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Effects of the COVID-19 pandemic on active life behavior of elementary school students in West Java

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ABSTRACT

The COVID-19 pandemic is transforming human activities, including learning at school. The study aims to analyze the direct effects of the COVID-19 pandemic on the active lifestyle of elementary school students across West Java. In addition, the specific aim of this study is to obtain empirical evidence on active life behavior. The research method in this study is a quantitative descriptive method. The population consists of elementary school students from across West Java and a random sample of 1,867 students from each district. The sampling technique uses a simple random sampling technique. The results shows that the active lifestyle behavior of students during the Covid-19 pandemic is at most distributed in the low category of up to 1,088 people (58%) and before the Covid-19 pandemic the largest distribution is in the moderate category up to 1147 people (61%). These data show that the COVID-19 pandemic is affecting the decline in student active living from the moderate category to the low category.

Keywords: COVID-19; active lifestyle; physical activity

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INTRODUCTION

The Coronavirus or better known as Covid-19 is a problem in the world today. The spread of COVID-19 that has hit Indonesia and the world is affecting all aspects of life, including the world of education (Tulchin-Francis et al., 2021). The COVID-19 pandemic has had a major impact on life in all areas (Peña et al., 2021). As an academic, the COVID-19 pandemic has certainly had a huge impact on the education sector (Ma et al., 2021). Many countries have decided to close schools, colleges, and universities, including Indonesia. As a result, the government is taking quick steps by enacting policies that can break the chain of the spread of the coronavirus or COVID-19 (Wei et al., 2020). The guidelines set by the government stay home, work from home, social distancing, and others. To maximize government efforts, areas in which many people are involved, especially the education sector, need to implement these policies well (Yomoda & Kurita, 2021). The Covid-19 outbreak that hits Indonesia and the world has had an impact on all aspects of life, including the world of education (Susilo et al., 2020). To break the very dangerous chain of the spread of COVID-19, the Indonesian government has made several efforts to reduce this number, one of

which has been implemented in the education system in Indonesia, which is to encourage students to study and do assignments at home also from home (Boukrim et al., 2021).

Judging by the content and subjects taught in schools during the pandemic, they can be divided into two groups. The first group is a subject group that is dominated by theory and little practice, while the second group is dominated by practice with little theory. These two groups differ greatly in the application of online learning. Physical education is both of physical activity and educational activity (del Pozo Cruz et al., 2021), but whether it is the game activity or sport (as a sport), both can be used for activities in the educational process, almost always the experience of physical activity can be used to achieve educational interests (Felez-Nobrega et al., 2020), during this pandemic, students need to keep their distance (Boukrim et al., 2021), wear masks and isolate themselves at home, this will affect the active life behavior of the students such as soccer, basketball, futsal, badminton, running, swimming, gymnastics, and others who normally done in the school field must now be done at home to prevent the spread of Covid 19 (Kampasová & Válková, 2021). Activities that can be done at home to keep students fit, such as gardening, climbing stairs, weight training, flexibility, coordination, speed, cycling, aerobics, and others (Aadland et al., 2021).

Healthy lifestyle behaviors are measures taken by individuals to maintain and improve health, including disease prevention, personal hygiene, maintaining fitness through exercise, and nutritious food (Kosoko-Lasaki et al., 2019). There are several indicators that a person has lived and experienced a healthy life, namely as follows: (1) Eat with a balanced menu (adequate nutrition). A balanced menu here is a daily diet that covers the nutritional needs that meet the needs of the body both of quantitatively (quantity) and type (quality); (2) Regular and sufficient physical activity (Mirela et al., 2015).

In early 2020, the world was shocked by the incidence of serious infections with an unknown cause that began with a Chinese report to the World Health Organization (WHO) that there were 44 patients with severe pneumonia in one area, namely in Wuhan City, Hubei Province, China, to be precise, the last day of 2019 China (Mansfield et al., 2021). The initial suspicion was that it was a wet market selling fish, marine animals, and various other animals (Wei et al., 2020). On January 10th, 2020, the cause was identified and the genetic code was obtained, namely the new coronavirus (Tulchin-Francis et al., 2021). At the end of January 2020, the WHO declared the global emergency status for this coronavirus case, and on February 11th, 2020, the WHO named it Covid-19 (Wei et al., 2020). Currently, in 2020, the evolution of the transmission of this virus is quite significant as it has spread around the world and all countries are feeling the effects, including Indonesia (Susilo et al., 2020). April 2020 saw 4,557 positive cases in Indonesia, 380 people are said to have recovered and 399 more were pronounced dead (Susilo et al., 2020). According to these data, that means there are still 3,778 positive Covid-19 patients or around 82.9 percent, and the percentage death rate (CFR) or death rate hits 8.75 percent. Based on these data, it is found that DKI Jakarta Province still ranks highest with several positive cases of up to 2186 cases, followed by West Java with 540 positive cases and the third rank namely East Java with 440 positive cases (Boukrim et al., 2021).

