

# The Relevance of Physical Activity to Public Health Levels in West Java, Indonesia

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**Abstract** Health is a hope or desire of everyone. Having good health is of course followed by activities or sports activities or regular and continuous physical activity. This study seeks to reveal the relationship between awareness of physical activity and the health level of the people of West Java, Indonesia. This study uses a quantitative method with a correlational approach. Respondents in this study were the people of West Java, which consisted of 27 cities/districts. This research was conducted using a cross sectional study method, involving 18,450 people from West Java in 27 districts/cities and 110 subdistricts as respondents. The data for this study were taken from the Health Index Data owned by the West Java Health Office. Meanwhile, the data for awareness of physical activity and sports activity were taken from the West Java "Sports Community Participation Rate" (APMO). The data obtained were then analyzed using bivariate Pearson correlation analysis using the SPSS application. Based on the results of the study, it was obtained data that the people of West Java were very weak and were considered also not fond of doing sports (with a sports branch approach). This proves that there is indeed no relationship between sports activity and the level of public health in West Java ( $0.849 > 0.05$ ). However,

significant data were obtained on the relationship between physical activity and the health level of the people of West Java ( $0.000 < 0.05$ ). In addition, it is also known that the reason for the people of West Java to do physical activity is to maintain their health.

**Keywords** Physical Activity, Sport Activity, Public Health

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## 1. Introduction

The level of public health can be measured by several indicators, such as life expectancy, mortality rate, morbidity rate and prevalence of certain diseases. In addition, factors such as diet, level of physical activity, access to health facilities, and a healthy environment can also affect the level of public health. Health is a basic and important thing for every human being to have. With good health can do a good job and can be more productive. Various research results explain that recently there has been an increase in non-communicable disease problems caused by a lack of physical activity (such as diabetes,

coronary heart disease, and complications) [1]. There are many benefits to be gained from regular physical activity, ranging from improving physical health to psychological health [2]. And even in other studies it is also explained that if physical activity is carried out well (especially in adolescents) it can foster a positive spirit within and also improve social skills [3].

Good physical and psychological health can be obtained from movements or physical activities that are structured, planned and programmed properly and precisely. Physical activity is interpreted as a movement that arises from a moving muscular frame and results from the expenditure of energy in the body [4]. Therefore, activities such as walking and doing activities without having to include the meaning of "sport" are a way to carry out and carry out physical activities to improve health. Categories of physical activity can actually be divided based on portions and daily life. Like at home, at work to take advantage of spare time [5], physical activity including those that do not include the meaning of "sport" can increase public awareness about the importance of a healthy diet, active movement, and other healthy lifestyle behaviors. In addition, there are several recommendations and research results which also state that sports activities with good intensity can have a big impact on health levels [6].

Physical activity is often equated with sports activity, which actually has quite significant differences. It was explained that the physical work done every day is included in physical activity, even though the energy expenditure used is still very minimal and even close to resting metabolism [7]. Sports activity does not only look at body movement activities but also must consider the intensity, frequency and even the type of sport performed [4]. Sports activities are often carried out by involving or approaching sports (such as: futsal, football, badminton, tennis, etc.).

With physical activity, people can obtain the level of health as expected. And even the desired health can be made into a program according to the group and age. Physical activity that is carried out in a planned and structured manner is said to be able to reduce various kinds of non-communicable diseases (obesity, heart disease, diabetes, hypertension, cancer, osteoporosis, and other diseases) [8]. The results of the study also state that individuals with low physical activity can have a greater possibility of acquiring disease and resulting in death at a younger age [9]. In addition to having a positive impact on physical health, proper sport can also have a large impact on mental health, reducing anxiety and other psychological impacts [10]. When sports are at the school level, impacts such as increased levels of social skills, discipline, and can even reduce levels of discrimination in schools [10]–[13].

Physical activity done for a long time and consistently can have better health consequences. As explained below, the recommendations for physical activity can be a reference for the community in improving their health [14].

