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THE EFFECT OF HEALTHY LIVING BEHAVIORS, PHYSICAL EDUCATION LEARNING EQUIPMENT AND BODY WEIGHT ON THE PHYSICAL FITNESS OF JUNIOR HIGH SCHOOL STUDENTS

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Abstract The purpose of this research is to determine the influence that arises on healthy living behaviors, learning equipment, and weight loss on the physical fitness of junior high school students post-covid. This research was designed using associative quantitative research methods, with test and non-test techniques then analysis techniques using a path analysis approach. The population in the study was junior high school students totaling 94 students, with sample selection using the volunteer sampling method, which is a with the willingness of students to participate in the study. Based on the results of this study, it can be concluded that (1) There is a significant influence of healthy living behavior on physical fitness by 16.81% (2) There is a significant influence of physical learning equipment on physical fitness by 19.18% (3) There is a significant influence of body weight on physical fitness by 3.68% (4) There is a significant influence of healthy living behavior on body weight by 12.04% (5) There is a significant influence of learning equipment assessment of body weight by 3.65% (6) There was a significant influence of healthy living behavior through body weight on physical fitness of 1.9229 with the calculation of sobel test statistics and (7) There was a significant influence of learning equipment through body weight on referee performance of 2.0047 with sobel test statistical calculation.

Keywords: Junior High School Student; Healthy Living Behaviors; physical education learning equipment; Weight Loss; Physical Fitness



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INTRODUCTION

The education curriculum in Indonesia has changed related to physical education subject hours which were increased, from the previous two hours per week to three hours per week. In relation to the development of the world of education, the Ministry of Education and Culture issued Circular Letter Number 4 of 2020 concerning the Implementation of Education Policies in the Emergency Period of the Spread of Covid, which states that the learning process is carried out at home through online/distance learning.

Based on observations, at the beginning of the covid-19 pandemic, learning activities are still far from what is expected, the learning methods used are not optimal because they tend to only attach importance to learning outcomes rather than processes. Learners tend to be passive and less active in learning activities (Arief, Pelana, and Sulaiman 2022).

As an educator, we also experienced difficulties in teaching in the post-pandemic period including teaching activities for teachers, physical education which very clearly has fundamental problems because most physical education activities are carried

out by practicing in the field. This problem is an academic worldwide study and at the same time a challenge for teachers to how in the midst of this pandemic to be able to carry out physical learning effectively and efficiently and of course continue to implement health protocols for the spread of the COVID-19 virus.

In this post-pandemic period, an activity in learning physical education sports if every school has good or adequate learning equipment, the results achieved by each child or student akan maximum with satisfactory results and can make the students themselves become happy and enthusiastic about learning or enthusiasm for activities.

Sports Health online mode in the implementation of movement is thought to be able to increase the prevalence rate of overweight in students. The COVID-19 pandemic has certainly greatly affected students' physical fitness. Having a good physical fitness status and an ideal body is everyone's expectation. Overweight is no exception. The main goal to be achieved by overweight is to be able to stabilize weight so that it can improve its physical fitness (Nugroho et al. 2021). One of the ways to improve a person's physical fitness is to exercise

properly and regularly so that the body will continue to adapt according to its capacity (Rika Sepriani et al. 2018).

In the post-pandemic period, PJOK learning students experienced a decline in their physical fitness level due to the lack of physical activity of students during the Covid-19 period. This can be seen when the health assessment teacher conducts learning through physical fitness practice materials, students feel exhausted when doing physical fitness activities.

With the condition that occurs, it will give a decrease in the physical condition of students, considering that they while at home do not pay attention to physical activity, so there must be a decrease in physical condition, especially in the aspects of heart strength and fitness. In addition, the condition also increases the prevalence of students with overweight body conditions.

Based on the objectives of physical education above, learning physical education, sports and health is directed at fostering better physical growth and psychological development, as well as forming a healthy and fit lifestyle throughout life. Physical education provided in

schools must refer to the applicable physical education curriculum. The material taught at each level of education must be chosen according to the stage of growth and development of the child and the level of education of the child (Hariri, Asmawi, and Setiakarnawijaya 2021).

Physical fitness is not only needed by sports athletes, but also needed by everyone to be able to carry out the demands of physical tasks every day. In general, physical fitness can be defined as the body's ability to perform various physical activities without experiencing excessive fatigue, and still feel fit the next day to perform the next physical task.

Physical fitness can be translated into other terms such as: physical freshness, physical ability and physical fitness. Physical fitness can be translated into other terms such as: physical freshness, physical ability and physical fitness. Literally the meaning of *Physical Fitness* is physical fit or physical fitness. But Fit can also mean healthy, so fitness can mean health or can be interpreted as physical fit or physical fit (Giriwijoyo and Sidik 2012).

