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Relationship Between Physical Activity, Healthy Lifestyle Behavior, And Physical Fitness Of Palu City Esport Players

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Abstract

Research Objectives 1) Analyze the Level of Physical Fitness 2) Analyze the relationship between physical activity and physical fitness. 3) Analyze the relationship between healthy living behavior and physical fitness. 4) Analyzing the relationship between physical activity, healthy living behavior, and physical fitness in Palu City sports players. This research is a quantitative correlational study; the sample was esports players in Palu City, totaling 160 people. Data collection techniques and instruments used include questionnaires and multistage fitness test documentation. The variables in this study are physical activity, healthy living behavior, and physical fitness. Data analysis techniques use prerequisite tests and hypothesis testing. The results in this study are 1) The physical fitness level of esports players in Palu City is in a suitable category with a percentage of 76%. 2) The relationship between physical activity and physical fitness is in the weak correlation category. 3) The relationship between living behavior and physical fitness is in the fragile correlation category. 4) The relationship between physical activity, healthy living behavior, and physical fitness is in the weak correlation category. The conclusion of this study shows that the physical fitness level of Palu City sports players is in the sufficient category; the lack of physical activity and the application of healthy living behaviors significantly affect the quality of physical fitness of Palu City esports players.

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INTRODUCTION

Physical fitness is the body's ability to carry out physical activity without causing excessive fatigue. The condition of physical activities greatly influences physical fitness in a person. Physical condition is critical and essential for a person to carry out daily activities. So good physical fitness will impact carrying out activities to be fresher and not tired quickly. Sinuraya &; Barus, 2020). Physical fitness and health are proven to contribute to improving motor skills in every human being

(Herjanata et al., 2022). Physical fitness is a good measure of the ability to perform physical activity and exercise and is an essential indicator of health (Ługowska &; Kolanowski, 2023).

Physical fitness can be defined as a person's ability or ability to be able to carry out or perform activities or performance that require strength, coordination, skill, and endurance efficiently that does not result in significant or excessive fatigue (Pujianto, 2019). Physical fitness is the body's capacity and ability to adapt to the physical load (from daily work performed) without causing significant fatigue. Irwansyah et al., 2022). Physical fitness is a condition where a person can move optimally without experiencing significant fatigue (Kuniano, 2015). Physical development is closely related to the development of motion in humans (Rohman &; Soegiyanto, 2013). There are various ways to obtain optimal physical fitness, including choosing foods that contain many nutrients, getting enough rest, and routinely doing activities that increase the efficiency of body functions to improve physical fitness. (T egar Prasetyo Ferdianto, 2017). Doing physical activity is not always associated with exercise but can be done in simple ways, such as working or doing activities at home (Anindita et al., 2016)

Physical activity can be defined as any bodily movement produced by the action of skeletal muscles capable of causing an increase in energy (Suarez-villa et al., 2021). Physical activity is widely recognized as an essential determinant of physical and emotional development in children and adolescents (Schmidt et al., 2020). Human physical activities are very dependent on survival, such as health (Chen et al., 2016). Engaging in regular physical activity is widely accepted as an effective preventive measure for a variety of health risk factors across all ages, genders, ethnicities, and socio-economic groups (Tremblay et al., 2011)

In physical fitness esports players, this physical fitness is often forgotten; it is beneficial to support children's physical work capacity and, in the end, is expected to improve their performance. Esports is a new sport that develops along with the advancement of information and communication technology. Esports stands for electronic sport, which is interpreted as electronic sports (Kurniawan, 2020). Video games or commonly known as esports, are where two or more humans compete in video games with a series and set rules (Rudolf et al., 2020). All esports are video games, but not all games are esports, which determines whether esports are competitive or esports designed to compete for the mind; video games, on the other hand, as recreational activities designed to entertain (Trotter et al., 2020). Playing video games is a popular recreational activity that is often a fun pastime for people of all ages (Horoszkiewicz, Krzysztof, 2022) Physical activity and healthy living behavior are essential factors for the formation of physical fitness of esports players; the proper understanding and knowledge can foster the expected physical fitness. If knowledge is lacking, the efforts to maintain fitness will decrease, resulting in physical

fitness conditions. Low physical activity will result in chronic diseases such as heart and intestinal disease (Ogilvie et al., 2011). A healthy lifestyle influences human growth and development (Morris et al., 2013). Physical activity is one of the behaviors that determine Health status because it plays a positive role in preventing morbidity and mortality in a person (Palacios-Cartagena et al., 2022). Human physical activities are very dependent on survival, such as health (Chen et al., 2016).

