The difference between male and female student’s physical activity in urban region during school recess

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Received: December 15, 2020; Accepted: August 4, 2021; Published: September 25, 2021

Abstract: Physical activity is one of the important components to support individual fitness and health. This study aims to determine differences in physical activity between male and female students of class V in urban areas during school breaks. This type of research is comparative descriptive. The research sample consisted of 54 elementary school students of grade V in urban areas in Depok Subdistrict, Sleman Regency, Yogyakarta Special Region. The technique used to determine the research sample is purposive sampling. The instrument in this study was the Nesco FJ 101 pedometer. The data analysis technique used in this study is a percentage. The results showed that the mean value of the male students' physical activity level was 1897.5, while the female students' mean score was 1507. Based on the results obtained, there were differences between male and female students. It can be concluded that there is a significant difference between the physical activity levels of male and female grade V students during school breaks in the DIY urban area.

Keywords: physical activity, students, school recess, urban area

How to Cite: Supriyanto, A., Kriswanto, E.S., Andrisani, F.D., Prasetyo, Y., & Ardian, S.D. (2021). The difference between male and female student’s physical activity in urban region during school recess. Jurnal Keolahragaan 9 (2), 202-209. doi: https://doi.org/10.21831/jk.v9i2.36586

INTRODUCTION

When someone does sports, it will include movement activities that involve physical movement. Physical activity is an activity that involves voluntary movements that burn calories and cause a person to work harder than normal conditions (Kostrezewska, 2017). Physical activity is any movement of the body produced by skeletal muscles that require energy expenditure. The lack of physical activity is an independent risk factor for chronic diseases, and overall is estimated to cause death globally (WHO, 2010). Sports that involve physical activity and movement performed by individuals are expected to be able to provide fitness if they can do it every day. Nugroho, Kristiyanto, & Doewes (2018) stated that physical education is a phase of an overall educational program that contributes to the children’s general growth and development, especially through the experience of movement.

Apart of its benefit for maintaining physical fitness, doing physical activity and movement regularly is important to achieve positive health outcomes. In line with this statement, Rosidin, Sumarni, and Suhendar (2019) mentioned that doing regular movement activities and doing a healthy and balanced lifestyle will provide health benefits for body. Wiyajanti and Endrotomo, (2017) also stated that doing good mobile activities affect one’s health. By paying attention to health through movement activities, it can prevent us from serious health problems (Muzamil et al., 2014). Although the results of previous research revealed that doing physical activity and movement can provide fitness and health, in fact, today many individuals find it difficult to carry out physical activity and movement.

Several factors may influence someone to feel reluctant to carry out mobile activities, including the advance of technology. The influence of this technology will also affect the world of work which is lighter and does not require maximum body movement. The existing technological advances affect individuals in carrying out physical activities (Effendi & Prihanto, 2014). Setiawan (2018) mentioned that technological advances caused someone to feel lazy in carrying out physical activity. Prasetyo (2014) stated that the advances in technology have resulted in a lack of public awareness of sports which have the impact of contributing to the development of individuals and communities that smart, healthy, skilled, tough, competitive, prosperous, and dignified.

https://doi.org/10.21831/jk.v9i2.36586
The technological advances are very developed in urban areas. Urban areas are areas that have better progress compared to other areas (Supriyatin et al., 2020). Life in urban areas that has more progress than other areas, so that the use of technological developments is more rapid, is associated with laziness in exercising. In line with this statement, Prasetyo (2015) revealed that people who live in urban areas were lazy and rarely do mobile activities due to their busy activities. In urban areas, the class of children in elementary school has a big impact on laziness to do sports. When at school, the children tended do good movement activities but this might not the case if it is on outside school hours.

