



The Relationship Between Arm Muscle Strength And Abilities Passing Down Volleyball Games In Class V Students Of Sdn Inpres Bertingkat Waena T.A 2023/2024

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Abstract

The aim of this research is to find out how big the relationship is between arm muscle strength and down passing ability in class V students at SDN Inpres, Waena, T.A 2023/2024. The population of this research is the fifth grade students of SDN Inpres Berangkat Waena totaling 30 students. The research sample is the fifth grade students of SDN Inpres Bertier Waena who took the total of 28 students. Arm Muscles with Lower Passing Ability. The analysis technique used is Product Moment Correlation. The research results show that there is a significant relationship between arm muscle strength. With Lower Passing Ability in Class V Students of SDN Inpres Berangkat Waena.

Keywords: *Arm Muscle Strength, Bottom Passing Ability, Volleyball*

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INTRODUCTION

Sports and health physical education is an integral part of overall education, aiming to develop aspects of physical fitness, skills, movement, critical thinking skills, social skills, reasoning, emotional stability, moral actions, aspects of a healthy lifestyle and introduction to a clean environment. through selected physical, sports and health activities that are planned systematically in order to achieve national educational goals (Depdiknas, 2003: 3).

In the game of volleyball, there are several basic techniques that need to be mastered well, including the basic techniques of serving, passing, smashing and blocking (2007:10). To master this technique requires practice, in learning PJOK volleyball, students use the lower passing technique. often experience difficulty in making down passes, even ironically very few are included in the good category (Dwi Alfiana Putri et al., 2024). This shows that there are problems in learning volleyball. So researchers are trying to find out the reasons for success or failure in making down passes. The hope is to train students who Carrying out lower passing techniques can improve students' ability to pass.

According to observations I made as a PPL teacher, the sports advice and infrastructure at the Waena-level Inpres State Elementary School is inadequate or still very limited, including: a volleyball field that does not yet exist and physical education learning equipment that is very lacking. Physical education learning often does not achieve its objectives. Learning because it is constrained by facilities and infrastructure that do not support it (Pratama et al., 2024). The learning objectives of physical education, sports and health will be realized if the learning is carried out using methods, models and approaches that are appropriate to the conditions of the school concerned. However, the problem is the lack of students' interest and motivation to develop skills in sports, especially volleyball playing skills. Students' lack of ability to make underpasses. From the description above, the author is interested in researching the relationship between arm muscle strength and underpassing ability in volleyball games among students at SD Negeri Inpres. Graded Waena T.A 2023/2024.

In this research, the aim is to find out how big the relationship between arm muscle strength and lower passing ability is in class V students at SDN Inpres multilevel Waena T.A 2023/2024. The benefits in this research are divided into two, namely theoretical benefits and practical benefits. a) Theoretical Benefits: Theoretically, the results of this research are expected to be a reference or input for fifth grade students at SDN Inpres, Waena, to find out the relationship between arm muscle strength and the ability to make a bottom pass. b) Practical Benefits Practically, the results of this research are expected to be This is a benefit for students who make lower passing movements in volleyball games for class V students at SDN Inpres Waena level during their training implementation. And for other parties, this research is also expected to help other parties in carrying out research (Rio Wakhid, 2023).

METHOD

According to Sugiyono (2010: 228), correlation techniques are used to find relationships to prove the hypothesis of the relationship between two pieces of data, both variables are in the form of intervals or ratios, and the data sources from two or more variables are the same.

This research is a correlational research by connecting the measurement results of two different variables in order to determine the level of relationship or these variables. (Arikunto, 2006:273). In this case the independent variable (X) is arm muscle strength and the dependent variable (Y) is the ability to pass under volleyball.

Population is a collection or group of individuals that can be observed by members of the population themselves or by other people who have an interest in it. Suharsimi Arikunto (1996: 1080) said that "Population is the entire subject of research," according to Sugiyono (2000; 55).) that:"population is a generalized area consisting of: objects/subjects that have certain quantities and characteristics determined by the researcher to be explored and then drawn conclusions". Thus, the population in this study was the total number of class V students at SDN Inpres Waena level, totaling 32 students.

According to (Husain and Purnomo, (2001:361) a sample is a portion of the population taken using random sampling techniques. Here the sample must truly reflect the condition of the population, meaning that the research conclusions drawn from the sample must be conclusions on the population (Juli Fitrianto et al., 2023). In this study, the effect of the limited population was that the entire population was taken and the population (total sample). So the sample was the fifth grade students of SDN Inpres, Waena, which took a total of 30 students.

RESULTS AND DISCUSSION

Result

The variables in this study consist of two variables. The independent or influencing variable in this study is arm muscle strength. get Data Variable Y is a volleyball bottom passing test. This test was carried out on Wednesday 12 June 2024 at SDN Inpres Waena Level at 7 am.