Physical fitness problems in esports players have become part of the culture caused by bad habits in playing esports, such as sleeping late and eating unaware. In addition, doing physical activity is also an important thing to affect physical fitness. Human physical activities are very dependent on survival, such as health (Chen et al., 2016). Engaging in regular physical activity is widely accepted as an effective preventive measure for a variety of health risk factors across all ages, genders, ethnicities, and socio-economic groups (Tremblay et al., 2011)

The development of esports in Palu City, Central Sulawesi Province, is extensive, as evidenced by several significant tournaments held by the community where the enthusiasm of esports players is outstanding to participate in these activities and also evident from several communities that invite well-known streamers such as Zan and Sarah Viloid to attend and enliven the tournament, in Central Sulawesi, the Board of the Indonesian Electronic Sports Association (IESPA) was captained by Mr. Ratno. Several types of games are prevalent in Palu City, namely PUBG Mobile, Mobile Legends, and Free Fire where. also the three games will participate in Central Sulawesi Porprov sports activities which will be held in Luwuk City and as one of the sports that are competed by the exhibition.

METHODS

This research is quantitative correlational research; the purpose of correlational research is to find a relationship between two variables; this study has two variables, namely physical activity and healthy living behavior as independent variables and physical fitness as a dependent variable. The sample in this study is Palu City esports players, who numbered 160 people. Data collection techniques for physical activity and healthy living behavior using questionnaires and physical fitness using multistage fitness test guidelines and documentation. Data analysis techniques use prerequisite tests consisting of normality tests, homogeneity tests, and linearity tests, then hypothesis tests consisting of multiple linear regression tests, f tests, t-tests, and determination tests (R2).

FINDINGS AND DISCUSSION

Findings

Data on the physical fitness level of Esports players were obtained by researchers from data from multistage fitness test results. Researchers then process the data obtained to become one of the research variables. The parameter determining the physical fitness category is VO2 max which Esports Players achieve after running tests.

Table 1. Physical Fitness

No	Interval	Classification	Frequency	Percentage
1	49 >	Tall	0	0%
2	38 > 48	Good	4	3%
3	31 > 37	Enough	122	76%
4	24 > 30	Keep	34	21%
5	< 23	Low	0	0%
Sum			**160**	100%

From the table above, it shows that as many as 4 Esports players have an excellent physical fitness level (3%), as many as 122 Esports players have a sufficient physical fitness level (76%), as many as 34 Esports Players have a moderate physical fitness level (21%). In this study, researchers did not get the physique of Esports players with high and low physical fitness levels.

Table 2. Physical Activity Level

Criterion	Frequency	Percentage (%)
Very High (ST)	0	0
Height (T)	9	5,62
Medium (S)	148	92,5
Low (R)	3	1,88
Very Low (SR)	0	0
	160	100

The physical activity questionnaire given to respondents was the PAQ, A questionnaire from the table above, showing that as many as 9 Esports Players were in the high criteria (5.62%), as many as 148 Physical Esports Players had a moderate level of physical activity (92.5%). As many as 3 Esports Players had a low level of physical activity (1.88%). The normality test results in the table above show that significant values of 0.114 > 0.05 mean that all data in equation 1 have standard distributed variables. Based on the results of the homogeneity test, it can be explained that the significance value (sig) of the Physical Activity variable is 0.092 > 0.05; it can be concluded that the research variable has the same variant or is said to be homogeneous. Based on the results of the linearity test, it shows the results of the dependent variable with the independent variable. The test results showed that the significance value of Physical Activity linearity on Physical Fitness was 0.658 ≥ 0.05, indicating that both variables are linear. Hence the Physical Activity variable qualifies for the regression test.

Based on the correlation coefficient, it is known that the level of closeness of the relationship between the variables of Physical

Activity and Physical Fitness is 0.205. This means that the correlation between the variables of Physical Activity and Physical Fitness of 0.205 falls into the correlation category quite firmly. It can be stated strongly that if the Physical Activity variable is hit by fish or a decrease in respondent perception, it will have an impact related to physical fitness variables. So that there is a strong enough relationship between Physical Activity and Physical Fitness variables. Based on the n test, the coefficient of determination (r2) of the Physical Activity variable (X1) against the Physical Fitness variable (Y)is 0.042 (R Square). This means that 4.2% of the Physical Fitness variable (Y) can be explained by the Physical Activity variable (X1). While the rest (100%-4.2%= 95.8%) are other variables outside this study. Based on a simple linear regression test, it can be seen that the regression coefficient for the Physical Activity variable (X1) is 7.599, and the constant value is 157.017.