Physical activity doesn't have to be a sport here. For someone whose job is to do regular and regular physical exercise, this can be categorized as exercise (Kaartinen et al., 2019). For someone whose job does not involve physical activity, such as managers, administrators, secretaries, etc., it requires regular exercise; do not smoke, drink alcohol, or use drugs. Smoking is an unhealthy habit, but smokers are tending to increase in Indonesia. Almost 50% of adult men in Indonesia are smokers (Yunus & Rezki, 2020). Meanwhile, alcohol and drug use are increasing, although they are still low (around 1.0%). Adequate rest, adequate rest is useful not only for maintaining physical health but also for mental health (Doré et al., 2019). The development of science and technology today, also spurs people to improve their lives, both in the socio-economic field, which ultimately encourages those affected to work hard regardless of the physical and mental stress (Ma et al., 2021). Adequate rest is a basic human need to maintain health; stress control or management (Maher et al., 2021). Stress is a part of everyone's life, indiscriminately (Hema & Gupta, 2015). Everyone, regardless of social level, economy, position or position, etc., experiences stress. Stress cannot be avoided by anyone, but what can be done is to overcome, control or manage the stress so as not to cause health problems, both physical and mental health (spiritual) (Ranasinghe et al., 2016); Another positive

health behavior or lifestyle, which essentially means a person's actions or behavior to avoid various diseases and health problems, including behavior to improve health (Dubois-Comtois et al., 2021).

Assigned tasks to conduct physical education at home due to limited supervision and the availability of infrastructure are not necessarily fully performed by the students or they are lazy and unmotivated to perform the tasks set by teachers, making the implementation of the learning less effective (Zhan et al., 2021). This can promote the occurrence of inactive behaviors and eating disorders that can adversely affect health, including an increased risk of chronic diseases such as high blood pressure, diabetes, obesity, being overweight and the presence of other health conditions. Research has shown that more than a quarter of students are overweight or obese (Felez-Nobrega et al., 2020). During Covid-19 incarceration, most students had nutritional disorders, only a third were fairly active, and most students were at risk of stress (Boukrim et al., 2021). Although these restrictions help lower infection rates, they negatively affect participation in normal daily activities, physical activity, travel, and access to various forms of exercise (e.g., those provided by teachers) (Aadland et al., 2020). In addition to the factors mentioned above, there are many other factors that cause a person to behave actively even in the midst of the Covid19 pandemic, for example the habit of moving around in the family environment. With this understanding and description of physical activity, it will hopefully be an assessment for the government, exercise practitioners, and related agencies. The novelty of this study is an in-depth analysis of physical activity in elementary schools in West Java Province, which can be broken down into several categories, so it is a concern for Indonesians in general. Based on this background statement, the researcher wants to analyze the effects of the COVID-19 pandemic on the active lifestyle of elementary school students across West Java.

METHOD

The research method in this study is a quantitative descriptive method. The study aimed to analyze the direct effects of the COVID-19 pandemic on the active lifestyle of elementary school students across West Java. In addition, the specific aim of this study is to obtain empirical evidence on active life behavior. This study took a population of elementary school students in West Java and a random sample of 1,867 students from each district. The main data collection tool in this study, the first to obtain routine active-lifestyle information, is the distribution of questionnaires and instrument review of the data. The survey was conducted in state elementary schools across West Java from February 2021 to June 2021. The data collection was conducted in February and June 2021 and included students from state elementary schools across West Java. The investigation was carried out through the distribution of questionnaires. The processing and data analysis techniques using the SPSS v.20 software performed in this study are as follows: Prerequisite Analysis Test, namely Kolmogorov-Smirnov Normality Test. Homogeneity test with Levene test. Hypothesis analysis used data selection and coding to select data according to the measuring device used.

