Elementary Student’s Physical Activity during Pandemic Covid 19

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Abstract

Introduction: Physical activity during the Covid 19 pandemic is essential for primary school students to maintain their physical and mental health.

Objective: The purpose of this study was to reveal the physical activity carried out by elementary school students in the upper class with an age range of 10-12 years while staying at home during the Covid 19 pandemic.

Method: The research using survey method A total of 122 elementary school students participating, the sampling used was convenience sampling. They have wholeheartedly willing to be involved in this research. Modifiable Activity Questionnaire (MAQ), modified back with the Guttman scale, was used as an instrument in this study. The distribution of the questionnaire using google form assistance started from August to September 2020. The data analysis used was descriptive statistics with a simple percentage distribution.

Results: The results showed that male students’ activity level was at a moderate activity level, while female students were at a low activity level. This difference occurs because the habits of physical activity and motivation to move are diverse in gender. Supervision from physical education teachers and parents is needed to supervise the physical activities of elementary school students, especially women, while at home during the Covid 19 pandemic.

Keywords: Elementary studies, physical activity, pandemic covid 19


INTRODUCTION

Sufficient physical exercise or moderate exercise can be associated with a decreased incidence of disease infection. Light physical activity will be more beneficial for immunity function than just doing activities in the form of sitting / not doing any activities (1). However, the fact is that during the Covid 19 pandemic, which requires students to do all activities including schooling at home, many students are passive, meaning that they will spend a long time not doing any activity such as just sleeping or sitting around playing games on gadgets (2). Children's tendency to gadgets connected to the internet makes them prefer to play with gadgets so that there is a tendency for children to be silent and less active. Especially now that the Covid-19 virus has stopped all children's activities, starting from studying, playing, and exercising so that children tend to spend their time every day standing still and playing with gadgets (3).Previous research suggested that primary school children (ages 7-12) experienced a more significant decline in PA than the pre-to-early period of COVID-19. Children were more likely to do PA at home indoors or on neighborhood walks during the initial pre-COVID-19 period (4). Activities that are usually carried out by students daily, such as walking to school, playing bikes outside, hiking to the mountains, swimming, cannot be done freely by students (5).
Forcing children, especially elementary school students, to always stay at home during the Covid 19 pandemic, it can have negative impacts. Research suggests that this habit will increase persistent behavior towards the habit of physical activity that it does (6,7). Reducing the level of their physical activity can harm the health of the body, such as affecting the metabolic rate and energy expenditure, which can result in decreased physical fitness and energy surplus caused by lack of movement (1,8). The misconception of people is that staying at home, which only spends time sitting watching TV, relaxing, and sleeping a lot, will harm their physical health, which results in a decrease in physical fitness, sleep patterns, and inadequate quality of life (3).

While the WHO's recommendation during a pandemic to increase physical activity to maintain immunity, the recommendation is to do a moderate-level activity for 150 minutes per week and strenuous level activity for 75 minutes per week (9). At the elementary school age, the advice for children aged 6-12 years is doing physical activity for 60 minutes per day in which there is activity to maintain the performance of their heart, muscles, and bones. Elementary school students can also do physical activity for 5-10 minutes per day or play around for 30-60 minutes per day or every two days at home (10). Given that children doing the physical activity are essential for the future (11) Physical activity socialization is essential to do continuously, so children's growth and development will not be hampered, even during a pandemic like today (12).

Physical activity is a body movement produced by skeletal muscles that produce energy expenditure above 1.5 metabolic equivalents (MET), such as walking to school or doing household chores such as mopping floors, washing clothes, cleaning glass. 1 MET is equivalent to resting metabolism, or 1 kcal/kg/hr or 3.5 mL/kg/min of oxygen consumption (13). In contrast to exercise training, which is a structured physical activity for specific purposes, such as training to gain strength in the lower limbs and reduce the risk of falls in the elderly (14,15). Students who are actively engaged will increase their physical fitness capacity more than their peers (16). Fit students will not suffer physically in carrying out daily activities (17,18). Elementary school students only need physical activity safely and efficiently daily to maintain their health (19,20).

