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The relationship of physical fitness and social-economic status and students' learning achievement La relación de la frescura física y el estatus socioeconómico y el logro de aprendizaje de los estudiantes

Endang Sri Suyati, Sonedi, Bulkani, Mohamad Fatchurahman, lin Nurbudiyani, Muhammad Andi Setiawan

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Abstrac. This study aims to determine the relationship between physical fitness and socioeconomic status with student achievement. The methodology used in this study is a correlation. The population of this study amounted to 277 students with a total sample of 73, which were taken using proportional sampling. The instrument used in this study was a physical fitness measurement test using Indonesian physical health tests, socioeconomic status using a questionnaire, and documentation of student report cards to measure student achievement. Data analysis used product-moment correlation and continued with multiple regression with a significance level of 5%. Data analysis in this study was assisted by SPSS version 26 for windows. The first study's results showed a significant relationship between the level of physical fitness and student achievement. The next finding is a significant relationship between parents' socioeconomic status and student achievement. The third research finding is that there is a significant relationship between the level of physical fitness and parents' socioeconomic status and student achievement. Schools and parents need to work together so that students can achieve the expected achievements. All elements of education are expected to provide significant support so that education can be achieved optimally.

Keywords: physical fitness, socioeconomic status, and learning achievement.

Resumen. Este estudio tiene como objetivo determinar la relación entre la aptitud física y el nivel socioeconómico con el rendimiento de los estudiantes. La metodología utilizada en este estudio es una correlación. La población de este estudio ascendió a 277 estudiantes con una muestra total de 73, los cuales fueron tomados mediante muestreo proporcional. El instrumento utilizado en este estudio fue una prueba de medición de la aptitud física utilizando pruebas de salud física de Indonesia, el nivel socioeconómico mediante un cuestionario y la documentación de las boletas de calificaciones de los estudiantes para medir el rendimiento de los estudiantes. El análisis de datos utilizó correlación producto-momento y continuó con regresión múltiple con un nivel de significación del 5%. El análisis de datos en este estudio fue asistido por SPSS versión 26 para Windows. Los resultados del primer estudio mostraron que existía una relación significativa entre el nivel de condición física y el rendimiento de los estudiantes. El siguiente hallazgo es que existe una relación significativa entre el nivel socioeconómico de los padres y el rendimiento de los estudiantes. El tercer hallazgo de la investigación es que existe una relación significativa entre el nivel de aptitud física con el nivel socioeconómico de los padres y el rendimiento de los estudiantes. Las escuelas y los padres deben trabajar juntos para que los estudiantes puedan lograr los logros esperados. Se espera que todos los elementos de la educación brinden un apoyo significativo para que la educación se pueda lograr de manera óptima.

Palabras clave: aptitud física, nivel socioeconómico y logros de aprendizaje.

Introduction

Humans cannot be separated from the education process in their lives. The rapid development of education is driven by the ability or the human condition to get better. Improving the quality of education is carried out to improve the quality of a nation. Departing from that thought, the United Nations, through the UNESCO (United Nations, Educational, Scientific and Cultural Organization), has launched four pillars of education for both the present and the future, namely: (1) learning to know, (2) learning to do, (3) learning to be, and (4) learning to live together. The four pillars of education combine the goals of Intelligence Quotient, Emotional Quotient, and Spiritual Quotient.

Education will help a person develop his potential to have spiritual, religious, self-control, personality, intelligence, noble character, and skills needed by himself, society, nation, and state (Thamrin Tahir et al., 2020). The purpose of learning is a positive change in the behavior of students after participating in teaching and learning activities, such as changes that will psychologically appear in behavior that can be observed through the senses by other people, both speech, motor, and lifestyle (Lee et al., 2019).