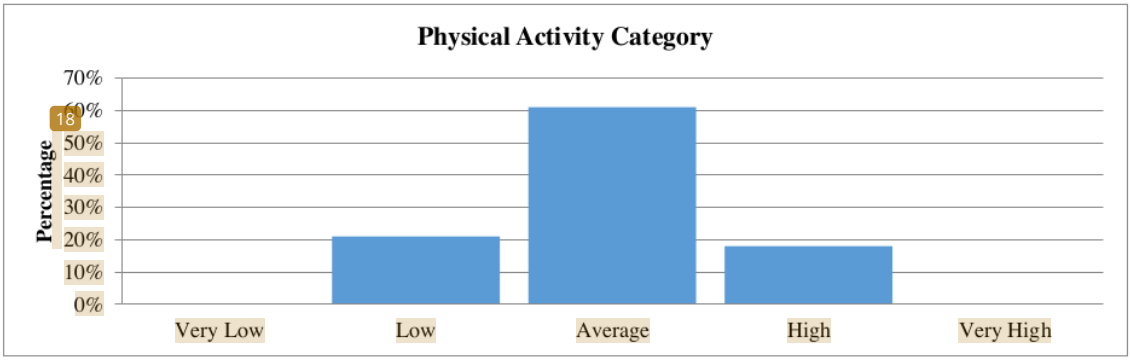
RESULTS AND DISCUSSION

The data obtained when completing the PAQ-C questionnaire via a modified Google form for elementary school is intended to determine the physical activity level of students, and the results of these measurements are divided into five categories, namely: (1) very high, (2) high, (3) moderate, (4) low, (5) very low. For more details, the data on the results of completing the PAQ-C questionnaire can be seen in Table 1 below:

Table 1. Physical Activity Measurement Results Before the Covid-19 Pandemic

No	Physical activity category	Frequency	
		f	%
1	Very Low	0	0%
2	Low	383	21%
3	Average	1147	61%
4	High	337	18%
5	Very High	0	0%
Total		**1867**	**100%**

It is known from Table 1 that of 1867 students (100%) 0 students (0%) in the very low physical activity category, 383 students (21%) in the low category, 1147 students (61%) in the medium category, 337 students (18%) in the high category, and 0 students (0%) in the very high category. This can be illustrated by the fact that up to 61% of students had moderate physical activity before the pandemic.

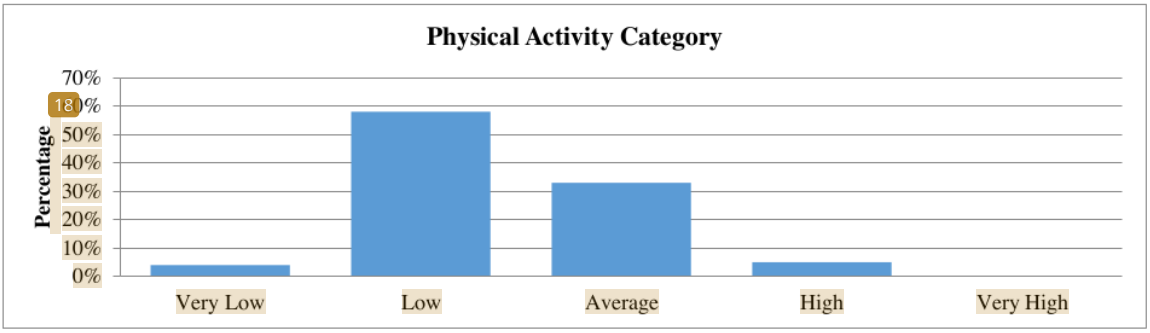


Graph 1. Physical Activity Measurement

Table 2. Physical Activity Measurement Results After the Covid-19 Pandemic

No	Physical Activity Category	Frequency	
		f	%
1	Very Low	72	4%
2	Low	1088	58%
3	Average	620	33%
4	High	187	5%
5	Very High	0	0%
Total		**1867**	**1867**

From Table 2 it is known that of 1867 students (100%), 72 students (4%) in the very low physical activity category, 1088 students (58%) in the low category, 620 students (33%) in the medium category, 187 students (5%) in the high category, and 0 students (0%) in the very high category. It can be illustrated that up to 58% of students had little physical activity during the pandemic.



Graph 2. Physical Activity Measurement

In this study, we emphasize the importance of physical activity in dealing with the COVID-19 pandemic, especially among elementary school children. Our results suggest that physical activity decreased in elementary school children both before and during the pandemic. However, the pre-pandemic decline in physical activity averaged in the moderate category after the pandemic was in the low category. The level of physical activity among elementary school children in West Java prior to the COVID-19 pandemic, at a high

level of 18%, decreased to 5%. The level of physical activity among elementary school children in West Java prior to the COVID-19 pandemic decreased from a moderate level of 61% to 33%. In contrast, the level of physical activity among primary school children rose in the lower category from 21% to 58%. This is what we need to express in order for it to become a concern of all policymakers and the world of education, especially physical education in schools.