Physical fitness develops body skills, thinking skills, perseverance so

that they have a positive attitude towards learning. Through physical fitness students realize the various potential abilities of their bodies and make judgments of their own abilities for their own progress. The goal of physical fitness is to provide opportunities for children to learn various activities that foster and develop children's potential both in physical, mental, social emotional and moral aspects (Achmad Paturusi 2012).

Behavior is an individual's response to a stimulant or an action that can be observed and has a specific frequency, duration and purpose that is either based or not. One form of cultivation of a child's personality is given through the education of healthy living behaviors, both in social, physical, and psychic forms. This personal planting can be started early in school through various learning programs (Yufiarti, Edwita, and Suharti 2019).

One form of healthy living behavior is reflected in human resources who are healthy and of good quality physically, mentally, and socially and have optimal productivity. For this reason, efforts are needed to maintain and improve health continuously

starting from the womb, toddler age, school age, to old age. young. Health education is needed in the stages of forming clean and healthy living behaviors (Anisa and Ramadhan 2021).

Healthy living behaviors are healthy behaviors that students show in their daily activities (Rahmat, et al 2016). The indicators: healthy living behaviors at school and healthy living behaviors at home, namely: breakfast before going to school, regular eating, snacks in clean canteens/stalls, eating healthy food, washing hands with soap and clean water before eating, brushing teeth, cleaning nails and hair, using school latrines, keeping school latrines clean, using clean clothes, using clean shoes and socks, throwing garbage in its place, cleaning classrooms and school environment, getting used to living clean at home (for example: washing feet and using clean clothes before going to bed, using a clean bed, eating with a spoon), and participate in sports activities and physical activity on a regular basis.

In carrying out sports activities, there are learning equipment that supports its implementation. Learning equipment and sports infrastructure are a permanent form, covering all sports fields and buildings and all kinds of

equipment for carrying out sports activities. Sports infrastructure is one of the main factors in the implementation of sports activities (Hanafi Maulana 2021).

One of the problems that affects the physical education learning process is the ineffectiveness of the implementation of physical education learning. This problem can be seen from the limited infrastructure that is lacking to carry out physical activities (Faris Wijaya 2017). As is happening at this time is due to the Covid-19 pandemic which makes students learn from home, of course, for learning Health and sports services education is very unfit to do at home. Because it is not necessarily that students at home have proper infrastructure to carry out sports activities and standard sports equipment to be used.

There are five main dimensions of service quality, namely: physical evidence (tangibles), reliability factors (reliability), responsiveness factors (responsiveness), feasibility factors (Assurance) and empathy factors (Empathy). This dimension is often the first concern in supporting the learning process, good physical evidence will affect the perception of the use of

services to the quality of the institution. The requirements for Physical Education facilities and infrastructure include: safe, easy and cheap, attractive, spur to move, according to needs, according to the purpose, not easily damaged and in accordance with the environment (Yulianti and Makorohim 2020).

The habit of consuming ready-to-eat foods and foods with unbalanced nutrition makes the body store a lot of calories. Rarely moving, little activity and rarely exercising make the body's metabolism reduced, fat that is burned to produce energy becomes less so that there is a buildup of excess fat in the body and causes obesity or obesity.

The main goal to be achieved by overweight is to be able to stabilize weight so that it can improve its physical fitness (Nugroho et al. 2021). One of the ways to improve a person's physical fitness is to exercise properly and regularly so that the body will continue to adapt according to its capacity (Rika Sepriani et al. 2018).

According to (Sardinha et al., 2014) reinforce the statement that children and adolescents should have more opportunities for physical activity so that it will improve cardiorespiratory fitness and improve the child's weight

status during school, due to the synergistic effects of cardiorespiratory fitness and student weight status. There are so many problems that will be caused by obesity including hypertension, kidney failure, hepatic cirrhosis and even depression, so this needs serious attention.

Exercise properly and regularly so that the body will continue to adapt according to its capacity. If the physical education learning equipment at home is adequate, students will be enthusiastic about doing sports activities. And the material given by a teacher is also conveyed to the students. If students do not have healthy and have clean living behaviors to exercise, there will be such a thing as weight gain or overweight that makes students lazy to move, lately that's the fact that happened.

Based on the reality on the ground, of course, this is an important concern. On that basis, researchers are interested in conducting a study entitled "The Effect of Healthy Living Behaviors, Physical Education Learning Equipment and Weight on the Physical Fitness of Post-Covid Junior High School Students".

