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Physical Activity among Secondary School Students in the Malaysian Federal Land Development Authority (FELDA) Settlements

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Abstract:

Participating in effective physical activities can substantially enhance one's health and wellbeing. The goal of this study is to categorise the Federal Land Development Authority (FELDA) school students' levels of physical activities according to gender. The study population consists of FELDA secondary school students aged 15 to 17 years old. With a sample size of 4,164 individuals, this study used stratified random sampling and a cross-sectional study methodology. Of the sample, 2,034 participants were men and 2,140 participants were women. The instrument employed for this particular study is the Global Physical Activity Questionnaire (GPAQ) Version II. The findings revealed that 2,263 of the students are third generation FELDA settlers. Overall, the students' physical activities involvement is as follows: mean = 1,429.46 kcal/week; mean = 247.48 minutes/week and is classified as active, and the students are active in Vigorous-intensity Physical Activity (VPA) patterns (mean = 109.97 minutes / week). According to the study, male students engaged in physical activities, dominating VPA patterns and were physically active (mean = 1,821.65 kcal/week; mean = 304.93 minutes/week). Female students were more likely to participate in physical exercises, and their engagement was regarded as being active (mean = 1,058.53 kcal/week; mean = 192.98 minutes/week; mean=84.00 minutes/week). Participating in regular, vigorous physical activities can lower Malaysia's rates of obesity and Non-Communicable Diseases (NCDs). This study can aid KPM, JPN, PPD, and schools in realising how crucial it is to motivate kids to engage in physical activities, especially in school.

Keywords: Physical activity, rural settlements, school students, Malaysia

Introduction

Health is one of the key elements in the development of a healthy society is physical activities. According to Ainsworth et al. (2000), physical activity is any movement of the body made by the skeletal muscles that burns calories, with example include walking, cycling, playing, and carrying out housework. Physical activity also refers to any movements made by the body to gain or maintain body weight (Warburton et al., 2007), and a person's action or any act done (Plowman & Meredith. According to World Health Organization (2018, 2012), physical activity is classified into three categories, namely the Low-intensity Physical Activity (LPA), the Moderate-intensity Physical Activity (MPA), and the Vigorous-intensity Physical Activity (VPA).

The National Health and Morbidity Survey (NHMS) in 2019 reported that the sedentary lifestyle of Malaysians, with 27% of the rural population not actively engaged in any physical activities, has been one of the risk factors for Non-Communicable Diseases (NCDs). Moreover, results from study conducted by Burke et. al. (2001) discovered that a number of characteristics, including physical activities, smoking status, obesity, and cardiovascular status, such as diabetes mellitus, cholesterol, and blood pressure level, need to be improved because they are directly associated to poor health in adults. While inactivity raises the chance of developing chronic diseases, physical activities improve physical fitness and has a favourable impact on health status. Inactivity is found to be the main cause of impairments, illnesses, and premature deaths and raises the risk of cardiovascular diseases and stroke by 50% (Norum, 2005), whereas for people of all ages, engaging in physical activities like working out is essential to their health and quality of life (Chen & Lee, 2013). Furthermore, Gill et al. (2013) discovered a strong link between physical exercise and quality of life, in which physical activities and quality of life is mutually beneficial, with improved quality of life serving as one of the primary drivers of physical exercise.

Physical activity is defined as any skeletal muscular movement that results in the expenditure of energy (Powell et al., 2018; Caspersen, Powell & Christenson, 1985). It comprises work-related tasks (patrol, heavy lifting), household maintenance, or recreational activities (brisk walking, gardening), which are frequently employed as proxies for physical fitness in epidemiological studies. Physical activities are associated with various health benefits and reduce the risk of diseases. Physical activities have been linked to a variety of health advantages, including a lower risk of diseases. As a result, neither gender group fully understood the advantages of engaging in Moderate-intensity Physical Activity (MPA). Thus, this study was carried out to determine the gender differences in the amount of physical activities participation among the Malaysian Federal Land Development Authority (FELDA) settlements' students. Male and female participation in physical activities generally differs for a variety of reasons. This study may serve as an indirect guide for the Ministry of Education (MOE)), FELDA settlement schools, and Non-Governmental Organisations (NGO) regarding the significance of engaging in physical activities for school students in rural areas.

