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The Correlation between Physical Fitness toward Student's Learning Performance in Senior High School

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Abstract

Purpose of Study. This research was aimed to describe: (1) The physical degree of students in XI class of SMA Negeri 3 Sukadana in Kayong Utara Regency; (2) The student's achievement in XI class of SMA Negeri 3 Sukadana in Kayong Utara Regency; (3) The correlation between physical fitness toward student's learning performance in XI class of SMA Negeri 3 Sukadana in Kayong Utara Regency.

Material and Method. The research method used was a descriptive correlative study with a quantitative approach. The technique of data collection was by using measurement and document study. The instruments used were the test of Tes Kebugaran Jasmani Indonesia (TKJI) to know the student's physical degree, where the test was intended to 16-19 years old students. Meanwhile, to get the information related to student's achievement, the instrument used was the students achievement document. The sample of the study were XI class students of SMA Negeri 3 Sukadana in Kayong Utara Regency, which consist of 36 students. The technique of data analysis by using the formula of product moment correlation.

Results. (1) The average fitness of the students physics in this class is 13.4, which is categorized as poor; (2) The average score of the students learning performance in physical education is 80.1, which was categorized as good; (3) In order to find out whether there is correlation or not between the students physical fitness and their physical achievement, the hypothesis was tested by using product moment correlation with $r_{\text{value}} = -0,936 < r_{\text{tabel}} = 0,32$.

Conclusion. Based on the data analysis it can be concluded that there is no significant positive correlation between the student's physical fitness and their learning performance of XI class students in SMA Negeri 3 Sukadana in Kayong Utara Regency.

Keywords: Correlation, Physical fitness, Learning performance

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Introduction

Sports development in the national sports system is carried out through three pillars, namely educational sports, recreational sports, and achievement sports, (Prasetyo et al., 2018). Physical education is an integral part of learning that takes place through formal and informal channels through school and/or extracurricular activities. Recreational sports are sports that aim to increase public awareness to improve health, fitness, fun, and social relations, while achievement sports are dedicated to achievements in regional, national, regional, and international championships (Hamdhan Utama et al., 2021).

The opportunities for physical education and for positive character development arise when the instruction naturally develops the moral aspects of students by involving the cognitive, affective, and psychomotor dimensions of students contextually and in value with the aspects of students' real life situation from time to time for the student's positive future (Abduljabar, 2014). The body is said to be healthy if there is sufficient energy and endurance, it has the strength to carry out activities and in health and comfortable condition, (Dewi, 2016; Prativi, 2013).

Physical activities at school are not only available during class hours but can also be carried out through extracurricular activities. Extracurricular activities are additional activities that take place both at school and outside of school that aim to increase knowledge, skills, and understanding and it also helps to shape the character of students according to their respective interests and abilities, (Fahrizqi et al., 2021; Suganda, 2017). Sport or physical activities is not merely as an event to get medals, and muscle fights, but it is to improve and develop better human resources towards a better quality of life, as in physical, spiritual, social and emotional improvements, (B, 2015).

The daily activities that are carried out are of course inseparable from sport, so in order for our bodies to stay fresh and fit in carrying out daily activities, a people must maintain physical fitness in their bodies. Physical fitness is related to health when the activities are carried out without excessive fatigue (Biddle et al., 2019; Bile & Suharharjana, 2019). Having maintained physical fitness will certainly make the body healthier, fitter and sooner avoid the risk of getting illness earlier. Physical fitness is the body's ability to adjust (adapt) the physical activities given to it from daily work without causing excessive fatigue, (Sepriadi et al., 2017).

Teachers have an important role in education, especially in teaching and learning activities, in order to achieve educational goals, teachers are expected to have various skills that can support the effectiveness and efficiency of educational activities, (Bacharudin Yusuf, 2014; Firmansyah, 2015). Learning achievement is the learning result achieved by students after carrying out the processing of teaching and learning activities (Ahmad Syafi'i et al., 2018), while learning outcomes are a product of evaluating student performance during physical education and sports learning at school (Setiawan & Setiowati, 2014). To find out the progress to which the results have been achieved by a person in learning, an evaluation must be carried out. To determine the progress achieved, there must be criteria (benchmarks) that refer to predetermined goals so that it can be seen how much influence the teaching and learning strategy has on student learning success (Akbar et al., 2021).