METHOD

The research design used in the study is to use an associative quantitative approach with tests and non-tests while the analysis technique uses a path analysis approach (*path analysis*) which is to analyze patterns of causal relationships between variables, which then aim directly or indirectly from a set of exogenous variables (free) and endogenous variables (bound).

The authors took four research data, three exogenous studies (free) and one endogenous variable (bound) namely Healthy living behavior (X_1), Physical Education learning equipment (X_2), weight (X_3), and physical fitness of junior high school students (Y).

Population and Sample

The selection of samples in this study used the Voluntary response method Non-probability sample collection technique where the sample is an individual who voluntarily wants to become a research section where the study asks permission from the principal and parents so that students can become research samples.

After obtaining permission from the school and parents, then a sample of 94 students was obtained, of which the sample was class VIII junior high school students drawn from the student

population of State Junior High School 14.

Research Instrument

The research instruments used in this study are 1) The Indonesian Physical Fitness Test uses sit up, pull up, vertical jump, 50-meter run and 800-meter run for women, 100-meter run for men, 2) Healthy living behavior test using a questionnaire test with 35 question questions, 3) A physical learning equipment test using a questionnaire test totaling 35 question questions, 4) Weight test using weight scales to determine a person's weight.

Data Analysis

The data analysis technique carried out in this study went through two stages of analysis, namely descriptive and inferential data analysis. First, the data will be analyzed discriptively, this is done to analyze the data that has been collected to obtain a characteristic picture of the distribution of values from each variable studied. Based on the thinking framework that has been developed, the endogenous variables in this study are physical fitness (Y), while the exogenous variables are healthy living behaviors (X₁), Physical Education Learning Training Aids (X₂), and Weight (X₃), the

mode of structural equations in this study consists of two types of structures.

RESULTS AND DISCUSSION

1. Structure Model Testing 1

Based on table 1, it appears that R² of 0.389 means that 38.9% of the variable variable weight (X₃) can be explained by the variable healthy living behavior (X₁) and the learning equipment (X₂). So the error (ϵ_1) = 1-R² = 1 - 0.389= 0.611. The path coefficient (X₁) against (X₃) or (p₃₁) = 0.347 and (X₂) against (X₃) or (p₃₂) = 0.328 obtained the value of Sig.= 0.027/2 = 0.000 < α = 0.05 and Sig.= 0.036/2 = 0.00 < α = 0.05. From the test results of structural model 1 is significant.

Table 1.

Structure Model Testing 1

Variable	R2	Koef Beta	P-Value/2	Information
X ₁ , X ₃ (p ₃₁)	0,389	0,347	0,027	Significant
X ₂ , X ₃ (p ₃₂)	0,424	0,328	0,036	Significant

2. Structure Model Testing 2

Based on table 2, it appears that an R Square (R²) of 0.884 means that 88.4% of the variable variable of physical fitness (Y) can be explained by the variables of healthy living behavior (X₁), learning equipment (X²) and body weight (X₃). So, the error (ϵ_2) = 1- R² =

$1 - 0.907 = 0.093$. Based on Anova in table 4.20, It is obtained that $F_o = 293.304$; $db1 = 1$; $db2 = 90$, $p\text{-value } 0.000 < 0.05$ or H_o rejected. Thus, healthy living behavior variables (X_1), learning equipment (X_2), weight (X_3) simultaneously affect the physical fitness (Y) of junior high school students post-covid.

Table 2.

Structure Model Testing 2

		Model	ANOVA	
		1		Df
R		.952	Regressi	3
R Square		.907	on	90
Adjusted R Square		.904	Residual	93
Std. error of the Estimate		.572	Total	
Change Statistic	R Square	.021	F	293.304
	Change	20.488	Sig.	.000 ^d
	F	1		
	Change	90		
	df1	.000		
	df2			
	Sig. F			
	Change			

a. Dependent Variable: *Kebugaran jasmani*

b. Predictors: (Constant), Berat badan, Peralatan pembelajaran penjas, perilaku hidup sehat

Based on table 3, the Path coefficient (X_1) against (Y) or (p_{y1}) = 0.410; $t_o = 6.844$, $p\text{-value } 0.000/2 = 0.000$ or H_o rejected. Thus, healthy living behaviors (X_1) positively affect physical fitness (Y). Path coefficient (X_2) to (Y) or (p_{y2}) = 0.438; $t_o = 6.418$, $p\text{-value } 0.000/2 = 0.0$ or H_o rejected. Thus, the learning equipment (X_2) positively affects physical fitness (Y), and the path coefficient (X_3) against (Y) or (p_{y3}) =

0.191 to $t_o = 4.526$ $p\text{-value } 0.000/2 = 0.000$ or H_o rejected. Thus, body weight (X_3) negatively affects physical fitness (Y). Based on the test results of structural model 2, the conclusion is significant.

