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Survey of Physical Activity of Students Sports Science Department, Universitas Negeri Semarang Class of 2022 During the Covid-19 Pandemic

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ABSTRACT

The purpose of this study was to know the physical activity of students Sports Science Department, Universitas Negeri Semarang, class of 2022 during the covid-19 pandemic.The survey method uses a questionnaire in the form of a google form. The instrument used is the Global Physical Activity Questionnaire (GPAQ) from WHO. Data collection was carried out in December 2022 using total sampling in sampling. The analysis in this study uses the help of SPPS and Microsoft Excel. The results of this study indicate that physical activity is included in the high category. The physical activity of male students has details of 7.1% in the low category, 27.4% in the medium category, and 65.5% in the high category. Meanwhile, female students have a breakdown of 8.6 % in the low category, 34.3% in the medium category, and 57.1% in the high category. This is due to the loosening of regulations from the government in dealing with Covid-19 which have slowly improved so that students can carry out physical activities more freely.

Keywords *: physical activity, students, covid-19*

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INTRODUCTION

The world is currently experiencing a virus outbreak that is quite dangerous. This relatively new virus quickly spread to almost all countries in just a few months, including Indonesia. A viral outbreak called pneumonia appeared at the end of December 2019 in Wuhan City, China due to severe acute respiratory syndrome 2 (SARS-CoV-2), which the World Health Organization (WHO) has finally named Coronavirus Disease 2019 (Covid-19) (He et al., 2020) . On March 11, 2020, WHO has declared the corona virus a global pandemic. SARS-CoV-2 invades the airways around the bronchioles involving the interstitium and can cause bronchiolitis that spreads to the distal end (Meng et al., 2020). This virus primarily infects animals such as bats but can also infect humans. Before the Covid-19 outbreak, there were 6 types of corona viruses that infected humans, such as alphacoronavirus NL63 of the genus polygonum, alphacoronavirus 229E, betacoronavirus OC43 and HPU, betacoronavirus HKU1, Middle East Respiratory Syndrome Coronavirus (MERS-CoV), and Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) (Susilo et al., 2020). The virus underwent several

mutations that resulted in several variants. WHO in (Susilo et al., 2022) these variants are divided into 3 major groups namely Variants of Concern (VoC), Variants of Interest (VoI), and Variances Under Monitoring (VUM).

On March 13, 2020 the Task Force for the Acceleration of Handling the Corona Virus Disease 2019 (Covid-19) was formed which aims to accelerate and increase anticipation of the development of the spread of Covid-19 in Indonesia. Several policies have been implemented, one of which is by implementing physical distancing. This step has an impact on limiting physical activity in various fields of life such as the field of education at the tertiary level for students of Sports Science Department, Universitas Negeri Semarang, the majority of whom carry out activities outdoors or in the field. Even though this outbreak has occurred since 2019 until now, the lecture system at each tertiary institution has different policies in overcoming and staying vigilant following developments in the covid-19 outbreak which could escalate at any time.

SE INMENDAGRI Number 50 of 2022 concerning the implementation of PPKM in the condition of the 2019 corona virus disease states that areas with level 1 criteria including Semarang implement limited face-to-face learning activities and/or distance learning. Lectures for IKOR Department, UNNES students class of 2022 are still being conducted through online discussions using video conferencing as a means of communication between lecturers and students. As many as 69.7% of students use Whatsapp groups as learning media and 75.2% of students use Whatsapp groups as a medium for collecting assignments (Nopiyanto & Ibrahim, 2021). There are several sports activities or practical lectures that were previously actively carried out by students in the campus environment, some of which can be carried out online by following policy developments and lectures in the field so that they become less than optimal. Lectures that are conducted online can automatically increase the use of gadgets in students and lead to a sedentary lifestyle (Hakim et al., 2021). This sedentary lifestyle occurs due to a lack of physical activity and body movements (Mandriyarini et al., 2017). The tendency of students to conduct lectures by doing assignments online through technology for several hours sitting in front of a laptop and having to monitor smartphone screens without having to come to campus causes a lack of physical activity.