Physical fitness is closely related to student health (Bellver-Pérez & Menescardi, 2021). If students' physical fitness is low, students will be susceptible to disease, and their health can be interpreted as less good. Findings in several schools in Indonesia, namely Sampit junior high school, Palangkaraya junior high school, and Kapuas junior high school, show that schools that rarely apply physical

fitness for participants have an impact on weak physical conditions. These weak conditions include students fainting while attending sports lessons and participating in the flag ceremony. With good physical fitness, students can avoid various types of diseases. In addition, with good physical fitness, the supply for the needs of the brain organs for growth and development will be smooth and not hampered. Physical fitness has a very important function in a person's life in carrying out daily activities (Gamboa Jiménez, Soto García, et al., 2022). Physical fitness improves workability for anyone who has it so they can carry out their duties optimally to get better results (Rosa López Ávila et al., 2022). By having a high level of physical fitness, students can carry out daily activities for a longer time than those with a low level of physical fitness (Felix Giovanni Cañon & Ángeles, 2022). Physiologically, a person is said to have good physical fitness if his physical condition can cope with environmental conditions that require muscle work (Chandra et al., 2020). Physical fitness is a physiological condition that can reduce the risk of various diseases and trigger good health so that a person can complete daily life tasks (Donnelly et al., 2016). For the improvement and maintenance of physical fitness, it cannot be separated from physical exercise that fosters a balance of elements of physical fitness (Mercê et al., 2021). One way to foster or maintain physical fitness is to exercise (Cardozo et al., 2019). Physical exercise will help keep a person awake and have a better endurance level to achieve physical fitness (Ryan et al., 2021).

Physical fitness is also related to the type of physical activity divided into several types: aerobic activities (exercises that require oxygen), anaerobic activities (exercises that do not require oxygen), and those that depend on skills (López-Nuevo et al., 2021). Physical fitness can be obtained by doing motor activities to get physical fitness (Gamboa Jiménez, Jiménez Alvarado, et al., 2022). Various physical fitness tools help make it easier to obtain physical fitness—the higher the socioeconomic status of a person, the more diverse ways to obtain physical fitness. Socioeconomic status is the position occupied by individuals or families concerning the generally accepted average measure of cultural ownership, effective income, ownership of goods, and participation in group activities of their community (Ahmad et al., 2022). Socioeconomic status is a person's level based on his social position or work to meet his needs (Setiati & Jumadi, 2022). In addition to being determined by material ownership, a person's socioeconomic status can be based on several elements of human interest in his life, status in community life, namely employment status, status in the kinship system, position status, and religious status adopted (Muramatsu-Noguchi et al., 2022). Status is the place or position of

a person in a social group concerning other people or relates to other groups within a larger group (Rashidi Fakari et al., 2022).

In contrast, social status is a person's place in general in his community concerning other people in terms of his social environment, achievements, rights, and obligations (Lin et al., 2022). (Vyas et al., 2021) argues that «social status factors that influence a person's characteristics include wealth, power, and prestige. Socioeconomic conditions are an indicator of welfare seen in the community (Bellanthudawa et al., 2022). Differences in socioeconomic levels influence the emotional development of children or students (Upeniaks et al., 2022).

The condition of socioeconomic status can be seen from the type of work and the type of parents' position in society, based on the amount of income, education, and ownership of valuables (Savithiri, 2020). By having status, a person can interact well with other individuals; even in many daily interactions, a person does not know someone individually but only knows the status of the individual. Parents' socioeconomic status is related to the position and prestige of a person or family in society, as well as efforts to create goods and services to fulfill both physical and spiritual needs (Hardiyanti et al., 2022). Indonesia, as a developing country, has various economic levels. Family economic conditions affect the ability of parents to provide educational facilities and the physical fitness needs of students (Davis & Dunn, 2022). In several educational institutions in Indonesia, fulfilling the need for education and physical fitness is still in the low and medium categories for parents with middle to lower economic conditions. Good physical fitness can improve student achievement so that learning goals at school can be achieved.

Learning achievement is one indicator that can show the self-quality of students (Looi et al., 2022). Learning achievement is a mental or psychic activity, mastery of knowledge, and subject science skills possessed by students and is operationalized in the form of indicators in the form of values recorded in the education system. The differences in the socioeconomic level of parents physically affect the facilities provided by parents or guardians to students (Dewi, 2022). A more real difference is when students' parents can organize and provide all things in the form of material such as private lessons or others. Judging from a situation like this, parents' different knowledge about education, food intake, nutrition, and child development will affect children's physical fitness and learning achievement. Moreover, if students are in an unhealthy condition in learning, the absorption of knowledge will not be optimal. Based on the background above, this article aims to investigate the relationship between physical fitness and socioeconomic status with student achievement.

