Physical Activity and Passive Behavior of Sports Education Students After the Covid-19 Pandemic

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Abstract. Indonesia has experienced the Covid-19 pandemic. For three years, this study aims to determine the level of physical activity and passive behavior of post-pandemic physical education department students. All students of the physical education department became a population of 1,197 students, and as many as 314 students were sampled using simple random sampling techniques. Data analysis in this study consists of three calculations, namely average, standard deviation, and percentage. Data collection was done using a survey questionnaire adopted from WHO, namely the Global Physical Activity Questionnaire (GPAQ), conducted by post-pandemic students. The results found that post-pandemic students' physical activity was in the moderate category with a frequency of 3 times in 1 week and a duration of 30 minutes to 60 minutes. The passive behavior of students is relatively low because sitting and lying down time is only done 2-3 hours within one week.

Keywords: After Covid-19, Physical Activity, Passive Behavior.

1 Introduction

The first case of coronavirus disease (COVID-19) in Indonesia was confirmed on March 2, 2020, followed by the first community transmission reported from Jakarta [1]. The COVID-19 pandemic has magnified socio-economic disparities and health disparities, especially in low- and middle-income countries. Social distancing and isolation measures are causing changes in people's and family routines, with alarming implications for individuals' physical health [2]. In this context, lack of physical activity and sedentary (passive) behavior add to the burden of non-communicable diseases since obesity and chronic conditions are risk factors for the development of severe cases of the disease. Describing trends in physical activity and passive behavior over time helps monitor risks and protective factors and understand new dynamics of healthy behavior in the wake of the COVID-19 pandemic [3]. Physical activity is believed to control body shape to remain ideal. This is relevant to the results of other studies that state that there is a relationship between physical activity and Body Mass Index. That is, both have a correlation that can explain each other. In addition, many studies say that physical activity provides positive benefits for health [4]. However, it is undeniable that the

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problem of physical activity is the focus of serious issues in health affairs in the modern era. For this reason, the health condition of the Indonesian people is in an emergency.

Previous studies in Indonesia have shown increased physical activity in leisure time. In addition, the results of Riskesdas 2018 show that 66.5% of Indonesians have sufficient physical activity, and the remaining 33.5% are sedentary [5]. Minister of Communication and Information Johnny G. Plate, in his explanation opening remarks Global Online Startup Weekend COVID-19 Indonesia, states that during the COVID-19 pandemic, there are changes or shifts in internet utilization that were previously in offices, campuses, schools, and public places, in contrast to the current internet use shifting to housing, residences, and settlements [6]. This shift leads to negative health effects in the long run. Electronic screen time has greatly increased during the pandemic (+1730 minutes [or about 30 hours] per week on average). Screen usage time during leisure time was also extended, suggesting that nearly a quarter of students engaged in long screen use to relax [7].

Physical activity is one of the important ways to achieve a healthy life for the community, and it includes aerobic and non-aerobic exercises such as walking and cycling. The need for physical activity, on the other hand, refers more to the state of psychological condition that people show when participating in physical activity. Related studies have also found that higher physical activity needs will result in higher motivation to participate, which is linked to higher levels of physical activity involvement [8]. In addition, the level of physical activity involvement indicates the level of cognitive, emotional, and behavioral involvement that a person has when doing a particular physical activity. Physical activity needs to affect the level of participation of physically active participants [9]. For college students in the current post-pandemic era, their physical activity is restricted in many ways, and higher physical activity needs will facilitate higher motivation to participate and will continue to influence their involvement in physical activity [10]. This means that in the current post-pandemic context, the higher the physical activity needs of students, the higher the level of involvement.

After the pandemic, activity not only diminished rapidly, but sedentary behavior also increased. In addition, by drastically increasing the number of physically inactive individuals, the COVID-19 pandemic increased the likelihood of cardiovascular disease, especially among those with prior cardiovascular disease [3]. In fact, in the wake of COVID-19, more has been highlighted about the need for ongoing surveillance and action planning for the most vulnerable and high-risk groups [11]. In this case, it is important to monitor the physical activity and passive behavior of college students. Aims to determine the physical activity and sedentary behavior of students in maintaining their activities.