1. Data Normality Test

A research data that will be analyzed statistically must meet the analysis requirements, for this reason, after data on arm muscle strength and down-passing ability in Class V students of SDN Inpres waena level in this study are collected, then before statistical analysis is carried out for hypothesis testing, first of all First, the requirements test is carried out, namely normality with the Shapiro-Wilk test at a significance level of 5% or $\alpha = 0.05$ (Kurniaty Bangun1 et al., 2022) From the results of the Shapiro-Wilk test carried out, we obtained the results as attached. The calculation results can be seen in the following summary table:

Table 1 Summary of Normality Test Results

No	Variable	Statistic	Sig	Information
1	Arm muscle strength	0,940	0,171	√
2	Downfield passing ability	0,937	0,075	√

Based on this table, which is a summary of the results of data normality testing for each research variable, it

can be described as follows. In testing the normality of arm muscle strength data, the probability value = 0.171 was obtained, which was greater than the value $\alpha = 0.05$ or at a significance level of 5%. Thus, the arm muscle strength obtained was normally distributed. In testing the normality of the down passing ability data, the probability value = 0.075 was obtained which was greater than the value $\alpha = 0.05$ or at a significance of 5%. Thus the down passing ability data obtained was normally distributed.

2. Hypothesis Testing

Starting from the problem formulation, hypothesis and research design used in this research, the data analysis techniques used to test the truth of the hypothesis are statistical regression and correlation (Hasibuan & Akhmad, 2022). The research results obtained after testing the hypothesis are as follows:

First hypothesis: there is a relationship between arm muscle strength and bottom passing ability in Class V students of SDN Inpres at Waena level. Statistical hypothesis to be tested:

$$H_0 : \rho \times Y = 0$$

$$H_1 : \rho \times Y \neq 0$$

Based on the results of the hypothesis test, the value obtained was $t=6.811$ with $\text{sig}(P)=0.000$, where $p 0.000 < 0.05$ so that H_0 was rejected and H_1 was accepted. So in this study it can be concluded that there is a significant relationship between arm muscle strength and bottom passing ability. in class V students at SDN Inpres at Waena level.

In the results of simple regression analysis, apart from obtaining the t value and its significance, the results of the analysis obtained the value of the coefficient of determination (R^2) and the constant value and regression coefficient which were used to form the regression equation model. Based on the results of the regression analysis, the value of $R=0.970$ was obtained, and R^2 was 0.624. This R^2 value shows that the relationship between arm muscle strength and down passing ability is 62.4%. Therefore, the under passing ability of 37.6 is influenced by other factors. The R square value in this hypothesis means that, every time there is a change in the value of muscle strength followed by changes in lower passing ability in class V students at SDN Inpres at Waena level.

Discussion

Based on the results of hypothesis testing, it shows that one hypothesis is accepted. The results of the hypothesis are as follows:

There is a significant relationship between arm muscle strength and volleyball underpassing ability in fifth grade students at SDN Inpres, Waena level. There is a significant relationship between arm muscle strength and volleyball passing ability. According to Harsono (1988; 176) Arm muscle strength is the ability of the arm muscles to generate tension with resistance and lift weights. According to Ahmadi (2007: 19), the game of volleyball is a complex game, not easy for everyone to play. Knowledge of basic techniques and advanced techniques is required to be able to play volleyball effectively so that you can master the basic techniques. Good bottom passing cannot be achieved instantly but requires repeated practice in the context of learning the game of volleyball.

The results of statistical analysis show that there is a significant relationship between arm muscle strength between the ability to pass under volleyball in class V students at SDN Inpres multilevel Waena (Rio Wakhid., 2023). If the research results are linked to the underlying theory and framework of thinking, then basically the results of this research support and strengthen the theory and the results of previous research that already exists. This proves that the ability to pass under the game of volleyball is greatly influenced by the strength of the arm muscles. The results obtained in class V students at SDN Inpres were categorized as having moderate arm strength in achieving ability under the game of volleyball, p. this can It is understood that arm muscle strength is a person's ability to face a resistance against resistance by focusing on the arm muscles. In making a bottom pass, good arm muscle strength is needed. Thus, arm muscle strength has a significant relationship between the ability to pass under the volleyball game in class students. V SDN Inpres waena level.

CONCLUSION

As a final follow-up to a scientific work, conclusions are drawn. The direction of clear conclusions can make it easier for readers to understand the essence of the previous problem. The conclusions in this research can simply be detailed as follows: 1. There is a significant relationship between arm muscle strength in fifth grade students at SDN Inpres, Waena. 2. There is a significant relationship between volleyball passing ability in class V students at SDN Inpres Waena. level 3.

There is a significant relationship between arm muscle strength and volleyball underpassing ability in fifth grade students at SDN Inpres, Waena level.