**Table 1.** Physical Activity Recommendations by Age Group [14]

Age Group	Recommendation
Children and youth Age 6–17 years	<ul style="list-style-type: none"> <li>At this age, the recommended physical activity is 60 minutes (aerobic) or more with moderate to vigorous intensity (repetitions at least 3 times a week).</li> <li>Muscle strengthening activities such as running and jumping can be done at least 3 times a week with high intensity.</li> <li>The activities carried out will be carried out together with the level of biological and psychosocial maturity of the individual.</li> </ul>
Adults Age 18–64	<ul style="list-style-type: none"> <li>This age is included in the adult age category. At this age, moderate-intensity aerobic physical activity for 150 minutes is a recommendation to maintain cardiovascular capacity.</li> <li>As for physical activity, the target is muscle strength, which can be continued at least 2 times a week</li> </ul>
Elderly Age >64	<ul style="list-style-type: none"> <li>At this elderly age, the physical activity that can be done must really be according to their abilities. Do not force physical activity that can interfere with the body's organ systems.</li> <li>Physical activity that can be done according to the previous age, so that new knowledge does not occur which is difficult to do.</li> </ul>

Based on table 1, physical activity must be carried out according to the age level and the implementation of activity recommendations that must be carried out. Based on the explanation and seeing the importance of physical activity and its relation to sports, it is very important to follow up on this problem. For people who are reluctant or don't have time to carry out "sport", then physical activity becomes a record and an important activity to be carried out by the community to improve their health. Therefore, researchers consider it important to see and know the importance of and the relationship between physical activity and health.

## 2. Materials and Methods

### 2.1. Design

The research method is cross sectional study used by researchers because it is considered the most appropriate to see what is happening in the field. This research involved 18,450 people from West Java in 27 districts/cities and 110 districts as respondents, and involved 110 volunteers "Bachelor of Support for Sports Development" (SP3OR). The instrument used was a modified International Physical Activity Questionnaire (IPAQ) questionnaire [15] as stated in the measurement guidebook "Participation Rate of Sports Community" (APMO) West Java Youth and Sports Service. In addition, health level data were obtained from health data already owned by the West Java Health Office.

## 2.2. Research Procedure

Research is done by going through various procedures to get maximum results. These procedures include: 1) Initial stage: Researchers obtain permission from the West Java Health Office and Youth and Sports Office to use health data and APMO data in 2021. Furthermore, researchers also ask for permission to be able to access other data on the web owned by each agency. 2) Implementation Phase: Researchers select data and filter data that is needed and what is not needed. The data is then opened and analyzed according to the needs and wishes of the researcher.

## 2.3. Data Collection

In this study, researchers used data that had been obtained from the Health Office and also the West Java Youth and Sports Office. The data that has been obtained are: 1) Health level data obtained from the West Java Health Office via the website <https://diskes.jabarprov.go.id/> and also data obtained directly from the West Java Health Office; 2) Physical activity awareness data obtained from West Java Sports Community Participation Rate (APMO) data. APMO data contains information about the status of physical activity, type of activity, intensity and also type of activity of urban/district communities in West Java.

## 2.4. Data Analysis

This research was analyzed and explained in a quantitative descriptive manner. Descriptive statistics are used to analyze data by describing the data that has been collected and then elaborated and explained according to the results that have been obtained [13].

Furthermore, the research results that have been obtained are then analyzed using correlations whose purpose is to see and find out the relationships that occur between variables. The relationship that occurs in a variable can be positive or negative. In the correlation analysis, there are actually no independent variables (X) and dependent variables (Y), because basically the relationship between the independent variable and the dependent variable will be the same as the relationship between the dependent variable and the independent variable. The variables referred to in this study consist of physical activity and health level.

## 3. Results

The research obtained results which stated that many of the physical activities carried out by the people of West Java were not based on sports. The community considers that the work done so far (with moderate to heavy intensity) has become a substitute for physical activity with sports (such as: futsal, football, badminton, tennis, etc.). What's more, people are already preoccupied with various jobs and there is still a lack of infrastructure to support physical activity (sports-based) which makes people less willing to

do physical activity with sports.

Based on the data that has been obtained which consists of sports activity, awareness of physical activity, and health level can be described in the following results. Researcher results that there is no significant relationship between physical activity and the level of health in the people of West Java. This is because the people of West Java have jobs with a very high level of activity, so there are many reasons why people are reluctant or don't have time to exercise. In this case, the APMO instrument explains that sports activities are in the form of sports activities such as football, futsal, cycling, badminton, tennis and others (based on sports). The results of this study can be seen in table 2.