For example, a previous study conducted by Adhyputri et al., (2021) on 120 students at the Faculty of Medicine at Universitas Islam Bandung that almost the majority of students carried out high sedentary behavior and experienced a significant increase during the Covid-

19 pandemic. This sedentary behavior lasts ≥6 hours. Students spend more time playing video games, watching television, and listening to music than doing other physical activities. When examined before the Covid-19 pandemic, research conducted at a University in the Canadian Province of Quebec also showed that there were 55.2% of students who did not do physical activity for at least 150 minutes in a week, both moderate and heavy intensity (Busque et al., 2017). This may increase with the Covid-19 pandemic.

With the current Covid-19 outbreak, it is recommended to engage in moderate-intensity physical activities such as strength training, flexibility, and cardiac endurance (Wong et al., 2020) . Zourikian, et al in (Andriyani, 2014) explained that physical activity is any activity that involves some form of physical movement that burns calories and causes a person's body to work harder than usual. Hardinge & Shryock, (2001) explained that there are four main dimensions that are the focus in assessing physical activity, namely type, frequency, duration, and intensity. WHO in (Hamrik et al., 2014) states that physical activity can be categorized into 3 levels through criteria, namely heavy physical activity, moderate physical activity, low physical activity. Low physical activity from a sedentary lifestyle can also increase the risk of various diseases such as hypertension, diabetes, and obesity even at a younger age, namely under 35 years of age in recent years (Hendsun et al., 2021) . Physical activity for a person can be influenced by several factors, namely personal factors, social factors, and environmental factors (Gondhowiardjo, 2019) . Research conducted by Farradika et al., (2019) on 846 students of the Faculty of Health Sciences, Universitas Muhammadiyah Prof. Dr. Hamka (FIKES UHAMKA) also shows that there is a relationship between employment status, gender, availability of facilities or infrastructure in the surrounding environment, perceptions of physical activity, and support for physical activity.

It is necessary to pay attention to the level of physical activity carried out by students, especially students from the IKOR Department, UNNES with the Covid-19 outbreak to continue to improve the quality of life in order to suppress the emergence of various diseases. In general, physical activity has benefits physically/biologically and psychologically/mentally (Welis & Rifki, 2013). Based on the phenomenon that is happening in the description above, it can be seen that there is a gap in research that the fact is that the majority of teenagers experienced a lack of physical activity before the Covid-19 pandemic coupled with the Covid-19 outbreak and the existence of policies from the government, one of which was in an effort to break the chain of the spread of Covid-19, this could have an impact on patterns of limiting

student activities and the risk of experiencing a sedentary lifestyle. This study has the characteristics of research subjects, namely students majoring in sports who are dominant in doing a lot of physical activity. Students are categorized at a developmental stage when they are 18 to 25 years old. At this age, it can be classified as the end of adolescence and the beginning of the adult phase, so that it can be said that the student age is the phase in which individuals can establish their lives (Hayani & Wulandari, 2017). Therefore this research was conducted to determine physical activity during the Covid-19 pandemic, especially for students IKOR Department, UNNES class of 2022.

METHOD

This study used a survey in the form of a questionnaire distributed in the form of a Google Form. This research method is descriptive quantitative. This research was conducted in the homes of each student. The time for data collection was December 2022. The population in this study were students of the IKOR Department, UNNES class of 2022. The sampling technique in this study used saturated sampling or total sampling where all students of IKOR Department, UNNES class of 2022 were used as samples. The instrument used in this research is the Global Physical Activity Questionnaire (GPAQ) from WHO which has been translated into Indonesian. In this questionnaire students were given questions about physical activity consisting of 16 questions (P1-P16). These questions include on-site activities, travel to and from locations, recreational activities, and sedentary activities. Based on the research by Cleland et al., (2014) the physical activity value of the GPAQ has a moderate level of validity correlated with data from the accelerometer (r=0.48) whereas in the study of Bull et al., (2009) stated that overall the GPAQ questionnaire presents valid data and has a strong reliability value (Kappa 0.67 to 0.73) so that it can be used to measure physical activity in public health research systems.