Table 3. Description of Healthy Living Behavior Research Results

	Physical Activity, Healthy Living Behavior	Physical Fitness	Information
Physical Activity, Healthy Living Behavior	1	.377** .009	Pearson Correlation Sig. (2-tailed)
	160	160	Sample
Physical Fitness	3,77 ** .009	1	Pearson Correlation Sig. (2-tailed)
	160	160	Sample

From the table above, it is known that the healthy behavior of Esports players is mainly in the frequent category, namely as many as 76 respondents (47.5%), in the rare category, as many as 66 children (41.25%), in the always category as many as 11 children (6.88%), in the Never seven children category (4.38%). The normality test results in Table 4.5 above show that significant values of 0.114 > 0.05 mean that all data in equation one have typically distributed variables. Based on the table above that the value of the Healthy Living Behavior variable is 0.397 > 0.05; it can be concluded that the research variable has the same variance and the research variable is homogeneous. Based on the linearity test that the variable is bound to the independent variable shows that the linearity significance value of Healthy Living Behavior to Physical Fitness of 0.805 ≥0.05 indicates that both variables are linear, so Healthy Living Behavior variables qualify for regression tests.

Based on the correlation coefficient, it is known that the level of closeness of the relationship between the variables of Healthy Living Behavior and Physical Fitness is 0.172.

This means that the correlation between Healthy Living Behavior and Physical Fitness variables of 0.172 falls into the correlation category quite firmly. It can be stated quite strongly that if the variable of Healthy Living Behavior increases or decreases in respondents' perception, it will have a related impact on the variable. Physical fitness. So that there is a strong enough relationship between the variables of Healthy Living Behavior and Physical Fitness**.** Based on the coefficient of determination, the results of the Healthy Living Behavior variable (X2) against the Physical Fitness variable (Y) are 0.637 (R Square). This means that 3% of the Physical Fitness variable (Y) can be explained by the Healthy Living Behavior variable (X2). While the remaining n (100%-3%= 97%) are other variables outside this study. Based on a simple regression coefficient, the variable Healthy Living Behavior (X2) is 1.601, and the constant value is 46.518. Based on this information, the regression equation can be formed as follows:

The test analysis used in this study is a correlation coefficient test, determination coefficient test, multiple linear regression test, and significance test. The test is carried out using the help of the SPS computer program, which will be presented as follows:

a) Double Correlation Coefficient

The double correlation coefficient is the magnitude of the correlation number expressed by the symbol R. Correlation is a statistical term that expresses the degree of the linear relationship between two variables. The following will be presented as a table of double correlations between the variables Physical Activity (X1) and Healthy Living Behavior (X2) to Physical Fitness (Y).

The double correlation coefficient (R) is obtained through linear regression analysis by including the results of respondents' answers from the variable statements Physical Activity (X1) and Healthy Living Behavior (X2) to Physical Fitness (Y). Based on calculations from Table 3.49 obtained through SPSS, it is known that the correlation rate of physical Activity to Healthy Living Behavior is 0.146. The number 0.146 indicates that the relationship between the two variables is weak in the interval 0.100-0.299. The results above also show the correlation number of the Physical Bag Activity variable to Physical Fitness which is 0.205. The number 0.205 shows that the relationship between the two variables is solid because it is in the interval of 0.200-0.399. Then the relationship between Healthy Living Behavior and physical fitness variables is 0.172. The number 0.172 indicates that the relationship between the two variables is quite strong in the interval 0.100-0.299.

b) Coefficient of determination (r2)

Based on the coefficient of determination, the results of the Physical Activity (X1) and Healthy H up Behavior (X2) variables on the Physical Fitness (Y) variable are 0.063 (R Square). Based on the calculation above, it means that 6.3% of the variables Physical Activity (X1) and Healthy Living Behavior (X2) can be explained by the variable Physical Fitness (Y). While the rest (100%-6.3%= 93.7%) are other variables outside this study.

c) Multiple linear regression

Based on the multiple regression coefficients for the Physical Activity variable (X1) of 6.813 and Healthy Living Behavior (X2) of 1.350. The constant value is -71.264. Based on this information, the following equation can be formed:

