetyo & Winarno, 2017). Meanwhile, the instrument to measure the physical fitness of students is the Indonesian Physical Fitness Test (TKJI). TKJI test for high school level with validity of 0.92 and reliability of 0.72 (Nurhasan, et al., 2019). This test item consists of sprinting 60 meters, pull-ups, sit-ups, vertical jumps. Data analysis in this study used SPSS version 25 to analyze descriptive data, namely looking for the average value (mean), standard deviation, the lowest and highest values of each research variable. normality, linearity, simple correlation.

RESULTS

Descriptive Test Results Data

After the raw data is obtained from the measurement results of physical activity and physical fitness, the calculation results are presented in Table 1. Based on Table 1 below, the mean value of the physical activity variable is 97.05 and the value of std. deviation of 12,647. While the mean value of the physical fitness variable is 96.95 and the std value. deviation of 10,595.

Table 1. Descriptive Test Results Data

Variable	N	Minimum	Maximum	Mean	Std. Deviation
<i>Physical Activity</i>	20	80	121	97.05	12.647
<i>Physical Fitness</i>	20	81	115	96.95	10.595

Source: Personal data analysis

From the results of the normality test calculation in Table 2, the Sig value of the physical activity variable for males is 0.265 and female is 0.224. While the Sig physical fitness value for men is 0.585 and for women is 0.781. So, it can be interpreted that all data are normally distributed because the value of Sig > 0.05.

Table 2. Data Normality Test Results

	Sex	Shapiro-Wilk		
		Statistic	df	Sig.
<i>Physical Activity</i>	Man	888	7	0.265
	Woman	916	13	0.224
<i>Physical Fitness</i>	Man	934	7	0.585
	Woman	962	13	0.781

Based on the results of the linearity test calculation in Table 3, the significance value of $0.510 > 0.05$, it means that it has a linear correlation between physical activity and physical fitness. Based on the results of the simple correlation test calculation in Table 4, the value of Sig $0.000 < 0.05$ is obtained, meaning that there is a correlation between physical activity and physical fitness. Then the magnitude of the correlation can be seen in

the Pearson correlation or r count of $0.708 > r_{table}$ of 0.444 . So, it can be interpreted that the correlation with the category is quite high or significant (Sugiyono, 2016).

Table 3. Data Linearity Test Results

ANOVA		Sig
<i>Physical Activity</i>	<i>Deviation from Linearity</i>	0.510
<i>Physical Fitness</i>		

Table 4. Hypothesis Test Results Data

Variabel		<i>Physical Activity</i>	<i>Physical Fitness</i>
<i>Physical Activity</i>	<i>Pearson Correlation</i>	1	0.708**
	<i>Sig. (2-tailed)</i>		0.000
	N		20
<i>Physical Fitness</i>	<i>Pearson Correlation</i>	0.708**	
	<i>Sig. (2-tailed)</i>	0.000	
	N	20	20

DISCUSSION

The purpose of this study was to determine the correlation between physical activity and physical fitness in beginner level basketball athletes at Ploso High School in the 2021-2022 academic year. The results of this study found that physical activity was closely related to the physical fitness level of beginner level basketball athletes. This is because the more physical activity an athlete does, the higher the level of physical fitness he will have. Previous studies have also shown the same result, namely that there is a positive correlation between physical fitness and physical activity (Howie & Pate, 2012). Basically, physical activities are activities that lead to physical movement.

According to the World Health Organization (2010), physical activity is a body movement produced by skeletal muscles and requires energy expenditure. Lack of physical activity is a risk factor that causes global deaths of around 3.2 million deaths. Physical activity is indeed an activity that provides many benefits, besides being able to eliminate obesity and other chronic diseases, physical activity is also in some literature greatly affects the level of health and physical fitness in children to the elderly (Blaes, et al., 2011). In line with the opinion of Permatasari, et al. (2018), they emphasize that one of the factors that affect the level of physical fitness is physical activity that is carried out continuously. The longer the athlete does physical activity (muscle strength training, coordination of anaerobic strength and endurance), the more oxygen needs to meet energy needs, so physical fitness will be higher (Catikkas, 2016; Pyne & Sharp, 2014). In achieving a high degree of physical fitness, an athlete must be more intensive in carrying out an exercise program (Gani & Achmad, 2020). Previous studies have recommended some physical activities that can be done in the current COVID-19 era, such as walking around the house, climbing stairs, to aerobic exercise, zumba dancing, cycling and body weight training simply by involving the use of the body as a way to fight gravity (Chen et al., 2020), for example push-ups, pull-ups, squats, lunges, jump over the box, jump rope, burpees, etc. (Hammami, et al., 2020). Thus, it can be concluded that a low or high level of physical fitness is very dependent on the physical activity carried out by athletes on a daily basis. The results of this study are supported by previous studies which showed that