The research procedure is divided into 3 parts, namely the preparation stage, the implementation stage, and the final stage. In the preparatory stage, the research schedule was prepared, the licensing arrangements were made, and the instruments were prepared to be given to the respondents. At the implementation stage, the questionnaire link was distributed online, monitoring, and carrying out the procedure for calculating total physical activity with the formula:

Total Physical Activity MET minutes/week = [(P2 × P3 × 8) + (P5 × P6 × 4) + (P8 × P9 × 4) + (P11 × P12 × 8) + (P14 × P15 × 4)]

This measurement will be classified based on the Metabolic Equivalent of Task (MET). According to Bouchard et al., (2007) Metabolic Equivalent (MET) is a standard unit used to determine the amount of energy (oxygen) used by the body during physical activity. After obtaining the total value of physical activity in units of MET minutes/week, the respondents are classified into 3 levels as follows:

Table 1. Categories of Physical Activity

MET minutes/week	***Category***
METs ≥ 3000	High
METs ≥ 600-3000	Medium
METs < 600	Low

The final stage is to re-examine the results of filling in and then processing the data for later analysis. The stages of analysis in this study are 1) cleaning, 2) coding, 3) scoring, 4) data entry, and 5) verification. The analysis technique used in this research was the frequency distribution data using Microsoft Excel and SPSS applications.

RESULTS AND DISCUSSION

Results

The results of this study is a descriptive quantitative study which intends to know of physical activity in Sports Science students, Universitas Negeri Semarang class of 2022 during the Covid-19 pandemic. The population in this study is student of Sports Science Department, Universitas Negeri Semarang class of 2022 which amounted to 135 people, but during the research, only 119 students, because there are students who have moved and researchers could not directly supervise during the study. The results of the complete research will be described as follows:

1. **Distribution of IKOR, UNNES Students Class of 2022 Based on General Characteristics.**

Table 1. Number of IKOR, UNNES Students Class of 2022

Gender	*Amount (n)*	*Percentage (%)*
Men	84	70,6
Woman	35	29,4
Total	119	100

There were 84 male and 35 female students who filled out the GPAQ physical activity questionnaire out of the total number of IKOR UNNES students class of 2022.

Table 2. Age Profile of IKOR, UNNES Students Class of 2022

Age	*Amount (n)*	*Percentage (%)*
17	2	1,7
18	52	43,7
19	53	44,5
20	10	8,4
21	2	1,7

There are 2 IKOR students class of 2022 who are 17 years old and 21 years old respectively. In addition, the majority of students are in the age range of 18-19 years. There are 10 students aged 20 years.

2. Physical Activity of IKOR, UNNES Students Class of 2022.

The physical activity of IKOR, UNNES students class 2022 is divided into 4 main domains, namely work activities, travel activities, recreational activities, and sedentary activities. The activity duration per domain which is classified as heavy activity is multiplied by the MET coefficient of 8. Meanwhile, activity duration data is classified as medium multiplied by the MET coefficient of 4. The activity data per domain can be seen in more detail as follows :

1. Physical Activity while Working of IKOR, UNNES Students Class of 2022

Table 3. Average MET Value of Physical Activity during Work of IKOR, UNNES Students Class of 2022.

Variable	*Physical Activity during Work (MET minutes/week)*		
	Min	*Max*	*Means*
Men	0	26880	4312,38
Woman	0	38760	4181,49

2. Physical Activity while Traveling of IKOR, UNNES Students Class of 2022.

Table 4. Average MET Value of Physical Activity during Traveling of IKOR, UNNES Students Class of 2022.

Variable	*Physical Activity during Traveling (MET minutes/week)*		
	Min	*Max*	*Means*
Men	0	3360	292,19
Woman	0	3360	304,57

3. Physical Activity during Recreation of IKOR, UNNES Students Class of 2022.

Table 5. Average MET Value of Physical Activity during Recreation of IKOR, UNNES Students Class of 2022.