Based on these equations, it can be assumed that:

1) A constant value of -71.264 can be interpreted if the variable score of Physical Activity and Healthy Living Behavior is considered to be absent or equal to zero, then the variable score of Physical Fitness is -71.264
2) The value of the Physical Activity regression coefficient of 6.813 shows that Physical Activity positively affects Physical Fitness. In other words, positive physical activity will affect the physical fitness of Palu City Esports Players.
3) The regression coefficient value of Healthy Living Behavior of 1.350 shows that Healthy Living positively affects Physical Fitness. In other words, the positive influence on Healthy Living Behavior will affect the Physical Fitness of Palu City Esports Players.

d) Test f

The value of F count (17.202) > F table (3.09), then Ho is rejected, and Ha is accepted. So hypothesis 3, "there is a positive relationship between physical activity and physical fitness on physical fitness," is accepted.

In this study, the results of the physical fitness of Esports players who had a low level of physical activity were 3 people (1.88%). As many as 148 Physical Esports players have a moderate level of physical activity (92.5%), and 9 Physical Esports players have a high level of physical activity (5.62%). From this data, it can be concluded that most Physical Esports Players (2023) have moderate physical activity levels. The result of the determinant coefficient (r^2) obtained at 0.063 means that physical activity and healthy living behavior contribute sufficiently. Namely, 6.3%, to the fitness of asthma in children, and other factors influence the remaining 93.7%. Other factors affecting a child's physical freshness include exercise intensity, age, genetics, and gender.

Discussion

The results of observations and filling out questionnaires conducted by researchers are also in line with the results of the study, where esports players tend to have less activity.

Other activities carried out at home or outside the home are just walking, walking around, sitting, and chatting; rarely, esports players are seen playing with high activity. The fitness data of Palu City esports players is relatively high; this shows that there is a gap between intake, rest, and exercise (Erwinanto, 2017). In addition, lifestyle can also make the physical fitness of esports players low; a sedentary lifestyle (relaxing, sitting around) can be seen when playing esports. A person's healthy living behavior can be seen from good quality human resources physically, emotionally, and socially; therefore, efforts are needed to maintain and improve health throughout the day, from the fetus to the elderly (Anisa & Ramadhan, 2021). The level of physical fitness is suitable due to regular

exercise, and in low to moderate doses, it will affect cognitive functions such as remembering, solving problems with numbers, and accuracy (Abdurrahim &; Hariadi, 2018). Players and community leaders consider this shoe because this will have an impact on health problems such as obesity and other problems.

Having good fitness will certainly provide benefits for someone. When carrying out their daily activities both at home and outside the home, parents or community leaders obediently encourage (motivate) and facilities for players to want to be responsible for their physical fitness. Good facilities to maintain physical fitness are sports facilities such as cycling, running, and others that can make fitness balanced with gaming activities. A good encouragement or motivation is to invite someone to do sports that produce more sweat regularly and are good for him.

In this study, it was found that Esports players have a good level of physical fitness (3%) 4 people, as many as 122 Esports players have a sufficient level of physical fitness (76%), as many as 34 Esports players have a moderate physical fitness level (21%). In this study, researchers did not get the physique of Esports players with high and low physical fitness levels. Physical fitness is the capacity and ability of the body to adapt to the physical conditions given to it (from the daily work performed) without causing significant fatigue. Irwansyah et al., 2022). Gender and age differences significantly affect physical fitness; for example, boys are favored over girls (Catley &; Tomkinson, 2013). Fitness in adolescents will continuously decrease, especially in cardio respiration. The factors that can affect physical fitness are age, sex, sex, heredity, food consumed, cigarettes, and physical activity. (Dyrstad et al., 2012)

The data obtained for the physical fitness level variable shows that the majority of Physical Esports Players have a moderate physical fitness level of 148 Physical Esports Players. However, in this study, there were no physical Esports players with excellent physical fitness. Then the two data were analyzed for correlation using Pearson correlation analysis, which showed a correlation coefficient value of 0.205* with a significance of 0.009, smaller than the value of $\alpha = 0.05$. In this study, a significant relationship was obtained between the variable level of physical activity and physical fitness of Esports Players, although the relationship was relatively weak.