**Table 2.** The relationship between sports activity and the level of public health

	Health Level	Sports Activity
Health Level	Pearson Correlation	1
	Sig. (2-tailed)	.849
	N	27
Sports Activity	Pearson Correlation	-.039
	Sig. (2-tailed)	.849
	N	27

In the output table above, it can be explained in general that the results on the significance value of Sig. (2-tailed) between sports activity and health level is  $0.849 > 0.05$ , which means there is no significant correlation between the two variables. This also explains that the high level of public health is not the result of physical activity carried out by the people of West Java (and vice versa).

It is very reasonable that the people of West Java have not made sports activities based on sports branches still reluctant to do so. It is considered that there is no time or even requires a relatively large amount of money to be able to participate in sports activities (such as: buying rackets, shoes, bicycles and others). So, it is considered that the activity is not something that is urgent to do and carry out.

However, when researchers conducted an analysis related to physical activity with the health level of the people of West Java, it can be seen in table 3 below that there is a significant and positive relationship. This makes the physical activity carried out have a positive effect on the health of the people of West Java. The data can be seen in table 3.

**Table 3.** The relationship between physical activity and the level of public health

	Health Level	Physical Activity
Health Level	Pearson Correlation	1
	Sig. (2-tailed)	.000
	N	27
Physical Activity	Pearson Correlation	1.000**
	Sig. (2-tailed)	.000
	N	27

\*\* . Correlation is significant at the 0.01 level (2-tailed).

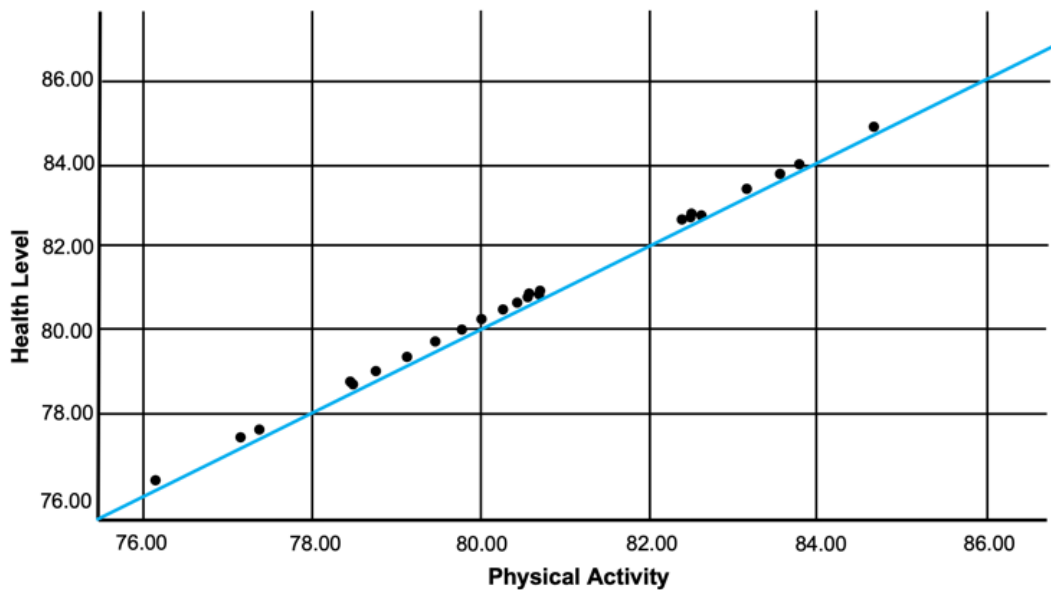


Figure 1. Scatter Plot

While the results of research on 2 above, it can be concluded that, the value of Sig. (2-tailed) between physical activity and health level is  $0.000 < 0.05$ , which means there is a significant correlation between physical activity variables and health level variables. Besides having a correlation, this relationship also has a positive significance as well. This means that when people carry out or undergo physical activity with moderate intensity (up to gasping for breath) it will also have a good impact on public health.

The physical activities referred to in this case include fast walking, running, leisurely cycling, and even work-based physical activities (gardening, farming, planting, lifting goods, etc.). And indeed, physical activity like that is mostly done by the people of West Java because it is a demanding job to do it. In addition, the calculation results related to the relationship between physical activity and health level can be seen in Figure 1.