Material & Methods

The Global Physical Activity Questionnaire (GPAQ) version 2, which was created by de Courten (2000) and has undergone a forward-backward translation process by Soo, Wan Abdul Manan and Wan Suriati (2015), was employed in this investigation as a cross-sectional study tool. The GPAQ is designed to examine the patterns of physical activities in relation to three main domains: work time, transportation time, and leisure time. The sample for this study included 4,164 male and female students from a total of 101 secondary schools within FELDA settlement. The 10% sample from the study population is the foundation for determining this study's sample size (Alreck & Settle, 1995; Gay & Diehl, 1992). If a person engages in Vigorous-intensity Physical Activity (VPA) for at least 75 minutes per week, and Moderate-intensity Physical Activity (MPA) for at least 150 minutes per week, they are considered to be physically active. Moreover, individuals are classified as actively engaging in Total Physical Activity (TPA) if they consume more than 900 kilocalories per week

The researcher gave students questionnaires with four sections to gather information on the students' physical activities. The demographic background is covered in the first segment (13 items), general health is covered in the second section (9 items), physical activities are covered in the third section (16 items), and the evaluation of seven (7) health levels is covered in the fourth section based on a physical endurance test. The questionnaire was well explained so that students understood the objectives, and they had thirty minutes to complete all the questions with the researcher's help. Data on physical activity participation were examined using descriptive statistics during the data analysis procedure. The term "descriptive statistics" refers to statistics that are used to characterise the properties of study variables. The information that is highlighted includes details on mean value, frequency, standard deviation, median, mode, and percentage (%). The study's demographic background distribution and the physical activity patterns reported by the study sample were presented in this regard using descriptive analysis.

Results

According to the study's findings, 2140 respondents (51.4% of the total) were female students, while 2024 respondents (48.6%) were male students and had a 16.1-year median age. The majority of respondents (95.4%) and third generation FELDA settlers (54.3%) are Muslims. The demographic results of the research respondents are shown in Table 1.

Table 1. The demographic of the study respondents.

Category		Frequency (N)	Percentage (%)
Gender	Male	2024	48.6
	Female	2140	51.4
Age (yrs)	15	29	0.7
	16	3862	92.7
	17	273	6.6
Religion	Muslim	3973	95.4
	Buddha	47	1.1
	Hindu	35	0.8
	Others	109	2.6
Generation	Second	706	17.0
	Third	2263	54.3
	Staff	244	5.9
	Others	951	22.8

On the other hand, Table 2 shows the involvement of physical activities. The average amount of time students spent participating in TPA activities each week is 247.40 minutes, and they burn an average of 1,429.46 calories every week. The results also indicated that students spend more time in the MPA pattern than the VPA pattern (mean = 124.48 minutes per week versus mean = 109.97 minutes per week), but the average time still indicated that the students are still classified as being inactive when compared to the average time spent engaging in VPA activities that are classified as being active. Based on a study conducted by Kamis et al. (2018), it revealed that on average, students in FELDA schools engage in fewer than 4 hours of sedentary activity per day. According to the results of the sedentary activities, students spend more than six hours a day (mean = 6.20 hours/day), or 25.8% of the time they wake up or are awake. The results showed that students spent 108.94 minutes per week on schoolwork and 169.48 minutes per week on recreational activities. Table 2 shows the involvement of physical activities. Lack of participation in physical activities is regarded as one of the primary causes of health problems Solhi et. al., [9] Additionally, there is broad agreement on the advantages of physical activities for health as well as illness [10]. Daily physical activities are essential to reduce the risk of diseases like cardiovascular disease (CVD), diabetes mellitus, cancer, and obesity by controlling body weight, as well as respiratory issues and psychological disorders (Wang et al., 2009; van Wier et al., 2006).

Table 2. The involvement of physical activities.

Type of Physical Activity	Mean	Interpretation
MPA	124.48 m/w	Not Active
VPA	109.97 m/w	Active
TPA	247.40 m/w	Active
	1,429.46 kcal/w	
Sedentary	6.20 h/d	

According to research on the participation of male students in physical activities, students are categorised as active while engaging in TPA activities; mean = 304.93 minutes/week; mean = 1,821.65 kcal/week. Men spent more time than women on VPA activities (mean = 137.43 minutes/week vs. mean = 137.23 minutes/week), which are classified as active activities as opposed to MPA activities, which are classified as inactive. The results showed that the mean number of sedentary hours per day was 6.18. The distribution of physical activities for male students is shown in Table 3.

Table 3. The distribution for physical activity of male students.

Type of Physical Activity	Mean	Interpretation
MPA	137.23 m/w	Not Active
VPA	137.43 m/w	Active
TPA	304.93 m/w	Active
	1,821.65 kcal/w	
Sedentary	6.18 h/d	

The results of the study for female students revealed that TPA activity is in the active group with mean = 192.98 minutes/week; mean = 1,058.52 kcal/week. While they spent more time engaging in MPA activities than VPA activities (mean = 112.41 minutes/week versus mean = 84.00 minutes/week), the time spent was insufficient and they were classified as inactive for the MPA activity pattern and active for the VPA activity pattern. The average amount of time students spent sitting down per day is 6.23 hours. The distribution of female students' participation in physical exercise is shown in Table 4

Table 4. The distribution for physical activity of female students.