Discussion

Based on the results of testing all hypotheses that have been carried out in the hypothesis testing section, it can be stated that:

First, an individual test of healthy living behavior variables on physical fitness results obtained the results of the path coefficient $P_{31} = 0.410$ with a value of $Sig. = 0.000/2 = 0.0000 < \alpha = 0.05$, so that H_a accept and H_o is rejected. This means that there is a direct influence of healthy living behaviors on the physical fitness of junior high school students. Based on these results, the magnitude of the direct influence of healthy living behaviors on the physical fitness of junior high school students was 16.81%, while the rest were other factors not explained in this study.

Second, Individual tests of learning equipment variables against physical fitness of junior high school students obtained the results of the path coefficient $P_{32} = 0.438$ with a Sig value. = $0.000/2 = 0.000 < \alpha = 0.05$, so that H_a accept and H_o is rejected. That is, there is

a direct influence of the physical learning equipment on the physical fitness of junior high school students. Based on these results, the magnitude of the direct influence of physical learning equipment on the physical fitness of junior high school students was 19.18%, while the rest were other factors not described in this study.

Third, Individual tests of weight variables on physical fitness of junior high school students obtained the results of the path coefficient $P_{y1} = 0.191$ with a value of $Sig. = 0.000/2 = 0.000 < \alpha = 0.05$, so that H_a accept and H_o is rejected. That is, there is a direct influence of weight on the physical fitness of junior high school students. Based on these results, the magnitude of the direct influence of body weight on the physical fitness of junior high school students was 3.68%, while the rest were other factors not described in this study.

Fourth, Individual tests of healthy living behavior variables on the body weight of junior high school students obtained the results of the path coefficient $P_{y2} = 0.347$ with a Sig value. $= 0.027/2 = 0.0135 < \alpha = 0.05$, so that H_a accept and H_o are rejected. That is, there is a direct influence of the physical learning equipment on the physical

fitness of junior high school students. Based on these results, the magnitude of the direct influence of healthy living behaviors on the body weight of junior high school students was 12.04%, while the rest were other factors not described in this study.

Fifth, Individual tests of learning equipment variables against the body weight of junior high school students obtained the results of the path coefficient $P_{y3} = 0.328$ with a Sig value. $= 0.036/2 = 0.018 < \alpha = 0.05$, so that H_a accept and H_o is rejected. That is, there is a direct influence of the learning equipment on the weight of junior high school students. Based on these results, the magnitude of the direct influence of body weight on the physical fitness of junior high school students was 3.65%, while the rest were other factors not described in this study.

Sixth, Statistical testing of the indirect influence of healthy living behaviors through body weight on the physical fitness of junior high school students using sobel tests testing using the Sobel Test Calculator for the Significance of Mediation. Based on the results of the sobel test using the Sobel Test Calculator for the Significance of Mediation online, obtained a statistical

sobel test value of 1.9229 and a p-value of $0.0444 < 0.05$, the direct influence of healthy living behavior through body weight on the physical fitness of junior high school students is significant.

Seventh, Statistical testing of the indirect influence of learning equipment through body weight on the physical fitness of junior high school students using sobel tests testing using the Sobel Test Calculator for the Significance of Mediation. Based on the results of the sobel test using the Sobel Test Calculator for the Significance of Mediation online, obtained the sobel test statistical value of 2.0047 and a p-value of $0.0449 < 0.05$, the effect of the assessment learning performance on physical fitness through body weight is significant.

CONCLUSION

Conclusions were drawn based on research findings with exogenous variables consisting of healthy living behaviors (X_1), learning equipment (X_2) and weight (X_3). The endogenous variable is the physical fitness of post-covid junior high school students (Y), as follows:

1. Healthy living behaviors have a direct and significant effect on the physical fitness of junior high school students post covid.

2. The learning equipment has a direct and significant effect on the physical fitness of junior high school students post-covid.
3. Weight loss has a direct and significant effect on the physical fitness of junior high school students post covid.
4. Healthy living behaviors have a direct and significant effect on the weight of junior high school students post covid.
5. Learning equipment has a direct and significant effect on the weight of junior high school students post-covid.
6. Healthy living behaviors indirectly affect physical fitness through the weight of junior high school students post covid.
7. Learning equipment indirectly affects jasmnai fitness through the weight of junior high school students post-covid.

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