The research results described in it the "Scatter Plot Graph" above, can be explained that the graph has various data plot points by forming a straight-line pattern from the bottom left up to the top right. This explains with confidence that there is a linear relationship as well as a positive relationship between physical activity variables and health level variables. Which means, if physical activity has increased then the level of health will also increase as well. Because there is a linear relationship between physical activity variables and health level variables, one of the assumptions or requirements for the regression model in this study has been fulfilled.

## 4. Discussion

The concept of health is often defined as something

subjective, such as not feeling sick, being able to work properly and also having good organ capabilities [14]. Health is of utmost concern to everyone, without exception for the people of West Java. Having a good level of health can also have a significant impact on the standard of living in an area. West Java with 27 Regencies/Cities and 110 Subdistricts is a mainstay in Indonesia (with its natural wealth to its potential).

It is proven by the data released by the West Java Health Office, the average health level in 2020 and 2021 is above 80%. So based on the results of the research calculations above it explains that there is no significant relationship between sports activity (based on sports) and the level of public health in West Java. Furthermore, the researchers conducted a search relating to the physical activity carried out by the people of West Java. The people of West Java are recorded in the results of calculations and APMO data, it is obtained that 80.37% of the people are active in carrying out physical activities.

The way people interpret sports is still oriented towards training and achievement; this is what makes many people reluctant to do sports activities. The community will be happier and of their own accord when carrying out and doing physical activities without the significance of sports (based on sports). In several European countries, they even explain the unique value of sports that can attract, motivate, and inspire people to obtain a good level of health [14].

The physical activities that are mostly carried out by the people of West Java are activities such as walking, running, cycling and other activities that are mostly carried out and encountered on work matters. Therefore, it certainly becomes an interest and priority for how the community can really maximize physical activity to be a substitute for sports activities or activities (based on sports). Placing

active physical activity is key to optimizing physical function and slowing down the aging process [16]. Physical activity can move people to move, act, and perform in culturally specific spaces and contexts, and is influenced by a unique set of interests, emotions, ideas, instructions, and relationships [4]. Referring to the above understanding, it is not wrong for people to run and carry out physical activities that are directly or indirectly in the direction of their work (such as walking, cycling, lifting goods, etc.).

By not limiting the concept of physical activity, and not "forcing" it into sports, many people actually do physical activity. And intentionally or unintentionally can have a big impact on his health level. This is proven in the results of research that researchers have carried out according to the data above. Humans biologically need structured, planned and systematic physical activity to get good health and well-being [14]. A planned and systematic process can result in the body's adaptation process to maintain and maintain a good level of health.

So, the results of this study provide an explanation that, although people are reluctant to exercise, when replaced with physical activity it will also provide good results for health. The results of this study also describe if people are too busy with work, so they don't have free time to do sports activities such as futsal, football, badminton, and others. However, there are also many research results that also explain the impact of sports activities on health levels.

It has been scientifically proven that there is a relevant relationship between physical activity and health improvement. The results of similar studies explain that at least regular physical activity can reduce the early death rate by 20-30% [17]. In addition, physical activity carried out during adolescence can also provide and influence an active and healthy lifestyle, so that it can reduce and reduce the risk of chronic disease in the future [8]. However, the recommended physical activity is 150 minutes per week at least with moderate intensity so that it can provide great benefits for health [17].

## 5. Conclusions

In this study it can be concluded that, the people of West Java do not see sports (with branches of sports, such as: football, futsal, badminton, and others) as something that is important to do at this time. These results also explain that there is no relationship between sports activity and the level of public health. However, the results of subsequent studies explained that there was a significant and positive relationship between physical activity and the level of public health.

The physical activity referred to in this study is the daily activities that can be carried out by the community with the indicator being the presence of shortness of breath when doing this physical activity (such as: fast walking, running, cycling, etc.). These activities are always carried out by the

people of cities/districts in West Java because of their connection with employment, and the results also have a major influence on public health.

This research is only limited to initial studies related to physical activity, sports activity and public health. Researchers have not examined in depth regarding intensity, frequency and other relationships. Therefore, in future research it is suggested and recommended to conduct research related to physical activity, between exercise for a longer time. In addition, it also compares men and women regarding physical activity with their mental health. This is expected to complement and add new insights and knowledge in similar research.

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