The physical activities that elementary school students tried before the COVID-19 epidemic were jogging, conventional sports, soccer, volleyball, badminton, basketball, futsal, self-defense, strength counseling, gymnastics, on the other hand during the COVID-19 epidemic, sunbathing, hiking, jogging, cycling, and a variety of physical activities that help the elderly. There is also the level of physical activity of the students before the endemic of the longer type and the level of physical activity of the students during the endemic of the mild type. The results of this research are backed up by a research analysis that makes the following analysis: 1) The PA of children and adolescents is largely declining; 2) PA shrinkage is more common in boys, as well as older children and adolescents; 3) Less PA reduction in children living in separate houses, larger houses, rural areas, and with more family units; and 4) adult support and assessment of the location and nature of the activity can help children maintain or increase their PA during an endemic (Yomoda & Kurita, 2021).

In addition, twelve compliant studies that identified 7 countries provided multiple pieces of evidence for the success of the training intervention, as well as success through diet and exercise. Future research should seek, in collaboration with secondary schools, to identify best practices to promote and to maintain healthy eating habits and physical activity. More attention must also be paid to the separation of non-fresh food in the school area (McHugh et al., 2020). In another study, most children managed to return to their daily traditions at the time of the research question and answer, although some struggled to return to their routine. You are faced with a negative life and negative security, which is characterized by fatigue, worrying images, excessive body awareness, and fears about living conditions. In many cases, they are not prompted by healthcare professionals. Students use different strategies to get back into everyday life and physical activity. This reflects the origins of their physical and psychological energies, contextual drives, and contradicting living conditions. Eventually, most participants had successfully resumed their daily lives 6-12 months after Covid-19, but were limited in their daily activities and found it difficult to maintain adequate levels of physical activity.

Next, there is strong evidence for the association between physical activity and metabolic health outcomes in children and adolescents, but for methodological reasons, most studies describe the extent of severity using only a few summary dimensions (Hou et al., 2020). This study suggests that physical inactivity measures need to be taken that can help reduce the burden of diseases such as diabetes and cardiovascular disease (Hou et al., 2020). This is intended to determine the multivariate severity of sports-related to metabolic health in a large and diverse spectrum of children and adolescents by examining association patterns for all areas of athletic seriousness. The study uses information from 11 studies and 11,853 participants aged 5, 8-18, 4 years old listed in the Global Children's Accelerometry Information Base. This research also reduces the 14 elastic sports activities derived from the accelerometer that cover the severity range. To examine the multicollinearity between these variables, a multivariate pattern analysis is used in this study to determine the relationship to indicators of metabolic health (abdominal obesity, insulin sensitivity, lipid metabolism, blood pressure). Aggregated metabolic health data are used as key outcome elasticities. However, the association with sluggish aggregate metabolic health rates for periods of inactivity and moderate exercise is gradually reinforced by vigorously and steadily increasing the amount of time spent (up to 4000-5000 counts per minute) (Aadland et al., 2020). The federation pattern is fairly consistent across pubic type and age group but varied for different metabolic health outcomes. This latest analytical approach proves that seriousness is strongly linked to metabolic health in children and adolescents.

Further evidence on the relationship between intensity-specific physical activity and obesity in young children is interrelated. Furthermore, the proof of the analytical approach cannot process the multicollinearity between many variables over the intensity spectrum. This study determines the intensity of multivariate physical activity related to the body mass index in a large sample of preschool children aged 3-

6 years. 1182 Norwegian preschool children (mean age 4.7 years, 51% boys) provided data on physical activity (ActiGraph GT3X +) and body mass index for the period 2015-2016 (Meijer et al., 2020). Multivariate pattern analysis was used to determine the relationship between the full range of triaxial intensity (time spent in intensity from 0-99 to 15,000 counts per minute) and body mass index in the total sample and divided into subgroups by gender and age (median distribution) to be determined). The association patterns were comparable in boys and girls (Aadland et al., 2020). In summary, this study found a clear association with body mass index across the spectrum of physical activity intensity in preschool children. However, the age-specific association pattern showed a negative (unfavorable) association with a strong physical activity intensity that developed at the age of 5-6 years.