Variable	*Physical Activity during Recreation (MET minutes/week)*		
	Min	*Max*	*Means*
Men	0	12240	3125,62
Woman	0	24000	2618,06

4. Sedentary Activities of IKOR, UNNES Students Class of 2022.

Table 6. Average Sedentary Activity Time on IKOR, UNNES Students Class of 2022.

Variable	*Sedentary Activity per Day (minutes)*		
	Min	*Max*	*Means*
Men	20	1080	309,31
Woman	15	840	302,14

5. Total Physical Activity of IKOR, UNNES Students Class of 2022.

Table 7. Average MET Value of Total Physical Activity of IKOR, UNNES Students Class of 2022.

Variable	*Total Physical Activity (MET minutes/week)*		
	Min	*Max*	*Means*
Men	60	35040	7730,19
Woman	420	48480	7104,11

3. Physical Activity Level of IKOR, UNNES Students Class of 2022.

After the data per domain is converted in units of MET minutes per week and the total physical activity of students is known, then physical activity is categorized based on low, medium and high criteria. The physical activity of students who have a MET value of ≥ 3000 is classified in the high category, MET ≥ 600-3000 is classified in the medium category, and MET < 600 is in the low category. Data on the physical activity grouping of students majoring in Sports Science, Universitas Negeri Semarang class of 2022 can be seen in the following table:

Table 8. Level of Physical Activity of Male IKOR, UNNES Students Class of 2022.

Category	*N*	*%*
Low (MET < 600)	6	7,1
Medium (MET ≥ 600-3000)	23	27,4
High (MET ≥ 3 000)	55	65,5

Table 9. Level of Physical Activity of Female IKOR, UNNES Students Class of 2022.

Category	*N*	*%*
Low (MET < 600)	3	8,7
Medium (MET ≥ 600-3000)	12	34,3
High (MET ≥ 3000)	20	57,1

Discussion

After doing the calculations, when viewed based on the activity domain, the average MET values for physical activity of IKOR, UNNES students class of 2022 are 1) work physical activity 4345,54 and 4181,49 MET minutes/week, 2) recreational physical activity 312,.62 and 2618,06 MET minutes/week, and 3) travel physical activity 292,19 and 304,57 MET minutes/week. Based on the results of these data, the highest contribution to physical activity was obtained from work activities with the largest MET values for both men and women. The time required to perform physical activity indicates that both strenuous and moderate work activities require the longest time so that the MET results obtained are also quite high. This happened because sports practice activities had started to be carried out normally on campus even though the Covid-19 pandemic had not completely ended. In addition, based on the answers from the questionnaires that have been collected, there are several students who have activities or routines outside of lectures with moderate or heavy intensity activities. After college, some students still help with their parents' activities or have side jobs.

A sizeable contribution is also obtained from recreational activities. Although the average value of recreational activities is less, it has only a small difference from work activities. Based on the questionnaire that was filled in, there were several male and female students who were still active as athletes so they had a training schedule outside of college activities such as football with a training schedule 3-5 times a week, basketball with a frequency of training 3 times a week with a duration of 1 hour, taekwondo frequency 2x a week with a duration of 1.5 hours, and others. In addition, even though they are not athletes, there are also

students who still do sports activities as a hobby. Sports activities include aerobics jogging, swimming, badminton, tennis and volleyball. Students also engage in martial arts such as pencak silat, wushu, muaythai, judo, and degree fighting.

Travel or transportation physical activity shows that the average number of MET values produced is much less and has many differences compared to work activities and recreational activities, so travel activities only contribute a little. Students who carry out travel or transportation activities only have an average MET score of 292.19 for males and 304.57 for females. The MET value for travel activities is lower because students tend to use motorbikes more than walking to get around. Most students migrate and the distance from their place of residence to campus is relatively far if they walk, so students prefer to ride motorbikes.

In the work and recreation domain, the average MET score for male students is higher than that for female students, but in the transportation domain, the number of MET female students is slightly higher than that of male students, with a MET score of 292.19 for males and 304.57 for females. The data shows that the physical activity level of female students in the travel domain is greater than that of male students. This can happen because of demographic differences such as gender and environmental conditions. This situation is in line with research conducted by Seefeldt et al., (2002) that environmental conditions and behavioral characteristics are factors that influence the level of physical activity. From the results of these data it can be seen that from the average MET value of activities per domain, work activities and recreational activities have a greater contribution than travel activities.