Students are individuals who have the potential to develop, and they try to develop their potential through an educational process on certain paths and types of education, (Ramli, 2015). Students of SMA Negeri 3 Sukadana, more precisely students of class XI who have been selected by the researchers in the study are totaled 36 students who were divided into 2 classes, namely XI Science and XI Social Sciences. In this class the researcher received information from the Physical Education, Sports, and Health (PJOK) teacher that it had been a long time since the teacher had carried out learning outside the class specifically for PJOK subjects, after some time ago these class XI students only carried out PJOK learning in theory

in class. This was occurred due to the Covid-19 factor so that the class XI students did not receive PJOK practical lessons.

The information that researchers got from PJOK teachers during observations at SMA Negeri 3 Sukadana showed that physical education activities were not going well, this was influenced by the Covid-19 factor, and learning was mostly carried out online, causing the learning process to not be optimal. So how is it possible to get a good assessment and physical fitness, if students do not carry out physical education activities normally. Based on the background that has been described, the researcher took the title "The correlation between Physical Fitness and Student's learning performance in Class XI SMA Negeri 3 Sukadana, Kayong Utara Regency". The purpose of this study was first to determine the level of physical fitness of class XI students at SMA Negeri 3 Sukadana, Kayong Utara Regency; secondly, to determine the physical learning achievement of class XI students of SMA Negeri 3 Sukadana; and third to determine the relationship between physical fitness and student achievement in class XI SMA Negeri 3 Sukadana, Kayong Utara Regency.

Materials and methods

Study participants.

The research location was at SMA Negeri 3 Sukadana, Kayong Utara Regency. The sample was class XI students in 2021/2022 academic year, a total of 36 students consisting of 2 classes, namely class XI Science and class XI Social Sciences.

Study organization.

The method used in this research is a descriptive method with a correlational study of a quantitative approach. Descriptive research is a research method that aims to describe a particular activity that focuses on a particular object in a clear and systematic way, (Gunawan, Suhairi, and Daryanto, 2022). According to Sugiyono cited in (Megawati and Daryanto, 2022) descriptive research is statistics in the form of calculations with numerical data so that they are analyzed by means of describing the data that has been collected properly. It can be concluded that the descriptive method is a research method that seeks to describe and interpret objects according to what they are through statistical calculations and then analyze the data that has been collected previously. The choice of this descriptive method was based on the research objective, which is to obtain an objective description of the correlation between physical fitness and learning performance in class XI students at SMA Negeri 3 Sukadana, Kayong Utara Regency. The form of research used in this study is correlational. It was used with the intention of examining the correlation between physical fitness and student learning performance in class XI of SMA Negeri 3 Sukadana in Kayong Utara Regency.

The population in this study were students of class XI SMA Negeri 3 Sukadana, North Kayong Regency. The sample in this study were 36 class XI students at SMA Negeri 3 Sukadana, Kayong Utara Regency, aged of 16-19 in the 2021/2022 academic year.

The technique of data collection used in this study was measurement techniques. The instrument used to collect the data was Indonesian Physical Freshness Test (TKJI), while to measure student's achievement by using student report card scores. The instruments used by TKJI are as follows: (1) 60 meters Sprint, with the aims to measure speed; (2) Pull Up for 60 seconds with the aims to measure the strength and endurance of the arm and shoulder muscles; (3) Sit Up for 60 seconds to measure the strength and endurance of the abdominal muscles; (4) Vertical Jump to measure explosive power / explosive power; (5) Run 1200 (age 16-19 years). This test aims to measure cardiovascular, circulatory and respiratory endurance.

Statistical analysis.

