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ASSESSING THE LEVEL OF PHYSICAL ACTIVITY AMONG SPORTS SCIENCE UNIVERSITY STUDENTS DURING COVID-19 OUTBREAK

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Abstract: *Physical activity (PA) is associated with numerous health advantages for the heart, body, and mind which lead to prevention of hypokinetic disease. Thus, a good PA level is important and crucial for everyone. However, the occurrence of coronavirus disease (COVID-19) had severely impaired university student's PA level, but there is a scanty study on assessing PA level among sports science university students. Therefore, the purpose of the study is to assess the level of PA among Faculty of Sports Science and Recreation (FSR), UiTM Perlis students during COVID-19 outbreak. A total of 142 males and 166 females from FSR, UiTM Perlis were asked to answer the International Physical Activity Questionnaire (IPAQ) created using Google Form. IPAQ estimate the total PA in MET-min/week and time-spent sitting. The mean for PA level of males were 7118.83 ± 5284.864 while females were 6874.73 ± 5357.136. Although the mean for males is slightly higher than females, but there is no significant*

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difference between them (p = 0.689). This probably because both were in the same category which is low PA level. The reason why they achieved the same PA level, probably due to their same background knowledge and exposure to PA during study since they are in Faculty of Sports Science and Recreation. However, they should start finding a practical method to stay active especially during COVID-19 to improve their PA.

Keywords: *physical activity level, university students, coronavirus disease.*

Introduction

Physical activity (PA) is defined as any physical action requiring energy expenditure that is generated by skeletal muscles (Jette et al., 1990)–(WHO, 2020). PA covers movements done during leisure time, when traveling to and from destinations, and while doing work duties also both moderate and a high-intensity level PA is beneficial to health (WHO, 2020). PA improves glucose management and lowers cardiovascular disease risk (CVD) and death in people with type 2 diabetes (T2D) (Hamasaki, 2016). Adults (18-64 years old) should at least do moderate-intensity aerobic PA (150-300 minutes) while vigorous-intensity aerobic PA (75-150 minutes) or a combination of moderate- and vigorous-intensity PA (MVPA) (WHO, 2020). Regular PA help prevent non-communicable disease (NCD) also hypertension, sustain healthy body weight, and improve mental health(WHO, 2020). However, PA levels for all age groups decreased due to coronavirus (COVID-19) (Shahidi et al., 2020). COVID-19 is the most recently identified infectious illness that can be transmitted by an infected individual's saliva droplets or through coughing or sneezing (WHO, 2022). COVID-19 was discovered when a strange origin of pneumonia occurred in Wuhan, Hubei province, China (Mackenzie & Smith, 2020). COVID-19 may result in systemic severe failure in specific individuals (Woods et al., 2020). Unfortunately, there is no effective therapy for this condition; only vaccines such as those manufactured like Pfizer, Sinovac, and AstraZeneca are available (Woods et al., 2020). Thus, on 30th January 2020, World Health Organization (WHO) declared this situation as a worldwide health crisis (Jahangir et al., 2020). COVID-19 induced social withdrawal and self-isolation among the majority of the world's population, resulting in a decline in PA is been shown to effectively reduce or eliminate severe clinical symptoms associated with COVID-19 (Dwyer et al., 2020). To halt COVID-19's spread, mobility limitations are enforced, affecting necessary physical exercise for the health and well-being of an individual or group of individuals (Ong et al., 2021). Malaysia had documented over 5300 positive cases as of 20th April 2020, resulting in 89 deaths (Azlan et al., 2020). On 18th March 2020, Malaysia's Prime Minister implemented a Movement Control Order (MCO) in an effort to mitigate community spread and overburden the country's health system (Azlan et al., 2020). These restrictions have compelled people to stay at home, interfering with their daily routines, including frequent PA. Numerous international organizations and health ministries in numerous countries have highlighted how remaining at home can increase time spent in sedentary activities and reduce time spent engaging in regular PA (Barwais, 2020). Therefore, COVID-19 has damaged people's economies, livelihoods, and physical and emotional well-being globally (Wang et al., 2021). Increasing these activity levels was incredibly difficult when people's daily movements were restricted (Wanda et al., 2020). Total PA levels and walking durations were reduced, and led to increment of sitting time (Ács et al., 2020). PA levels have been observed to have decreased during the pandemic, disrupting the regular daily routine (Diniz et al., 2020). There are quite few studies related with the level of PA during COVID-19 primarily studies from abroad, e.g., a study conducted in Canada targeting 158 university students University of Saskatchewan (Bertrand et al., 2019) and University of Regina, in California which used 32