However, whether or not elementary school students carried out regular physical activity during the Covid 19 pandemic cannot be determined because many factors influence it (21). There are many contextual factors: gender, socio-cultural, school, sports, and family factors (22). Female students usually have more inhibiting factors to perform physical activity than male students (12,23). Inhibiting female students' factors are less time, less pleasure in physical activity, self-confidence, and self-efficacy (24). Girls spend more time abstaining from regular physical activity than boys, suggesting that sex differences in student physical activity can be exacerbated during the COVID-19 outbreak, putting girls at greater risk of health problems due to physical inactivity such as obesity metabolic dysregulation (17,25,26).

However, regardless of the specific causes for changes in physical activity levels, the importance of socialization of physical activity remains an essential issue in efforts to maintain global public health amid the COVID-19 pandemic, especially for elementary school students (27). Therefore, this study aims to describe the physical activities carried out by elementary school students while at home during the Covid 19 pandemic. This description will be a measure to determine policies related to physical activity for elementary school students during the Covid 19 pandemic.

METHOD

The survey method was used in this study to reveal the types of physical activity carried out by elementary school students while staying at home during the COVID-19 pandemic. The survey involves 122 senior high school students aged 10-12 years willing to participate in this study. The instrument used is in the form of a Modifiable Activity Questionnaire (MAQ) (28) which is adjusted back to the characteristics of activities carried out by
elementary school students in Indonesia using the Guttman scale. The reason for taking this instrument is the limited space and time to directly measure the physical activity of students because it is still within the rules of staying at home in the hope of the COVID-19 pandemic (29). This instrument has a Cronbach Alpha reliability value of 0.89. The deployment of this instrument uses google form and the distribution from August - September 2020. All data were analyzed using quantitative research statistical calculations from the Statistical Package for the Social Science (SPSS 20.0). Descriptive statistics with a simple percentage distribution was used to reveal the problems in this study.

RESULTS

The calculating of data from the distribution of questionnaires using descriptive statistics with a simple percentage showing that the physical activity of elementary school students aged 10-12 years while staying at home when Covid 19 was at the level of light activity. Table 1 explains the results of the calculations.

<table>
<thead>
<tr>
<th>MAQ Indicator</th>
<th>Type of Activity</th>
<th>Gender</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freq. (%)</td>
<td>Indicator (%)</td>
<td>Freq. (%)</td>
</tr>
<tr>
<td>Low Activity</td>
<td>Walking</td>
<td>7</td>
<td>5.6</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Jogging</td>
<td>6</td>
<td>4.8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Stretching</td>
<td>2</td>
<td>1.6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Stand on one leg</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Playing in the house</td>
<td>4</td>
<td>3.2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Cleaning the house such as sweeping, mopping the floors, etc</td>
<td>5</td>
<td>4.0</td>
<td>49</td>
</tr>
<tr>
<td>Moderate Activity Level</td>
<td>Push Up</td>
<td>27</td>
<td>21.6</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Sit Up</td>
<td>3</td>
<td>2.4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Back Up</td>
<td>3</td>
<td>2.4</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Squat Jump</td>
<td>1</td>
<td>0.8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Lompat tali</td>
<td>7</td>
<td>5.6</td>
<td>7</td>
</tr>
<tr>
<td>High Activity Level</td>
<td>Cycling</td>
<td>19</td>
<td>15.2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Hiking</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Go up and down the stairs</td>
<td>5</td>
<td>4.0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Swimming</td>
<td>11</td>
<td>8.8</td>
<td>2</td>
</tr>
</tbody>
</table>

The data shows a difference in the level of physical activity at the level of light, medium, and high activity in the acquisition of scores seen from gender. The results data show that the activities of upper-class primary school students aged 10-12 years who stay home during the Covid 19 pandemic are clean -Cleaning the house such as sweeping, mopping the floor, cleaning the glass, washing clothes, washing dishes. This activity includes the low activity level indicator with the highest score gain, namely 56.8%. In light activities carried out by female students, the figure was 12%, while the lowest score for high activity levels was 11.2% of the total physical activities carried out by female students while at home during the Covid pandemic, 19 activities were standing on one leg, backing up, and hiking.
The highest activity level for male students at a moderate level has a rate of 35.2%. Followed by a high-level activity of 28.0%, and the least amount carried out by male students while staying at home during the Covid 19 pandemic was at a low activity level with a value of 19.2%.