physical activity ($P = 0.001$) was significantly correlated with the level of physical fitness in softball athletes (Vania et al., 2018).

CONCLUSION

Based on the results of data analysis and discussion of research results, it can be concluded that there is a very significant correlation between physical activity and physical fitness in beginner level basketball athletes at Ploso High School in the 2021-2022 Academic Year. The implication of this research is that it can become valuable information for lecturers, teachers, coaches and sports practitioners about physical activity and physical fitness. It is recommended to every athlete and basketball coach to pay more attention to and foster the level of physical activity, so that it has a high physical fitness impact.

The limitation in this study is the relatively few subjects used and only taken from one school in Jombang Regency. Further research needs to be done, such as adding more research subjects and coming from several schools with the same level.

ACKNOWLEDGMENT

Thank you to SMA Ploso Principal and Physical Education Teachers for granting permission to conduct this research, as well as all of SMA Ploso basketball athletes who volunteered to assist in its completion.

CONFLICT OF INTEREST

Authors declare that they have no conflicts of interest.

REFERENCES

- Blaes, A., Baquet, G., Fabre, C., Van Praagh, E., & Berthoin, S. (2011). Is there any relationship between physical activity level and patterns, and physical performance in children? *International Journal of Behavioral Nutrition and Physical Activity*, *8*(1), 122. <https://doi.org/10.1186/1479-5868-8-122>
- Catikkas, F. (2016). Sexual Dimorphism in Physical Fitness Parameters of Competitive Adolescent Taekwondo Athletes. *The Anthropologist ISSN:*, *25*, 70–75. <https://doi.org/10.1080/09720073.2016.11892090>
- Chen, P., Mao, L., Nassis, G. P., Harmer, P., Ainsworth, B. E., & Li, F. (2020). Coronavirus disease (COVID-19): The need to maintain regular physical activity while taking precautions. *Journal of Sport and Health Science*, *9*(2), 103–104. <https://doi.org/10.1016/j.jshs.2020.02.001>
- Gani, R. A., & Achmad, I. Z. (2020). Physical Fitness Swimming Athlete In UNSIKA. *Jp.Jok (Jurnal Pendidikan Jasmani, Olahraga Dan Kesehatan)*, *3*(2), 115–125. <https://doi.org/10.33503/jp.jok.v3i2.784>
- Hammami, A., Harrabi, B., Mohr, M., & Krustup, P. (2020). Physical activity and coronavirus disease 2019 (COVID-19): specific recommendations for home-based physical training. *Managing Sport and Leisure*, *0*(April), 1–6. <https://doi.org/10.1080/23750472.2020.1757494>
- Harsono. (2015). *Kepelatihan Olahraga*. Bandung: PT. Remaja Rosdakarya.