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university students at Autonomous University of Baja California (Meza & López, 2021), and in Hungary involved 827 university students from University of Pécs (Ács et al., 2020). The findings for all 3 stated studies showed a significant decrease in PA level during COVID-19. Another study conducted in Romania involved 333 university students at Alexandru Ioan Cuza University (S -P et al., 2015), and in Poland involved 300 Medical students at Silesia University (Dabrowska-Galas et al., 2013). Most of the previous studies involved PA level among university students, but it will be interesting for a study on PA level among sports science university students during COVID-19. Therefore, the purpose of this study was to assess the level of PA among Faculty of Sports Science and Recreation (FSR) students during COVID-19 outbreak.

Methodology

Respondents

The total respondents of 308 students from FSR, UiTM Perlis involved in this study. The questionnaire was distributed to 142 males and 166 females by using an online platform that was compatible with any device with an internet connection.

Procedures

The questionnaire was created using Google form and can be shared by using a link generated. The link was disseminated through the WhatsApp application to institutional groups or targeted individuals. The consent form and terms for the questionnaire were clearly stated in the Google form provided. This survey was conducted online to follow Standard Operating Procedure (SOP) due to the COVID-19 outbreak. The time estimated to complete the questionnaire was between 5 to 10 minutes and all completed responses' confidentiality was assured. All research procedures concerning human subjects were accepted by the UiTM Research Ethic Committee.

Instrumentation

Research instrument for this study was divided into 2 sections, which is section A and section B. Section A was demographic data that collected gender, height, and weight. Section B is the International Physical Activity Questionnaire (IPAQ). The questionnaire was adopted from Craig and colleagues (2003) and was revised on 2015 by The IPAQ group (Craig et al., 2003), (The et al., 2015). IPAQ is a validated instrument in several researches and adapted in 12 countries (Rajappan et al., 2015). Short format of IPAQ used in this study consist of 7 items, 2 items for vigorous PA, 2 items for moderate PA, 2 items for walking and 1 item for sitting. The objective of the questionnaires is to provide common instruments that can be used to assess individual PA level. The raw data collected were calculated using formulas; metabolic equivalent of task (MET) x minutes per week x days per week. 1 MET is equal to a resting energy expenditure (REE) assuming consumption of oxygen, 3.5 ml/min/kg weight (Rajappan et al., 2015).The MET for walking (3.3 MET), moderate PA (4.0 MET), and vigorous PA (8.0 MET). The sum can be calculated using formula walking + moderate PA + vigorous PA. PA can be classified in three levels which are low, moderate, and high. Respondents had to meet any one of the criteria to be categorized either as high, moderate, or low. The criteria for high PA level are (a) vigorous intensity activity for at least three days, achieving minimum total PA for at least 1500 or (b) any combination of walking, moderate or vigorous intensity activity for seven or more days, achieving at least 3000 MET-minutes/week as minimum total PA. The criteria for moderate PA level are (a) vigorous intensity activity of three or more days for at least 20 minutes per day or (b) moderate intensity activity of five or more days for at least 30 minutes per day or (c) any combination of walking, moderate intensity, or vigorous intensity

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activity of five or more days for at least 600 MET-minutes/week. Respondents considered as low PA if they did not meet with any of the criteria for high PA and moderate PA.

Statistical analyses

All the data calculated by using Microsoft Excel 2020 and analysed Statistical Package for the Social Sciences (IBM SPSS Statistics) version 26.0. All demographic data was presented in mean ± standard deviation (SD). The independent sample t-test was used to analyse the different in PA (METs) between gender and the PA level of gender was presented in frequency value.