REFERENCES

- Akbar, Purnomo Setiady dan Husaini Usman. 2012. Pengantar Statistika. Jakarta : Bumi Aksar
- Arinkunto. 2006. Prosedur penelitian suatu pendekatan praktek. Jakarta : PT. Rineka Cipta
- Arinkunto, Suharsimi. 2010. Prosedur penelitian suatu pendekatan praktek. Jakarta : Rineka Cipta.
- Dwi Alfiana Putri, D., Sri Wahjuni I, E., & Sri Wahjuni, E. (2024). The Influence of Audiovisual Learning Media on The Learning Outcomes of Underhand and Overhand Volleyball Serves At SMA Labschool Unesa 1. *JPJ*, 5(2), 2723–2816. <https://jurnal.stokbinaguna.ac.id/index.php/JPJ/article/view/2986/1450>
- Hasibuan, Y., & Akhmad, I. (2022). Development of Bounce Wall Training Aids To Practice Passing In Volleyball Athletes. *Jurnal Pendidikan Jasmani (JPJ)*, 3(1). <https://jurnal.stokbinaguna.ac.id/index.php/JPJ/article/view/239/417>
- Ismaryati. 2008. Peningkatan kelincahan atlet melalui penggunaan metode latihan Agus Mahendra, 2008, Permainan Anak dan Aktivitas Bermain, Jakarta, Universitas Terbuka.
- BSNP. Djumidar, 2006, Atletik, Jakarta, Universitas Terbuka Miftahul Huda, 2014, Model-model Pengajaran & pembelajaran, Yogyakarta, Pustaka Pelajar.
- Nurhasan & Cholil, 2007, Perkembangan dan belajar gerak, Jakarta, Universitas Terbuka.
- Rusman, 2012, Pembelajaran Pendidikan Jasmani Olahraga dan Kesehatan, Jakarta, Prenada Media Grup.
- Sanjaya, 2006, Strategi
- Juli Fitrianto, E., Robianto, A., Dwi Oktafiranda, N., & Yuliana, E. (2023). Effectiveness of Basic Physical Training Material for DKI Jakarta Sports Coaches. *Jurnal Pendidikan Jasmani (JPJ)*, 4(2). <https://jurnal.stokbinaguna.ac.id/index.php/JPJ/article/view/1583/962>
- Kurniaty Bangun1, A., Syahputri2, S., Rangkuti, Y. A., Kurniaty Bangun, A., & Syahputri, S. (2022). Level of Elementary School Students' Physical Fitness. *Jurnal Pendidikan Jasmani (JPJ)*, 3(2). <https://jurnal.stokbinaguna.ac.id/index.php/JPJ/article/view/735/533>
- Kurniawan, Feri. 2012. Buku pintar pengetahuan olahraga (A. Kadir, Ed.) Jakarta timur: Laskar Askar
- Margono, 2004, Metodologi penelitian pendidikan, Jakarta : Rineka Cipta.
- Harsono. (1988). *Coaching dan aspek-aspek psikologi dalam coaching*, Bandung : Tembak Kusuma CV
- Pembelajaran berorientasi standar proses, Jakarta, Daftar Pustaka. Siti Safariatun, 2008, *Azas & Falsafah Pendidikan Jasmani*, Jakarta, Universitas Terbuka.
- Sudjana, 2014. Dasar – dasar Proses belajar mengajar, Bandung, Sinar Baru, Algensido Suranto dkk, 2006, *Belajar & Pembelajaran*, Jakarta, PT Rineka Cipta.
- Toto Subroto, 2008, *Strategi Pembelajaran Penjas*, Jakarta, Universitas Terbuka

- Pratama, M. E., Budiana, D., & Wibowo, R. (2024). The Relationship Between Self-Efficacy and Physical Education Learning Outcomes in Elementary School. *Jurnal Pendidikan Jasmani (JPJ)*, 4(3). <https://jurnal.stokbinaguna.ac.id/index.php/JPJ/article/view/2192/1233>
- Sajoto.1988.pengetahuan dan pembinaan kondisi fisik.semarang:IKIP Semarang.
- Sport, H., Islam, R., & Hasan, H. (2023). The Influence of Traditional Sports Invitation on Interest in Learning Physical Education Junior High School Students in Jayapura City. *Rio Wakhid H. I. & Baharuddin H. / Journal of Physical Education*, 12(2), 187–193. <http://journal.unnes.ac.id/sju/index.php/peshr>
- Sugiyono.2010.metode penelitian pendidikan pendekatan kuantitatif,kualitatif Dan R dan D.Bandung: Alfabeta
- Suharno HP.(1984).dasar-dasar permainan bola voli.yogyakarta :FPOK IKIP
- Suparno dan suwandi.2008.penjasorkes 1SMA/MA.Jakarta:bumi aksara