2 Research Method

This study used a natural survey method on all students of the Department of Physical Education, Faculty of Sports, Sciences, and Health, Surabaya State University, who were randomly selected from five batches from the Class of 2019-2023, which were actively carried out in a population of 1,197 students. Data collection will be carried

out during three months of June, July, and August 2023. The sampling technique uses simple random sampling until 314 students are selected (Table 1).

Table 1. Number of Samples.

No	Force	Sum
1	2019	10
2	2020	13
3	2021	111
4	2022	165
5	2023	15
	Total Number of Students	314

Table 2. Sample Data.

Variable	Information	F	%
Gender	Man	213	68%
	Woman	101	32%
Region of residence	Rural	187	60%
	Urban	127	40%

Student participation in filling out online questionnaires to determine the type and intensity of sports activities during the COVID-19 pandemic. The instrument used is in the form of semi-essays totaling 16 questions so that the results of this instrument can reveal the daily lives of students globally.

Moderate and high physical activity intensity are measured by the Global Physical Activity Questionnaire (GPAQ) developed by the World Health Organization (Word Health Organization, 2021). The assessment technique for the results of filling out student questionnaires is carried out as follows: (1) there are 16 questions to find out student activities; (2) Questions number, 1,4,7,10, and 13 have "Yes" and "No" answer choices; (3) questions number 2,5,8,11, and 14 have the lowest score answers one and the highest 5; (4) Questions number 3, 6, 9, 12, 15, and 16 activity intensity 10-30 minutes, 31-60 minutes (value 1), 61-90 minutes (value 2), 91-120 minutes (value 3), 121-150 minutes (value 4), 91-120 minutes (value 4), 121-150 minutes (value 5), 151-180 minutes (value 6). Physical activity is calculated as the minutes each week that moderate physical activity intensity plus twice the minutes of physical activity intensity are reported and defined as inactive (<30 minutes/day), not moderately active (≥30, <60 minutes/day), and moderately active (≥60 minutes/day) according to guidelines for children (World Health Organization, 2010).

Table 3. Student Activity Questionnaire Grid during the Covid-19 Pandemic.

Variable	Activities	Number
	Students' daily activities	1,2,3,4,5,6

Student activity activities of the sports education department	Sports Activities travel to do student activities	7,8,9
	Student recreational activities	10,11,12,13,14 ,15
	Passive behavior of students	16

Table 4. Student Daily Activities during the Covid-19 Pandemic

Variable	Information	F	%
Students do high-intensity daily activities/week.	Yes	209	66%
	No	105	34%
Duration of high-intensity Physical activity/ Week	10-30 minutes	68	33%
	31-60 minutes	72	34%
	61-90 minutes	39	19%
	91-120 minutes	24	11%
	121-150 minutes	3	1%
	151-180 minutes	3	1%
Frequency of high-intensity activity/week	1	5	2%
	2	34	16%
	3	93	44%
	4	49	23%
	5	28	13%
Students carry out daily activities of moderate intensity/week	Yes	253	84%
	No	51	16%
Duration of activity Moderate intensity physical activity/ Week	10-30 minutes	100	38%
	31-60 minutes	98	37%
	61-90 minutes	44	17%
	91-120 minutes	17	6%
	121-150 minutes	2	1%
	151-180 minutes	2	1%
Frequency of moderate-intensity activity/week	1	8	3%
	2	59	22%
	3	103	39%
	4	57	22%
	5	36	14%

3 Results and Discussion

The results of the study conducted using a descriptive statistical analysis test filled with four things, namely: (1) Daily physical activity activities of students (Table 4); (2) Types of student sports (table 5); (3) passive behavior of students (Table 4).

Physical activity activities are shown in Table 4, which explains that if students of the physical education department (N = 314) Doing physical activity during the pandemic with high intensity, 209 students amounted to 66%, while for daily activities with moderate intensity, 84%. Physical activity is important to do. Muscle work when doing

physical activities such as walking, running, playing badminton, and other sports will increase the body's metabolism, and if done regularly, it will greatly support the physical fitness of students to undergo academic activities on campus. During physical activity, the muscles will need energy to do their work. Much less energy expended will depend on the high and low intensity of the exercise performed. Physical activity done regularly as part of the daily routine is termed as regular activity, whereas physical activity is done intentionally in addition to ordinary activities called leisure activities [12].