Outside school hours, children in urban areas tended to be less active in carrying out movement activities. Data from the 2013 Basic Health Research (Badan Penelitian dan Pengembangan Kesehatan Kementrian Kesehatan RI, 2013) showed that in Indonesia, the population aged ≥ 10 years who are classified as less physically active was 26.1 percent. In the age group of children (10-14) who have an inactive lifestyle, the percentage is 67%, and those in the youth group to young adults (15-24) are 52%. Furthermore, there are 22 provinces whose numbers exceed this figure. The top five were DKI Jakarta (44.2%), Papua (38.9%), West Papua (37.8%), Southeast Sulawesi, and Aceh (37.2% each. For special regions, Yogyakarta does the less active physical activity by 20.8%.

This data is also strengthened by the results of the surveys and observations of fifth-grade elementary school students in urban areas. The results showed that some students tended to be active at school and were less active after schoolhours. This can be seen from the admissions of several students who said: when at school most grade V students relax in class, have a snack, or chat with friends. At school, children were allowed to bring cellphones but cannot be used until class hours are over, while after school the children immediately eat and look for cellphones/gadgets, after that sit around while watching television after night comes if there is homework, the children do homework and after that watch television while playing on their cellphones. Students have various activities after school, such as watching television, eating, and playing with gadgets. These students can play with gadgets for up to 8 hours a day. Children were recommended to limit their screen time for maximum 2 hours per day (sumber). Ironically, parents still consider this situation as normal. If situation remained continues, it may become a bad habit for these students. But, our observations also showed that there were students who was already aware of the importance of physical activities for health. This can be seen from the awareness of students participating in various sports activities outside of school.

Based on the problems expressed regarding mobile activity and technological advances in urban areas that affect laziness in carrying out physical activity, we wants to examine the difference in physical activity between male and female students of the fifth-grade elementary school in an urban area. To our knowledge, previous research in this topic has never been carried out, especially in the urban area of the DIY province. This is considered important to be a reference or recommendation to teachers or parents to find out the physical activity that the child is doing so that if the child is lacking in physical activity, movement can be maximized so that it has a health impact and good exercise habits.

**RESEARCH METHODS**

*This research used comparative descriptive design* with the aim to describe the difference in physical activity between male and female students of the fifth-grade elementary school in an urban area in Yogyakarta. The method used in this research is a survey with data collection techniques using a questionnaire. The sample of the study was the fifth-grade elementary school students in an urban area, namely Depok District, Sleman Regency, Yogyakarta Special Region. Sampling using random techniques. The students were grade V elementary school students from SD N Samirono and SD N Catur Tunggal 7 with a total of 27 male and 27 female total is 54 students. The *instrument in this study was the Nesco FJ 101 pedometers, which has capacity to record up to 99,999 footsteps. The pedometers have an error rate below 5%. (0.7%).*

The data analysis technique used in this study is a percentage with the following steps: Using the following formula, it is described as below:

\[ P = F \times 100\% \]

\[ N \]

Information:

P: Percentage

F: Frequency
RESULT AND DISCUSSION

Based on the results of calculations using the percentage that has been carried out, there are several parts of the research results expressed by each sub, namely, the level of overall student activity, the level of physical activity of male and female students of grade V elementary schools in the urban area of Yogyakarta province. Each of these subs will be described in the research below:

The level of daily physical activity of all students and fifth-grade elementary school students in urban areas of Yogyakarta Province

The results of the calculation of data analysis regarding the overall physical level of grade V elementary school students in the urban area of the province of DIY which has been researched produce data that can be seen in Table 1 below:

| Interval               | Criteria        | Frequency | Percentage |
|------------------------|-----------------|-----------|------------|
| X ≥ M + 1,5 SD        | Very high       | 5         | 9.26       |
| M ≤ X < M + 1,5 SD    | High            | 24        | 44.44      |
| M - 1.5 SD ≤ X < M    | Low             | 23        | 42.59      |
| M - 1.5 SD ≥ X        | Very Low        | 2         | 3.70       |
| Total                 |                 | 54        | 100        |