On the other hand, temperament and physical activity (PA) in children and adolescents have been studied, but little is known about these relationships in adulthood. It is known that personality traits contribute to physical activity in adults (Tulchin-Francis et al., 2021). This study, which examined temperament and personality traits, also found an association with temperament traits. Positive associations are found between sensitivity to orientation and general physical activity and between extraversion and vigorous physical activity in women and low negative affectivity. Overall and vigorous physical activities were in men. In addition, orientation sensitivity and tolerance were associated with physical activity in men. Temperament and personality traits also showed gender-specific associations with comments on watching sports. Other research, examines the natural potential that forest fires have minimal impact on the average weekly physical activity of children (del Pozo Cruz et al., 2021). The analysis showed that the children maintained their physical activity level up to the estimated turning point of the air quality index 737.08 (95% CI = 638.63, 835.53), and daily physical activity decreased dramatically. Similar results were found for girls and boys as well as for children with a low to high socio-economic background. Only when air quality deteriorates to around 3.5 times the air quality index threshold (> 200), which is classified as "dangerous" by the Australian Ministry of Health, does children's physical activity decrease (Felez-Nobrega et al., 2020). Public health authorities should reassess forest fire health effectiveness and develop strategies to reduce risk to children's health.

Physical activity was associated with a lower probability of attempting suicide in boys (OR = 0.78; 95% CI = 0.70-0.86), but a higher probability of attempting suicide in girls (OR = 1.22; 95%) -KI = 1.10-1.35) (Karvonen et al., 2020). The associations for boys and girls are relatively uniform in all countries. Engaging in physical activity can be an effective strategy for preventing suicide attempts for boys, but not for girls. Future studies should examine the factors that cause these gender differences. Higher physical activity correlates with lower internalizing / externalizing symptoms. In full path analysis, physical activity predicted lower rates of depressive symptoms during early adolescence. A gender-specific effect of physical activity on depressive symptoms was found in boys rather than girls. Low physical activity in early adolescence is a unique predictor of the development of depressive symptoms in boys. Physical activity should be considered when discussing the prevention and management of depression in adolescents. This study aims to measure and examine grade levels (3-6) and gender differences in daily minutes of moderate to vigorous physical activity in elementary school children. Boys were 68.9% and 52.4% more physically active than girls during the entire school day and 6.43% and 0.98% during rest periods, respectively. Most Australian children do not meet physical activity guidelines during school hours, with a decline in physical activity from grades K-2 to grades 3-6, particularly among girls (Rolving et al., 2019).

The daily experiences of children with physical activity in early childhood education institutions (PAUD) are important from a health promotion perspective. The experience of wellbeing in physically active play is important, and the environment can support this behavior (Vella et al., 2019). These results underscore the importance of the physical environment in promoting children's well-being during physical activity and show the importance of a different environment in promoting well-being and physically active play for all children in an environment outside of PAUD facilities (Sando & Sandseter, 2020). On the children's food intake side, physical activity is related to parents' educational level, family income, and exercise patterns, and family nutrition, while children's exercise patterns are significantly related to the mother's BMI and parents' educational level (Díez et al., 2021). The children's diet and physical activity were linked to the

mother's BMI, the socio-demographics of the family, and the family's eating and exercise patterns. School health programs that actively involve families hold great promise in promoting nutritional patterns and physical activity in children (Al Yazeedi et al., 2021). Future research should be aimed at understanding the moderating and mediating factors.

The results shows that physical activity implementation can be influenced by many things, including parenting upbringing, parenting patterns, learning locations, facilities and infrastructure, understanding of government or institutional leaders, and gender. In addition, the presence of a tool that can measure accurately is also very necessary. The end of the discussion of the results of this study shows that the quality of the parents is very important to give the initial influence on the behavior of the children.

CONCLUSION

In this descriptive study in West Java, which is of relatively advanced elementary school age, several significant declines are found related to the effects of COVID-19 on physical activity in elementary school students. The physical activity level of the students before the pandemic is in the medium range and the physical activity level of the students during the pandemic is in the lower range. The data shows that prior to the Covid-19 pandemic, students are more physically active than they were during the Covid-19 pandemic, resulting in a drop in student physical activity from the middle category to the low category. While this decline in student physical activity has occurred due to COVID-19, it must be a warning and concern for the education community and the government. Further research in this area is very important, especially as many factors have not yet been seen, such as the influence of parenting, socio-economic factors, the environment, government policies and the implementation of learning during the pandemic.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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