The overall data shows that the level of activity of senior high school students in the age range of 10-12 years during the Covid 19 pandemic was at a low activity level for female students and moderate activity level for male students.

**DISCUSSION**

Previous research explained a decrease in students' level of physical activity before and during the COVID-19 pandemic (5). People who stay at home spend more time on low-intensity activities such as doing household chores (cooking, washing dishes, or gardening). Women are generally more susceptible to engaging in these low-intensity activities (23,30). This study also showed that students’ physical activity showed very significant variations among male students during the pandemic compared to female students.

Previous studies have shown that most have demonstrated gender differences in physical activity habits and motivation to exercise(15). The reason is, male students do physical activity mainly for social reasons and competition. Besides, they prefer to practice sports outdoors or in public places such as gyms and fitness clubs. Female students are more likely to do physical activities in a home environment such as aerobics, yoga, pilates, or circuits with push-ups, squats, planks, and jumping jacks (27). Another study also shows that women tend to be higher in carrying out activities at home than men (12).

Differences in physical activity changes between genders may be related to the fact that boys' physical activity is mostly associated with participation in organized sports, in contrast to poorly organized girls. The correlation between physical fitness status and physical activity shows the importance of overall physical literacy in promoting physical activity in challenging circumstances, such as the COVID-19 pandemic in female students(12). Another study that discusses children aged 8-12 years at the Covid 19 pandemic shows that boys tend to prefer to do physical activities such as playing unstructured physical games compared to girls (4).

There are many reasons to reveal the differences in the physical activity of boys and girls. Research explains that lack of facilities (66%), lack of self-motivation (32%) or structure of daily activities (30%), and supervision (27%) become obstacles to regular physical activity at home (26). During the Covid 19 pandemic, everyone is required to be at home to prevent the spread of the virus; therefore, the physical activity carried out by elementary school students can only use makeshift equipment.

The absence of supervision from physical education teachers is also an obstacle to regular physical activity in their respective homes(27). Physical activity teacher intervention to carry out physical activity at home is crucial. Students can maintain their motivation to continue to do a physical activity while staying at home during a pandemic (31). The Covid 19 pandemic requires students to study from home; this means that full supervision from Physical Education teachers is impossible. The supervision of physical activity is shifted to parents (32,33). Parents have an essential role in promoting an active style in their children to maintain their children's physical and mental health. Parents can become role models in carrying out daily physical activities ranging from low to medium to high activity levels, which are done gradually (34).

Besides, psychological factors such as students’ extrinsic and intrinsic motivation to bring out physical activities at home are very lacking, especially female students who think physical activity is offensive (24). Community motivation, especially women to do physical activity, is decreased since the Covid-19 pandemic incident until now due to their fear of going outside to do outdoor sports (35). Students must be motivated to carry out physical activities.
activities, even amid limited space and time amid the COVID-19 pandemic(9). In previous studies, motivation was the most significant occupying factor for regular student physical activity at home (36). To increase student motivation to do physical activity at home, one can use technology-based media such as video games, animation, social media (37). Social support is also essential for changing a less active behavior by way of increasing exercise. Self-efficacy motivates oneself to do a physical activity while staying at home during the Covid 19 pandemic to maintain physical and mental health(29).

CONCLUSION

The physical activity of senior high school students aged 10-12 years showed intermediate results for male students and low levels for female students—differences in physical activity in male and female students who stayed at home during the Covid 19 pandemic. Many factors can affect the differences in students’ physical activity while staying at home during the Covid 19 pandemic, one of which is psychological factors such as motivation and social support.

It is necessary to socialize the importance of doing physical activity while at home to maintain physical fitness, health, and body immunity. Supervision of students, especially women, needs to be done by Physical Education teachers and parents to monitor students’ physical activity while at home during the Covid 19 pandemic. Research on socialization interventions on the importance of physical activity and its benefits needs to understand and motivate to do so—physical activity at home during the covid pandemic 19.

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