Judging from table 1 above which is the result of descriptive analysis. It is known that the overall maximum value obtained for class V is 40.44. Meanwhile, the minimum value expressed is 16.98. The average level of daily physical activity of students was 26.82 and the standard deviation (SD) was 5.30. From the results of the description, the data that has been collected is then converted into an assessment table and the following results are obtained:

| Interval               | Criteria        | Frequency | Percentage |
|------------------------|-----------------|-----------|------------|
| X > M + 1,5 SD        | Very high       | 5         | 9.26       |
| M < X ≤ M + 1,5 SD    | High            | 24        | 44.44      |
| M - 1.5 SD < X ≤ M    | Low             | 23        | 42.59      |
| M - 1.5 SD ≥ X        | Very Low        | 2         | 3.70       |
| Total                 |                 | 54        | 100        |

Based on table 2, reveals the categories and values obtained based on the calculation of research analysis. The data revealed that there were several categories obtained by male and female students regarding daily physical activities at school. Of the 54 total students, there are 5 students (9.26%) who are in the very high category, 24 students (44.44%) are in the high category, 23 students (42.59%) are in a low category and the rest are 2 students (3.70%) falls into the very low category.

Level of daily physical activity of fifth-grade elementary school students in urban areas of Yogyakarta province

The results of the calculation of data analysis regarding the physical level of grade V elementary school students in the urban area of Yogyakarta province that have been carried out by the research have produced data that can be seen in Table 3 below:
Table 3. Descriptive analysis of male students

| Statistic       | Value  |
|-----------------|--------|
| Maximum Value   | 40.44  |
| Minimum Value   | 18.81  |
| Average         | 27.52  |
| SD              | 5.76   |

From table 3 above regarding the descriptive analysis above, it can be seen that the maximum value obtained by male students in grade V is 40.44. While the minimum score obtained by class v students is 18.81. Then the mean results obtained for class v student mental activities were 27.52. The standard deviation (SD) is 5.76. Then, to find out the categories obtained for each student and the calculation results can be seen in Table 4 below:

Table 4. Daily Physical Activity Levels of Class V Elementary Schools in Urban Area of Yogyakarta Province

| Interval                  | Criteria       | Frequency | Percentage |
|---------------------------|----------------|-----------|------------|
| X > M + 1.5 SD            | Very High      | 3         | 10.71      |
| M < X ≤ M + 1.5 SD        | High           | 13        | 46.43      |
| M – 1.5 SD < X ≤ M        | Low            | 11        | 39.28      |
| M – 1.5 SD ≥ X            | Very Low       | 1         | 3.57       |
| Total                     |                | 28        | 100        |

Based on table 4 above reveals the categories and presentation scores of 28 students from the results of each physical activity of class v students in the urban area of Yogyakarta Province. The results obtained revealed that there were 3 students (10.71%) who were in the very high category. Meanwhile, 13 students (46.43%) fall into the high category. There were 11 students (39.38%) in the low category, namely 1 student (3.57%) in the very low category.

Level of daily physical activity of fifth-grade elementary school students in urban areas of Yogyakarta province

The results of the calculation of data analysis regarding the physical level of fifth-grade elementary school students in the urban area of the province of Yogyakarta, which has been carried out by the research, produce data that can be seen in Table 5 below:

Table 5. Descriptive analysis of female students

| Statistic       | Value  |
|-----------------|--------|
| Maximum Value   | 37.06  |
| Minimum Value   | 16.98  |
| Average         | 26.07  |
| SD              | 4.75   |

From table 5 above regarding the descriptive analysis above, it can be seen that the maximum value obtained by grade V students is 37.06. While the minimum score obtained by class v students is 16.981. Then the mean results obtained for class v student mental activities were 26.07. And the standard deviation (SD) obtained is 4.75. Then, to find out the categories obtained for each student and the calculation results can be seen in Table 6 below:

Table 6. Daily Physical Activity Levels of Class V Primary School Girls in Urban Areas of Yogyakarta Province

| Interval                  | Criteria       | Frequency | Percentage |
|---------------------------|----------------|-----------|------------|
| X > M + 1.5 SD            | Very High      | 2         | 7.69       |
| M < X ≤ M + 1.5 SD        | High           | 11        | 42.30      |
| M – 1.5 SD < X ≤ M        | Low            | 12        | 46.15      |
| M – 1.5 SD ≥ X            | Very Low       | 1         | 3.85       |
| Total                     |                | 26        | 100        |
Based on Table 6 above reveals the categories and presentation values of 26 students from the results of each physical activity of class V students in the urban area of Yogyakarta Province. The results obtained revealed that there were 2 students (7.69%) who were in the very high category. Meanwhile, 11 students (42.30%) fall into the high category. There are 12 students (46.15%) in the low category, namely 1 student (3.85%) in the very low category.

Based on the results of the research that has been done, the level of daily physical activity of grade V elementary school students in the urban area of the province of Yogyakarta is 3.70% with the very low category, 42.59% low, 44.44% high, 9.26% very high. From this data, it can be seen that students in urban areas are still classified as low in physical activity, there are still many students who feel lazy to do physical activities. This is due to several reasons, one of which is the narrow land in urban areas. In urban areas, there are malls and university buildings which cause population density to occur in the area. This has resulted in narrower land in urban areas. The narrowing of the open land for the community also minimizes the space for the community to do physical activities. Based on the results of the research, the activities carried out by students varied greatly, among others: snacks, sitting, walking, football, chasing, chatting, reading, playing, sweeping, and worshiping. Snacking and chasing are the most common activities. During the break, many students snack in the canteen or sellers around the school. In addition to snacks, chasing is a favorite activity of students during breaks, this is done by students to reduce boredom after students are in class and want to vent their emotions by playing. Break time is an important time for children's development, not only physical abilities, but also intellectual, social, and moral abilities. Meanwhile, after school, there some students still carry out routine activities including TPA, playing, reading, watching TV, studying, soccer, cycling, fishing, sleeping, bathing, eating, and sitting around. The most common activities are playing, watching TV and studying. It is not surprising that most of the students' free time is spent playing, either alone or playing with friends.

If you look at the results obtained from data analysis, this study has several similarities from the results of previous studies regarding urban areas affecting students' physical activity. Technological progress in an area can affect changes in human activity. It is further disclosed that technological advances have resulted in a new generation of less physical activity so that it has an impact on the lifestyle and how these individuals are in their socio-cultural conditions in society (Ngaffi, 2014). (Firman & Priambodo, 2017) explained that physical activity outside Physical Education hours as a reference is something students do not normally do, while Physical Education teachers cannot know and directly monitor the physical activities of their students outside of school, so training is needed to provide insight, experience and knowledge of coaching needs to be done with competency development. (Kumala et al., 2019) explained that the results of research conducted reveal that technological advances, especially gadgets, affect how individual physical activity. It is further disclosed that, apart from affecting physical activity, other things that result from technological developments and irregular use of gadgets are the unbalanced nutrition of the individual, this happens because too much food intake is received but not burned or used properly due to lack of physical activity.

Mashili et al., (2018) revealed that there are differences in the physical activities of children who live in rural and urban areas. The results of the study revealed that children living in rural areas had a higher level of physical activity than children living in urban areas, even though physical activity was banaler, but for adequate nutrition, children in rural areas were less than children in urban areas. Falasifah & Noer, (2014) the nutritional status of individuals living in urban areas is better than individuals living in non-urban areas, but for the physical activity of individuals living in urban areas, they are lazier or lower than individuals who live in non-urban areas. In urban society, some problems are often experienced, causing laziness to do physical activity. The problems experienced are, the lack of sports facilities and infrastructure suitable for the age category, as well as the lack of knowledge of the urban community about the importance of carrying out activities to be active in increasing movement (Dewi & Wuryaningsih, 2019). Hian et al., (2013) rural students do better in health-related fitness compared to not in the library list. Ermona & Wirjatmadii, (2018) revealed that there are differences in the level of carbohydrate intake and the level of fat intake with the nutritional status of school children living in urban areas.