The duration of high-intensity physical activity every week carried out by students is dominated by a period of 31-60 minutes by 34%, while moderate-intensity physical activity is more dominant with a time of 10-30 minutes by 38%. Physical activity levels in children and adolescents conform to the recommendation of at least 60 minutes of moderate-intensity activity at least five days a week or every other day. Improving fitness requires 60 minutes or more of moderate exercise or 30 or more minutes of strenuous physical activity each day [13]. The frequency of high activity was carried out 3 times for 1 week with a percentage of 44%, and the frequency of moderate-intensity activity in each week 3 times with a portion of 39%. The results of student physical activity activities show that students more often carry out moderate activity activities. However, in the same activity, the duration of high-intensity action with a period of 31-60 minutes is more often done by students who do sports activities. The contribution of determining the frequency of exercise is seen by the stable implementation of low or high-intensity practice 3 times in 1 week. Interventions in the form of training should be part of people's regular care because they have various benefits, not only for physical health but also for mental health [14].

Table 5. Types of Daily Activities Student Sports

Variable	Information	F	%
Low-level categories	1 Activity	23	16%
	2 Activities	67	46%
	3 Activities	57	39%
Mid-level category	1 Activity	22	15%
	2 Activities	77	52%
	3 Activities	48	33%
High-level categories	1 Activity	28	19%
	2 Activities	68	46%
	3 Activities	51	35%

Table 5 shows the types of student sports activities based on the level category of sports activities carried out during the COVID-19 pandemic. The results of this study show that activity activities at a low level by making Bowling, Yoga, Billiards, Aerobic Gymnastics, low impact, fishing, hunting, walking, or cycling on a constantly slow stroke tend to do 1 activity (16%), 2 activities (46%) and 3 activities (39%) while at moderate activity levels riding, gyms, aerobic gymnastics medium impact, golf, walking or cycling on a quick stroke in category 1 activity (15%), 2 activities (52%) and 3 activities (33%). At a high level of activity, football, running, futsal, badminton, field tennis, squash, swimming, basketball, hockey, volleyball in category 1 activity (28%),

2 activities (68%) and 3 activities (35%). Judging from the sub-category of types of student sports activities, students with low-level activities are dominated by doing 2 types of activities (46%), medium activity levels with 2 types of activities (52%), and high activity levels with 2 activities (46%). Regarding physical activity as an important healthy lifestyle, the status and level of demand for participation in physical activity among college students can positively impact their health and quality of life. This illustrates if the type of sports carried out by students during the pandemic provides a choice of the kinds of activities that can be done after the COVID-19 pandemic.

Table 6. Passive Behavior of Students

Variable	Information	F	%
Time spent sitting and lying down / week	1-2 hours	57	18%
	2-3 hours	78	25%
	3-4 hours	68	22%
	4-5 hours	51	16%
	5-6 hours	29	9%
	6-7 hours	19	6%
	'> 7 hours	12	4%

The results of Table 5 show that students' free time to sit or lie down is carried out 2-3 hours, as much as 25%, 3-4 hours, as much as 22%, and 1-2 hours 18%. It can give an idea that students are more likely to predominantly spend time doing physical activity rather than sitting and relaxing, And college students who have higher physical activity needs tend to invest more energy to participate in physical activity to let go of negativity. Emotions such as stress and anxiety can be managed through physical activity, and then a positive and stable sense of well-being in studies and student life can be maintained into the future [15].

Students of the physical education department have begun to do a lot of physical activities after the pandemic because the implementation of lectures is carried out face-to-face by students and lecturers on campus. This has a positive impact on physical education department students from previous studies of passive behavior, students who predominantly have sedentary behavior by sitting or lying down casually every day, namely male students of the class of 2017 and 2018. Students of the 2017 class were 3.7%, while students of 2018 were 10% larger than the older batch. Meanwhile, the class of 2019 is 2.5% [16]. In other words, college students who have higher physical activity needs tend to devote more time and energy to physical activity and will have a better physical activity flow experience. This means that the higher the physical activity needs of students in the current post-pandemic context, the more likely their physical activity will be greater.

4 Conclusion

The impact of COVID-19 has not only changed the environment in which students participate in physical activity but also impacted students' passive behavior in participating

in physical activity, ultimately limiting their level of participation in physical activity. In turn, related research found that post-pandemic students' physical activity is in the moderate category, with a frequency of 3 times in 1 week and a duration of 30 minutes to 60 minutes. The passive behavior of students is relatively low because sitting and lying down time is only done 2-3 hours within 1 week.

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