Table 1. The Score of Male's Physical Fitness

Sprint 60 m	Pull-Up	Sit-Up	Vertical Jump	Run 1200 m	Score
up to 7.2 "		> 41 times	> 73 cm	Up to 3'14''	5
7.3 -8.3 "		30-40 times	60-72 cm	3'15''-4'25''	4
8.4-9.6 "		21-29 times	50-59 cm	4'26''-5'12''	3
9.7-11.0 "		10-20 times	39-49 cm	5'13''-6'33''	2
11.1 – etc.		00-09 times	< 39 cm	under 6'33''	1

Table 2. The Score of Female's Physical Fitness

60 m Sprint	Pull-Up	Sit-Up	Vertical Jump	Run 1200 m	Score
Up to 8.4 "	> 40 times	> 29 times	> 50 cm	Up to 3'52''	5
8.5 -9.8 "	20-39 times	20-28 times	39-49 cm	3'53''-4'56''	4
9.9-11.4 "	08-19 times	10-19 times	31-38 cm	4'57''-5'58''	3
11.5-13.4 "	02-07 times	03-09 times	23-30 cm	5'59''-7'23''	2
13.5 – etc.	00-02 times	00-02 times	< 23 cm	below 7'23''	1

The results are divided into five categories. In analyzing and set the standard score of the physical fitness test, the standard values, and criteria for assessing the level of physical fitness are determined based on the norms of the Indonesian Physical Fitness Test (TKJI).

Table 3. Physical Fitness Score Categories

No.	Classifications	Score
1.	Excellent	22-25
2.	Good	18-21
3.	Moderate	14-17
4.	Poor	10-13
5.	Very Poor	5-9

The third question of this study was to find out whether there is correlation between the students' fitness and learning performance, the researcher analyzed the data by using product moment correlation analysis. The formula is described as follow:

$$r = \frac{\sum xy - \frac{(\sum x \sum y)}{n}}{\sqrt{\left(\sum x^2 - \frac{(\sum x)^2}{n}\right) \left(\sum y^2 - \frac{(\sum y)^2}{n}\right)}}$$

(Yusup, 2018)

Description:

r = variable correlation coefficient x with variable y.

xy = the result of multiplication between the x variable and the y variable.

- x = score of each item.
- y = score of constant value.
- n = the number of research subject

Results

Based on TKJI norms for determining categories or classifications of students' physical fitness levels, the results of students' physical fitness can be seen in the recapitulation of the results of data analysis in the following table:

Tabl3 4. Physical Fitness of Frequency Distribution

Classifications	Score	Frequencies
Excellent	22-25	0
Good	18-21	4
Moderate	14-17	16
Poor	10-13	14
Very Poor	5-9	2
Total		36

The description of frequency distribution of physical fitness is determined based on the TKJI test result. The TKJI results indicate that the range of 5-9 = 2 2 students with the classification is excellent; the range of 10-13 = 14 students with the classification as Good; the range score 4-17 = 16 students with moderate classification; the range score 18-21 = 4 students with the classification as Poor; and the range score 22-25 = 0 student with the classification Very poor.

Table 5. The Statistic Description of Physical Fitness

Statistic	Physical Fitness
Mean	13,41635
Median	14
Mode	15
Standard Deviation	2,729469
Sample of Variance	7,45
Kurtosis	0,322218
Skewness	-0,12168
Range	13
Max Score	20
Min Score	7
Sum	501
Count	36

Based on the statistical description of physical fitness variable (X), the result of TKJI test showed that the minimum score = 7, the maximum score = 20, the mean = 13,41635, the median = 14, the mode = 15, the standard deviation = 2,729469, the sample of variance = 7,45, the kurtosis = 0,322218, the skewness = -0,12168, the count = 36, the sum = 501, and

the range = 13. Based on the test result of TKJI for XI class students of SMA Negeri 10 Sukadana with the age of 16-19 years old, it was found that the result of the student's physical fitness as $\sum X = 501$, $N = 36$, and mean = 13,4. It can be concluded that the student's physical fitness of can be categorized as Poor.