Urban students as a whole. Furthermore, it was revealed that the measured fitness included strength, flexibility, strength, and cardiovascular endurance. It was explained that speech students spent more time using electronic devices with advanced technology. (Kostrzewska, 2017) states that several
factors cause individuals in urban areas to have low levels of activity. It was further explained that it is important to understand strategies regarding the planning development of sports facilities and infrastructure and must pay attention to multifunctionality and variability in time to adapt them to changing people’s needs. Many factors differentiate the fitness level of individuals living in urban and rural areas. Furthermore, it is said that there is a need for intervention in urban communities regarding the importance the physical activity to maintain fitness which will affect their health (Muzamil et al., 2014). Sylejmani et al., (2019) revealed that the level of fitness and physical activity of children in rural areas is better than children in urban areas. Rural children are accustomed to carrying out daily activities that are unconsciously related to their weakness, such as muscle tone, speed, and dexterity that are better than rural children. There is a difference in the effect of being overweight between children living in urban and rural areas (Sidiartha & Pratiwi, 2020).

Adolescents who live in rural areas have more space and more space in carrying out sports, they are also accustomed to carrying out daily activities that unconsciously increase physical activity, while adolescents who live in urban areas have different lifestyles, they spend more time on work at the office so they do not do physical activity (Regis et al., 2016). (Duan et al., 2018) lack of land for physical activities in the city causes laziness in the doktaan community to do sports, which results in low physical activity and community fitness in urban areas. Furthermore, it is said that those who have a big impact than all are the elderly, due to lack of land, to do physical activity in the city causes the elderly who should do physical activity to become lazy and have an impact on their fitness. The fitness possessed by urban adolescents is not better than rural adolescents, although if seen from the nutritional intake of adolescents who live in urban areas, they have very good nutritional intake compared to adolescents who live in urban areas, there is no balance between the nutritional intake possessed and The physical activity carried out has resulted in several health problems in urban adolescents (Porter et al., 2019). Lack of physical activity will affect health, it is said that one of the causes of obesity in individuals is influenced by a lack of physical activity. This is known to occur because of the imbalance of food intake that the body has with what is excreted. This happens because of the very little physical activity done recently by individuals (Jane Scott, 2015). (White et al., 2019) explained that the lack of physical activity of individuals living in urban areas is due to lack of land and lack of time for physical activity. Furthermore, he revealed that despite having a high level of activity, individuals living in urban areas are required to do at least 120 minutes of physical activity a week to maintain their body fitness. Setiawan, (2018) revealed that if individuals living in urban areas have a low level of physical activity, this has an impact on their fitness. The research results further explained that if the lack of physical activity in people living in urban areas is caused by a lack of motivation in each individual, the urban community also does not understand that doing regular physical activity will affect fitness which then has an impact on their performance.

CONCLUSION

Based on the results of the study, it can be concluded that the level of daily physical activity of fifth-grade elementary school students in the urban area of Yogyakarta Province is 3.70% in the very low category, 42.59% low, 44.44% high, 9.26% very high. For male students, the category is very low 1 person (3.85%), low 12 people (46.15%), high 11 people (42.30%), and very high 2 people (7.69%). Meanwhile, 2 students were categorized as very low (3.70%), low 23 people (42.59%), high 24 people (44.44%), and very high 5 people (9.26%). The weaknesses and weaknesses that exist are influenced by several factors, namely, there is still a lack of samples needed by the researcher, the researcher has explained to students to answer all questions honestly without having to cheat on their friends, but there are still students who cheat on answers from their friends, there is still a lack of understanding of students about the importance physical activity so that students are not serious in filling out the questionnaire sheet. Although researchers have provided motivation and direction.
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