The results of this study are from research conducted by Caspersen J., 1995 that no individuals with low levels of physical activity have higher levels of physical fitness. In line with research conducted by Sexton, 2016 which shows a relationship between physical activity and physical fitness when measured using Magnetic Resonance Imaging (MRI), individuals with high levels of physical fitness and physical activity will show beneficial cognitive function. Research conducted by Weng T, 2016, showed a relationship between physical fitness, especially in the cardiorespiratory component, and physical activity, which in the high category will inhibit cognitive deterioration and have promising implications for brain tissue function. Another study by Vierola, 2016, showed that individuals

with low physical fitness, high y-sedentary behavior, and little body fat would be associated with increased conditions of various kinds of pain in the prepubertal period.

One indicator is to see the intensity of exercise carried out with a pulse, where there is a linear relationship between the intensity of physical activity and the pulse rate (if the intensity of physical activity increases, the pulse rate also increases). The higher a person's physical fitness level, the lower his work pulse, people who are fitter when given the same workload will provide lower work intensity so that their pulse rate is also lower (Giriwijoyo &; Sidik, 2013). Healthy living behavior is a person's activity or action in maintaining and improving their health in everyday life. Healthy living behavior must be supported by good habits every day. From the results of the study, it was obtained that the physically healthy behavior of Esports players was mainly in the oblique or quite good category (47.50%.). Meanwhile, the physical fitness of Esports players is a small part of the never category (4.38%). Healthy living behavior is a person's attitude towards the health care system, illness and disease, food and beverages, and the environment, so a person must get nutrients that suit his needs, exercise regularly, have adequate sleep and rest by doing dental and oral care, maintaining health self-defense and the environment, in order to avoid various kinds of accidents (Apriliana, 2016). Unbalanced food will affect the nutritional health status of children, whether it can cause malnutrition or overnutrition. Changes in nutrition in children are influenced by psychosocial factors such as changes in children to adults and increased nutritional needs (Dan et al., 2017).

This study intends to determine the relationship between healthy living behavior and the physical fitness of Esports Players. From the results of data analysis, a correlation coefficient value of >0.05 was obtained; these results showed a significant relationship between the relationship between healthy living behavior and the physical fitness of Esports Players. Thus proving that healthy living behavior plays a role in improving children's physical fitness; the better the child's healthy life behavior, the better the child's physical fitness level. Because by applying healthy behaviors or habits, one's physical condition will be maintained and indirectly support one's physical fitness.

Personal and environmental hygiene is related to one's physical condition; by maintaining personal hygiene, a person will avoid several diseases; thus, physical fitness is also formed with a healthy body. Unbalanced food will affect the nutritional health status of children, whether it can cause malnutrition or overnutrition. Changes in nutrition in children occur influenced by psychosocial factors such as changes in children to adults and increased nutritional needs (Dan et al., 2017). Currently, many lifestyles deviate from a healthy lifestyle, among others, diet (junk food), smoking, resting patterns (staying up late), and drinking alcohol (alcohol). A good lifestyle will keep the body healthy and strong and active to carry out various activities that require strength and endurance, such as exercise, and those that require a thinking process (Prastyo et al., 2014).

The result of the determinant coefficient (r^2) obtained at 0.030 means that healthy living behavior contributes enough to 3% of physical fitness in children, and other factors influence the remaining 97%. Other factors affecting a child's physical freshness include exercise intensity, age, genetics, and gender. The result of the determinant coefficient (r^2) obtained at 0.063 means that Physical Activity and healthy living behavior contribute sufficiently. Namely, 6.3%, to physical fitness in children, and other factors influence the remaining 93.7%. Other factors affecting a child's physical freshness include exercise intensity, age, genetics, and gender.

In the study (Hamer et al., 2014)), the maintenance of a physically active lifestyle into middle age and older was associated with better health in old age and longevity. Starting with regular exercise in midlife is associated with healthy aging, and even for those who are relatively sedentary until middle age, it is never too late because starting a new exercise regimen in old age can significantly improve health (McPhee et al., 2016) The result of the determinant coefficient (r^2) obtained at 0.063 means that Physical Activity and healthy living behavior contribute sufficiently. Namely, 6.3% of physical fitness in children and other factors influence the remaining 93.7%. Other factors affecting a child's physical freshness include exercise intensity, age, genetics, and gender.

CONCLUSION

The conclusion of this study shows that the level of physical fitness of Palu City esports players is in the sufficient category; lack of physical activity and the application of healthy living behaviors significantly affect the quality of physical fitness in Palu City esports players.

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