Type of Physical Activity	Mean	Interpretation
MPA	112.41 m/w	Not Active
VPA	84.00 m/w	Active
TPA	192.98 m/w	Active
Sedentary	1,058.52 kcal/w 6.23 h/d	

All in all, time constraints, busy schedule, lack of support from parents and friends, and ignorance of the benefits of physical activities for health are some of the reasons why students fail to engage in physical activities (Ainsworth et al., 2000; Ainsworth, Jacobs Jr. & Leon, 1993). Among female students, in particular, lack of confidence and insecurities prevent them from engaging in physical activities. Additionally, they experience discomfort while engaging in physical exercise, especially if friends fail to support them since they are unaware of the advantages of physical activities.

Discussion

Obesity is an alarming global trend that has negative effects on all countries. According to the WHO's 2018 report, 340 million children and teenagers between the ages of 5 and 19 and 39% of the global population are classified as overweight or obese. In Malaysia, the general rate of obesity is over 50% overall, with a total of 11.7% of 18 to 19-year-olds being obese. According to the World Health Organization and Institute for Public Health, children in Malaysia are now more inclined than ever to suffer from coronary heart disease (CHD) and Non-Communicable Diseases (NCDs). In 2016, there were 650 million (13%) obese individuals and approximately 1.9 billion (39%) overweight adults in the world.

Promoting and encouraging physical exercises among young people, adults, seniors, and older people is crucial for overall health. This is typically due to the rise in the number of obese people in Malaysia and the rest of the world. The statistics showing a decline in students participating in physical activities in higher education should also be taken into consideration as they are at a crucial stage to determine an individual's lifestyle (McArthur & Raedeke, 2009; Keating et al., 2005; Gyurcsik, Bray & Brittain, 2004). Some people believe that exercising simply helps them become more physically fit, however research shows that exercising is also good for your overall health. In accordance with the findings of a study by Van Uffelen, Khan and Burton (2017), respondents did not complete the required 150 minutes of MPA activities as recommended by the PA. Losing weight, feeling well, and preventing health issues are the three factors that drive PA participation. In relation to that, girls participate in PA primarily to enhance their looks, make new friends, spend time with others, along with lose weight.

In line with the results of this study, a survey involving students of five

schools in China showed the Moderate to Vigorous Physical activities (MVPA) between male and female students differed. The MVPA of female students 57.71 ± 25.18 min/day) were lower in comparison to the males (63.47 ± 21.03 min/day) corroborating to male students' less sedentary results. Similarly, another study observed that sedentary time differs dramatically between boys and girls, with boys being more active than girls. The findings of this study are comparable to the results of a previous study which stated that female students in Malaysia were 1.6 times more likely than male students to be physically inactive. A systematic review by Shao Shao and Zhou (2023) shows that; 1) adolescent males are more active in PA than females which is females are more involved in moderate-to-vigorous physical activity (MVPA, 2) PA decreases with age, 3) intelligent adolescents are more active in PA, 4) support from parents, teachers, friends, and environment are supportive indicators of involvement in PA, 5) teenagers who do less PA are more likely to have BMI problems, 6) adolescents who reported higher levels of self-efficacy and satisfaction with school sports tended to have stronger PA habits, 7) sedentary behaviour, smoking, drinking, prolonged screen time, negative emotions, and excessive use of media technology were correlated with reduced habitual PA in adolescents.

Conclusion

In a nutshell, people must adhere to the newly established pyramid system, which has four (4) levels: 1) limit, 2) 2–3 times per week, 3) 5–6 times per week, and 4) every day, if they aim to improve their health. At the limit level, MOH32 recommends that individuals should limit inactive physical activities and limit sedentary activities. For level 2, which is 2 to 3 times a week, MOH recommends that individuals should increase flexibility, strength, and muscle endurance activities such as stretching, push-ups, pressure, and weights. For level 3 which is 5 to 6 times a week, MOH recommends that individuals should do Moderate-intensity Physical Activity (MPA) for at least 30 minutes every day for 5 to 6 times a week such as brisk walking, cycling, aerobic exercise, and gardening. Level 4, which is every day, MOH recommends that individuals should continue to be active in physical activities such as climbing stairs, gardening, and walking to the store. While 45 to 60 minutes of physical activities per day of MPA activities can lessen the issue of overweight or obesity, and 60 to 90 minutes of activity per day of MPA activities can prevent and balance weight gain, 30 minutes of physical activities per day of MPA activities can reduce the risk of chronic diseases like coronary heart and diabetes.

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