Method

In conducting the research, the researcher used correlational research. Correlation research aims to determine the relationship between two or more variables without any attempt to influence these variables so that variable manipulation does not occur (Pérez-Contreras et al., 2021). This correlational research is used to determine the relationship between the level of physical fitness and parents' socioeconomic status and student achievement. This study has three variables, namely the level of physical fitness, socioeconomic status, and learning achievement.

Population and Sample

The population is the entire individual or object intended to be studied, which will later be subject to generalization (Fatchurahman et al., 2021). Generalization is a way of concluding a wider group of individuals or objects based on data obtained from smaller individuals or objects (Bulkani et al., 2022). A small number of individuals or objects used as representatives in the study are called samples. The population used in this study was junior high school students, totaling 277 students. In this study, the sample was taken using the proportional sampling method. A proportional sampling technique is a sample calculated based on a comparison. This study proportionally determined samples, namely male and female students in junior high school. Male and female students in the population were 135 male students and 144 female students, with a total of 277 students. Seeing the total population in this study, which was more than 100 people, the researchers took 10% of the existing population as a sample of 73 people. The details of the research sample were seen from the gender of 31 men and 42 women. The sample in terms of age is divided as follows; 21 people 13 years old, 35 people 14 years old, and 17 people 15 years old.

Research instrument

The instrument used to determine students' level of physical fitness is the Indonesian Physical Fitness Test (Maryani et al., 2021). The instrument used to explore parents' socioeconomic status is the socioeconomic status scale (Rashidi Fakari et al., 2022). The socioeconomic status instrument of the parents is based on the following indicators: (1) education level (father/mother), (2) type of occupation (father/mother), (3) income, (4) transportation, (5) Pocket money, (6) Location of residence, (7) Ownership of household goods or assets and from these indicators are then developed into questions and statements, totaling 20 points. The tool used to measure student achievement uses a ledger, namely the average value of report cards. The

research instrument was used to collect data from the research sample. In this study, the procedure for filling out the instrument was done by telling the filling procedure to the research subject to minimize errors in filling out the research instrument.

Data analysis technique

Data analysis is an effort or method to process data into information so that the characteristics of the data can be understood and useful for problem-solving (García et al., 2020). Analysis of the data in this study using the SPSS 26 application for windows. Data analysis carried out in this study is in the form of normality test, linearity test, multicollinearity test, and hypothesis testing.

Result

The research data were obtained from questionnaires given to students and filled out by 73 students; physical fitness tests and achievement data were also obtained from the documentation of student report cards. In this study, one questionnaire was used, namely the questionnaire for the parents' socioeconomic status (X2) variable with as many as 15 items. The assessment of statement items for the variable of Parent's socioeconomic status was carried out in an assessment divided into four alternative answers with two types of statements, namely positive and negative. Respondents in this study amounted to 73 students. The data obtained from the field is manifested in the data description of each independent and dependent variable. Data analysis includes Mean (M) and standard deviation.

Analysis Prerequisite Test

The data normality test aims to determine whether the data from the variables are normally distributed or not. To identify normally distributed data is to look at the 2-tailed significance value; if each variable has a value of more than 0,05, it can be concluded that the research variables are normally distributed. The results of the normality test from the statistical analysis can be seen in Table 1 below:

Table 1.
Normality Test Calculation Results

No	Variable	Significance	Condition	Description
1	Physical fitness	0,121	> 0,05	Normal
2	Socio-Economic Status	0,515	> 0,05	Normal
3	Learning achievement	0,611	> 0,05	Normal

Linearity test

The condition is linear if the P-value exceeds 0.05 at the 5% significance level. Below table 2 shows the results of the linearity analysis of the test:

Table 2.
Linearity Test Calculation Results

No	Variable	Significance	Condition	Description
1	X1 dan Y	0,768	> 0,05	Linear
2	X2 dan Y	0,536	> 0,05	Linear

Table 2 above shows that the p-value is more than 0.05. P-value applies to all independent variables with the dependent variable, so it can be concluded that all independent variables with the dependent variable have a linear correlation, then the regression analysis can be continued.

Multicollinearity Test

The multicollinearity test was carried out using statistical analysis, and the results of the multicollinearity test are presented in table 3 below;

Table 3.
Multicollinearity Test Calculation Results

No	Variable	Tolerance	VIF	Description
1	Physical fitness	0,994	1,006	not multicollinearity
2	Social status Economy	0,994	1,006	not multicollinearity

The analysis results in table 3 show that the tolerance value of the two variables is more than 0.1 and the VIF value is less than ten, so there is no perfect correlation between the independent variables or multicollinearity.