- Howie, E. K., & Pate, R. R. (2012). Physical activity and academic achievement in children: A historical perspective. *Journal of Sport and Health Science*, *1*(3), 160–169. <https://doi.org/10.1016/j.jshs.2012.09.003>
- Jukic, I., Calleja-González, J., Cos, F., Cuzzolin, F., Olmo, J., Terrados, N., Njaradi, N., Sassi, R., Requena, B., Milanovic, L., Krakan, I.,
- Chatzichristos, K., & Alcaraz, P. E. (2020). Strategies and Solutions for Team Sports Athletes in Isolation due to COVID-19. *Sports*, *8*(56), 1–9. <https://doi.org/10.3390/sports8040056>
- Kastrena, E., Setiawan, E., Patah, I. A., & Nur, L. (2020). Pembelajaran Peer Teaching Berbasis Zoom Video sebagai Solusi untuk Meningkatkan Hasil Belajar Passing Bawah Bola Voli saat Situasi COVID-19. *Indonesian Journal of Primary Education*, *4*(1), 69–75. <https://doi.org/10.17509/ijpe.v4i1.25133>
- Kuswari, M., Handayani, F., Gifari, N., & Nuzrina, R. (2019). Hubungan Asupan Energi, Zat Gizi Makro dan Mikro terhadap Kebugaran Atlet Dyva Taekwondo Centre Cibinong. *JUARA: Jurnal Olahraga*, *5*(1), 20–31. <https://doi.org/10.33222/juara.v5i1.572>
- Lee, M. K., Kim, N. K., & Jeon, J. Y. (2018). Effect of the 6-week home-based exercise program on physical activity level and physical fitness in colorectal cancer survivors: A randomized controlled pilot study. *PLoS ONE*, *13*(4), 1–10. <https://doi.org/10.1371/journal.pone.0196220>
- Liposek, S., Planinsec, J., Leskosek, B., & Pajtler, A. (2019). Physical Activity of University Students and Its Relation to Physical Fitness and Academic Success. *Annales Kinesiologiae*, *9*(January), 90–104. <https://doi.org/10.35469/ak.2018.171>
- Murbawani, E. A. (2017). Hubungan Persen Lemak Tubuh dan Aktivitas Fisik dengan Tingkat Kesegaran Jasmani Remaja Putri. *Journal of Nutrition and Health*, *5*(2), 69–84.
- Mylsidayu, A., & Kurniawan, F. (2016). Survei Kesegaran Jasmani Atlet Bolabasket Plpd Kabupaten Bogor. *Motion*, *7*(2), 191–202.
- Nurhasan, Setiawan, E., Budiarto., Kastrena, E. (2019). *Tes dan Pengukuran Pendidikan jasmani dan Keolahragaan*. Bandung: Alfabeta.
- Ortega-Becerra, M., Pareja-blanco, F., Jiménez-reyes, P., Víctor, C.-P., & Juan, J. G.-B. (2018). Determinant Factors of Physical Performance and Specific Throwing in Handball Players of Different Ages. *Journal of Strength and Conditioning Research*, *32*(6), 1778–1786. <https://doi.org/10.1519/JSC.0000000000002050>
- Permatasari, F. D., Adi, A. C., & Dewi, R. C. (2018). Hubungan Status Gizi dan Level Aktivitas Fisik dengan Tingkat Kebugaran pada Pemain Bola Basket di UKM Basket. *Amerta Nutrition*, *2*(4), 332. <https://doi.org/10.20473/amnt.v2i4.2018.332-339>
- Prasetyo, M. A. P., & Winarno, M. E. (2017). Hubungan Antara Status Gizi Dan Aktivitas Fisik Dengan Tingkat Kebugaran Jasmani Pada Siswa SMP. *Jurnal Pendidikan Olahraga Dan Kesehatan*, *4*(2), 516–521.
- Pyne, D. B., & Sharp, R. L. (2014). Physical and energy requirements of competitive swimming events. *International Journal of Sport Nutrition and Exercise Metabolism*, *24*(4), 351–359. <https://doi.org/10.1123/ijsnem.2014-0047>

- Setiawan, E., Iwandana, D. T., Festiawan, R., & Bapista, C. (2020). Improving handball athletes' physical fitness components through Tabata training during the outbreak of COVID-19. *Jurnal SPORTIF*, 6(2), 375–38
- Sofyan, D., Arhesa, S., & Al Fazri, M. (2020). Pengaruh Model Kooperatif Learning Tipe Team Games Tournament terhadap Hasil Belajar Passing Bola Basket. *Prosiding Seminar Nasional Pendidikan*, 2, 679-702. Retrieved from <http://prosiding.unma.ac.id/index.php/semnasfkip/article/view/382>
- Sofyan, D. & Budiman, I. A. (2022). Basketball jump shot technique design for high school athletes: Training method development. *Journal Sport Area*, 7(1), 47-58. [https://doi.org/10.25299/sportarea.2022.vol7\(1\).7400](https://doi.org/10.25299/sportarea.2022.vol7(1).7400)