The student's learning performance result are taken from the students report card which can be listed as follow:

Table 6. The Frequency distribution of Learning Result

Criteria	Score	Frequency
Excellent	86-100	0
Good	71-85	36
Moderate	56-70	0
Poor	41-55	0
Very Poor	<40	0
Total		36

The description of the frequency distribution of student's learning outcomes in the subject of Physical Education, Sports and Health (PJOK) report cards, it can be stated that the learning outcomes of class XI students at SMA Negeri 3 Sukadana, Kayong Utara Regency categorized as Good. The statistical distribution is as followed:

Table 7. The Statistical Distribution of Learning Performance

Statistic	Learning Performance
Mean	80,05556
Median	81
Mode	82
Standard Deviation	2,483597
Sample of Variance	6,168254
Kurtosis	-0,7808
Skewness	-0,26854
Range	10
Max Score	85
Min Score	75
Sum	2882
Count	36

The statistical description of the learning outcome variable (Y) based on the data obtained from the report card scores can be seen by analyzing the description as follows: minimum score = 75, maximum score = 85, mean = 80.05556, median = 81, mode = 82, standard deviation = 2.483597, sample variance = 6.168254, Kurtosis = -0.7808, Skewness = -0.26854, count = 36, sum = 2882, and range = 10. After analyzing the data on student learning outcomes which is taken from the score of the report cards, then $\sum Y = 2.882$ and $N = 36$ and mean = 80.1. So the learning outcomes of class XI students of SMA Negeri 3 Sukadana, Kayong Utara Regency were categorized as good.

To test the hypothesis of this study, the product moment analysis was used with variable (X) as physical fitness and variable (Y) as the learning outcomes. As for testing the hypothesis using product moment correlation with the help of Excel for Windows software, the results can be seen as follows:

Table 8. The Recapitulation of *Product Moment* Correlation Test

Variable	N	Coefficient Correlation	Sig.2-tailed	r value	r table	Status
X – Y	36	-0,936	0,05	-0,936	0,32	Not significant

Discussion

Based on the results of the correlation test in the table above, it was found that the correlation coefficient value between physical fitness and learning performance is -0.936. <r table 0.32 which indicate the correlation coefficient value as negative result. Based on the results of the T test it can be categorized to be insignificant because the calculation of T value is smaller than the significance level, namely the calculation of t value = -15.6209 <0.05. If the significant value is > 0.05, then the hypothesis is accepted otherwise if the significant value is <0.05 then the hypothesis is rejected. The results in this study were not significant because the sample was unable to prove variable data (X) which had a significant effect on variable (Y), since it was found that the student's physical fitness value (X) obtained was categorized as poor, while the learning outcomes (Y) were categorized as good.

It can be described that the correlation between the two variables namely physical fitness and learning achievement is that there is no significant correlation. The coefficient significance test was carried out by consulting the value of r value = -0.936 with r table = 0.32. Thus the hypothesis (Ha) which states "there is a correlation between physical fitness and the student learning performance in class XI of SMA Negeri 3 Sukadana, Kayong Utara Regency" is rejected. In this case a similar study entitled the relationship between the level of physical fitness and learning achievement in physical education, sports and health stated that the results of calculations using SPSS on product moment correlation obtained Sig 0.564 calculation results with an r2 value of 0.9%, this indicates that a correlation between levels physical fitness and Physical Education and Sport (PJOK) learning outcomes show a very weak relationship, so it can be concluded that there is no significant relationship between physical fitness and PJOK learning outcomes in class V students at SDN Randegan Dawarblandong Mojokoro (Nawawi & Hidayat, 2021).

Conclusions

Based on the results of the research described before, it can be concluded that the average result of the physical fitness level of class XI students of SMA Negeri 3 Sukadana, Kayong Utara Regency is 13.4, and in the poor category, while the average result of learning performance of Physical Education for class XI students of SMA Negeri 3 Sukadana, Kayong Utara Regency is 80.1 and in a good category, and from the results of the hypothesis testing, it was known that the product moment correlation value $r_{value} = -0.936$ was smaller than $r_{table} = 0.32$, with a significant level of -15.6209 <0.05. it can be said that there is no positive and significant correlation between physical fitness and student learning performance at SMA Negeri 3 Sukadana, Kayong Utara Regency.

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Conflict of interest

There is no conflict of interest

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