Hypothesis test

The hypothesis is a temporary answer to the formulated problem. Testing the first and second hypotheses was carried out using Pearson’s Product Moment correlation technique by looking at the r-count value on the data processing results with the help of the SPSS version 26.0 computer program. The basis of decision-making is that if r is positive, it can be concluded that there is a positive relationship between the independent and dependent variables. Meanwhile, to test the third hypothesis, multiple correlation analysis techniques are used to determine the relationship between the two independent and dependent variables and test the significance using the F test. An explanation of the results of hypothesis testing in this study is as follows:

First Hypothesis Testing: The first hypothesis states that «there is a significant relationship between the level of physical fitness and student achievement.

The basis for decision-making uses the correlation coefficient (rx1y) between the variable level of physical fitness (X1) and student achievement (Y). If the r-count is positive, there is a positive relationship between the independent and dependent variables.

Table 4
The relationship between physical fitness and learning achievement

	Physical fitness	Parents' Socioeconomic Status	Student achievement
Physical fitness	Pearson Correlation	1	.078
	Sig. (2-tailed)		.511
	N	73	73

The statistical analysis results in table 4 show a score of -0.089 with a 2-tailed significance level of 0.454. The analysis results show that R count 0.454 is greater than R table 0.227, so it can be concluded that there is a positive relationship between physical fitness and learning achievement.

Second Hypothesis Testing: The first hypothesis states that «there is a significant relationship between parents’ socioeconomic status and student achievement.

The basis for decision-making uses the correlation coefficient (rx2y) between the variables of parents’ socioeconomic status (X2) and student achievement (Y).

Table 5
The relationship between parents' economic condition and learning achievement

	Physical fitness	Parents' Socioeconomic Status	Student achievement
Parents' Socioeconomic Status	Pearson Correlation	.078	1
	Sig. (2-tailed)	.511	.267*
	N	73	73

Product moment correlation statistical analysis in table 5 shows the calculated r-value is 0.267 with a 2-tailed significance level of 0.023, while the R table is 0.227. These results indicate that R arithmetic is greater than the r table (0.267 > 0.227), so it can be seen that there is an influence between the economic conditions of parents and student achievement.

Third Hypothesis Testing: The third hypothesis reads, «there is a jointly significant relationship between the level of physical fitness and the socioeconomic status of parents and student achievement.

Multiple regression analysis was carried out with the help of the SPSS version 26.0 computer program to test the hypothesis. The summary of the results of the multiple correlation analysis can be seen in Table 6 below:

Table 6.
Calculation Results of the Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.289 ^a	.083	.057	1.89801

The analysis results in table 6 show that the coefficient (R_y) is 0.083 in a positive direction. Analysis results mean a positive relationship between the level of physical fitness, parents' socioeconomic status, and student achievement. To determine the significance of multiple correlations using the F test. The significance test was used to determine the significance of the correlation between the level of physical fitness (X1) and the socioeconomic status of parents (X2) together with student achievement (Y). The basis for decision making is if the calculated F is greater than the F table at a significance level of 5% or the significance value is smaller than the predetermined level, namely 0.05, the independent variable is significant with the dependent variable.

Table 7.
F-Test Calculation Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	22.909	2	11.454	3.180	.048 ^b
1 Residual	252.171	70	3.602		
Total	275.080	72			

Based on the statistical test analysis results in table 7, the F value is 3.180, and the F-count significance value is 0.048. When compared with the F-table value of 3.126, the F-count value $>$ F-table ($3.180 > 3.126$) and the F-count significance value is less than 0.05 ($0.048 < 0.05$). From this test, it can be concluded that there is a positive and significant relationship between the level of physical fitness (X1) and the socioeconomic status of parents (X2) together with student achievement (Y), so the third hypothesis is accepted.