Average value of total physical activity MET minutes /week for male students is 7730,19 higher than female students who have a value of 7104,11. Once the total physical activity value is known, it can also be known the physical activity category of students in each domain. It is known that 55 or 65.48% of male students and 20 or 57.14% of female students have MET scores ≥ 3000 which indicates physical activity is included in the high category. As many as 23 or 27.38% of male students and 12 or 34.29% of female students have MET interval values ≥ 600-3000 which are in the moderate category. Then as many as 6 or 7.14% of male students and 3 or 8.57% of female students have a MET value <600 which indicates physical activity in the low category. From these results it can be seen that the level of physical activity of students in Sports Science, Universitas Negeri Semarang class of 2022 is mostly included in the high category. These results are not in line with the research conducted Kaharina et al., (2021) which shows that physical activity in sports students has decreased significantly and tends to have moderate physical activity.

Physical activity of students was relatively high during the Covid-19 pandemic because students were still able to carry out activities as usual and could still find time to do recreational activities after lecture activities. In line with Azzami et al., (2021) who conducted research on PJKR students at PGRI Universitas Semarang, showing that the majority of students still routinely carry out activities such as sports during the Covid-19 pandemic. The reopening of sports venues is also one of the reasons IKOR, UNNES students class 2022 can resume sports activities other than on campus. Doing physical activity is also an effort to strengthen the immune system, showing benefits in response to viral infectious diseases. Regular exercise with adequate intensity is a tool in strengthening and preparing the immune system to deal with Covid-19 (da Silveira et al., 2021) .

The high results of student physical activity were also caused by regulations from the government that were no longer the same as during the early days of the pandemic. As in SE INMENDAGRI Number 53 of 2022 which was issued on December 30, 2022, with the Covid-19 conditions slowly starting to improve, PPKM was declared discontinued. However, this statement does not mean that the Covid-19 pandemic is over. Given that the risk of transmission of Covid-19 and the emergence of new variants can still occur, so they must remain vigilant and increase their self-reliance so they don't get infected with Covid-19. Several health protocols still need attention, such as maintaining hand hygiene by washing hands with soap and using a mask, especially when you feel you have symptoms of a respiratory illness (such as coughing, runny nose/and sneezing).

Student awareness of the importance of doing physical activity and exercising to maintain health is also one of the factors for physical activity in the high category. From the results that have been obtained, the level of physical activity of IKOR, UNNES students has mostly met WHO health recommendation standards by doing physical activity for at least 2.5-5 hours at moderate intensity or 1.15-2.5 hours at high intensity. Good physical activity for students can provide benefits to the body and psychological/mental such as increasing endurance, maintaining body weight, reducing stress, and increasing self-confidence.

There are several students' physical activities that are included in the low category. Low physical activity is known to cause a person to be susceptible to disease or health problems. In addition, low levels of physical activity in college students can lead to a significant increase in obesity (Magdalena et al., 2021) . Meanwhile, male students on average performed sedentary behavior by sitting and lying down except sleeping for 309.31 minutes or 5.15 hours and female students for 302.14 minutes or 5.03 hours. Most IKOR students use sendentary behavior to play smart phones, watch movies, and hang out with friends (hanging out).

CONCLUSION

Based on the results of the research and discussion, it can be concluded that the majority of the physical activity of IKOR, UNNES students is in the high category. This is caused by the loosening of government regulations following the development of Covid-19 which is starting to improve so that students can carry out activities while still paying attention to health protocols and there is student awareness of the importance of carrying out activities such as sports activities. The results of this study are expected to contribute information regarding physical activity to students during the Covid-19 pandemic to continue to maintain body immunity supported by synergistic collaboration between institutions in the fields of education, sports and health in developing study programs from home through sports activities that are well conceptualized so that the body's health is maintained.

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