Discussion

The Relationship between Physical Fitness Levels and Student Achievement

The results showed a positive and significant relationship between physical fitness and student achievement. This result is evidenced by the results showing that the calculated r-value is greater than the r table ($-0.089 < 0.227$), so there is a significant relationship between physical fitness and student achievement. Thus, the level of physical fitness influences student achievement in the sample studied. However, it should be noted that in this study, the researcher had a limited number of samples, namely only at the junior high school level, with a total of 73 people. If the number of samples increases, it is possible to get different results from this study. The results showed a relationship between physical fitness and learning achievement. Besides that, other factors affect learning achievement from within and outside the

individual. Factors from within include interest in learning, motivation to learn, self-confidence, and perseverance. At the same time, factors that come from outside are the state of the school, home, and the environment where students are. As expressed by (Suna et al., 2020) states that: Factors that affect academic achievement, including intelligence, interest, attention, emotional maturity, and readiness of students, can have a significant effect on student learning outcomes in improving learning processes and outcomes which ultimately affect achievement.

Relationship between Parents' Socioeconomic Status and Student Achievement

The results showed a significant positive relationship between socioeconomic status and student achievement. These results indicate that the r-count value is greater than the r-table ($0.267 > 0.227$), and the significance value of 0.023 is smaller than 0.05 ($0.023 < 0.05$). So there is a significant relationship between socioeconomic status and student achievement. Thus, the higher the socioeconomic status, the higher the student's learning achievement. This result follows the framework of thinking in this study, where high socioeconomic status will also lead to high student achievement.

The socioeconomic conditions of parents help children achieve better achievements. Learning facilities and complete nutritional intake will encourage children to achieve better learning achievements (Kim et al., 2019). Parents' incomes that are getting bigger tend to improve the quality of family education, including children, while parents' low incomes will tend to meet their basic needs less well (Bulkani, Setiawan, et al., 2022). The sample in this study shows that many parents' economic status is classified as good to support student learning. It can be concluded that the skills students possess are learning achievements related to socioeconomic status. These results are supported by research (Malecki et al., 2020), who concluded a positive relationship between socioeconomic status and student achievement. So it can be said that the higher the socioeconomic status, the higher the student's learning achievement.

The Relationship Between Physical Fitness Levels and Parents' Socioeconomic Status and Student Achievement

The third hypothesis test analysis showed a significant relationship between physical fitness and parents' socioeconomic status and student achievement. Statistical analysis showed the correlation coefficient ($R_{Y1,2}$) of 0.083 and obtained an F-count of 3.180, while the F-table at a significance level of 5% was 3.126. These results indicate that there is a positive and significant relationship between

the level of physical fitness (X1), the socioeconomic status of parents (X2), and student achievement (Y). So it can be said together that the higher the level of physical fitness and social status, the higher the student's learning achievement. Factors that affect student achievement are the level of physical fitness and parents' socioeconomic status. A person's physical fitness plays an important role in shaping student achievement. Physical fitness is one of the driving factors for a child to excel in academics (Zakharova et al., 2020). Good physical fitness makes a person's body healthier and physically able to carry out activities in the learning process at school (Yang, 2020). Another factor is parents' socioeconomic status; with high socioeconomic status, students will be more confident and enthusiastic in learning to compete with their friends to excel in class because students are more focused on the learning process. In addition, the analysis also obtained an R Square value of 0.083, meaning that 8.3% of student achievement is related to the level of physical fitness and parents' socioeconomic status. In comparison, 91.7% is related to other factors not analyzed in this study. Although the study's results showed a significant relationship between variables, the researcher had limitations in the study. This study's weaknesses and limitations are that implementing physical fitness tests in schools is not optimal. (2) Researchers do not know the respondent's mood at the time of the physical fitness test (maybe sad, happy, etc.) (3) Collecting data using a questionnaire allows for factors that cannot be explored further. This study provides information and how the socioeconomic factors of parents have a relationship with student achievement. Student achievement is not only related to parents' socioeconomic status but also many other factors

Conclusions

Based on the analysis of this research, the following conclusions can be drawn: (1) there is a significant relationship between the level of physical fitness and student achievement. Students who have good physical fitness can complete many things, including being able to follow learning well so that it has an impact on increasing students' academic achievement. (2) There is a significant relationship between parents' socioeconomic status and student achievement. The higher the economic level of parents, the fulfillment the needs of students can be fulfilled properly. Students will get adequate learning facilities and impact the quality and good learning outcomes to create maximum learning achievement. (3) Taken together, there is a significant relationship between the level of physical fitness, parents' socioeconomic status, and student achievement. Students with good academic achievement

have good physical fitness and family socioeconomic levels. However, learning achievement can also be caused by factors from within or outside the individual.

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