Result

Table 1: The descriptive statistic for all variables. (N=308)

Variables	N = 308			
	Male (N = 142)		Female (N = 166)	
	Mean	SD	Mean	SD
Height (cm)	170.46	5.940	161.23	7.583
Weight (kg)	63.34	8.565	57.22	10.167
Body Mass Index (kg/m2)	21.705	2.6914	22.099	3.9965
Physical Activity	7380.51	5733.141	6650.89	4925.334

Table above on the demographic data of all 308 respondents (N=308). The mean SD for height (cm), male 170.46 ± 5.940 while female 161.23 ± 7.583. The mean SD for weight (kg), male 63.34 ± 8.565 while female 57.22 ± 10.167. The mean SD for body mass index (BMI), male 21.705 ± 2.6914 while female 22.099 ± 3.9965. The mean SD for physical activity level, male 7380.51 ± 5733.141 while female 6650.89 ± 4925.334.

The MET for 142 males were 7118.83 while for 166 females were 6874.73. The result for independent sample t-test showed that there is no significant difference, p value (0.689) > 0.05.

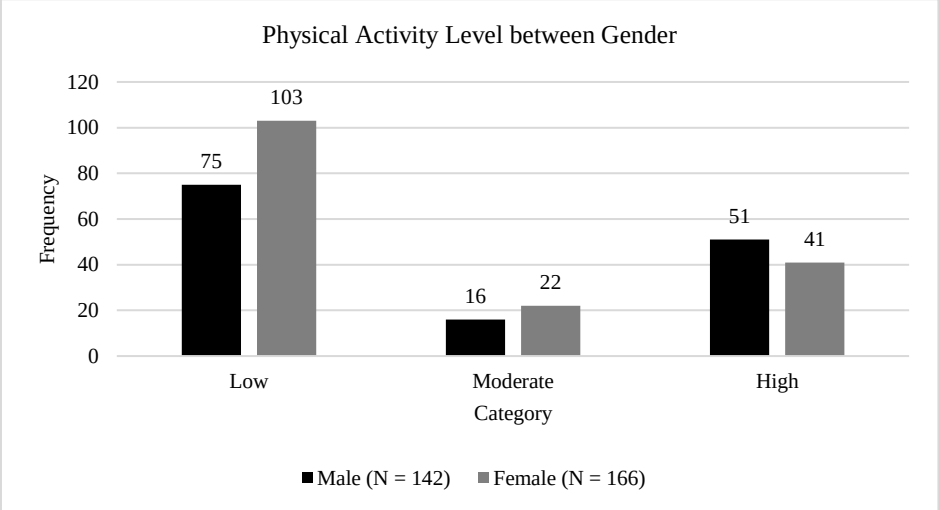

Figure 1: The physical activity between gender bar chart of current study. (N=308)

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Figure 1 showed the bar chart for frequency of PA between gender of all 308 respondents (N=308). The total for males were 142 while females were 166. For low PA, males were 75 while females were 103. For moderate PA, males were 16 while females were 22. For high PA, males were 51 while females were 41.

Discussion

Based on the independent sample t-test, there is no significant difference between male and female, p-value > 0.05. Figure 2 showed the PA level between gender. Both gender had sport education knowledge from the same university. Configuring the key principles of sport education within fitness unit efficient to provide students with opportunity to improve fitness skill and HRF knowledge while attaining recommended levels of MVPA (Ward et al., 2017). Based on the results, most of the respondents in this population had low PA level. The result was unexpected since the targeted population was sports science university students. Sports science students was well-known to be active since physical activity was one of their study fields and most of them was a current and former athlete. But bear in mind that the current study was conducted during coronavirus disease outbreak which might influence the PA level. A previous found that which young badminton athletes presented increased sedentary time, and decreased total physical activity, time in MVPA, and time in vigorous activities during the COVID-19 pandemic compared to the pre-COVID period (da et al., 2021). Moreover, this current study was conducted during COVID-19 and through online platform which might be one of the reasons that led to this result. Even though both genders have same knowledge sport education background at the same university, they might have issues to apply the knowledge gained during study in their daily life during COVID-19 due to MCO and SOP being implemented. On 18th March 2020, Malaysia's Prime Minister implemented a mobility control order (MCO) in an effort to mitigate community spread and overload the country's health system (Azlan et al., 2020). Some respondents might not have a proper equipment and knowledge or spaces to conduct the exercise or workout. A previous study showed that many activities are limited or prohibited during MCO, and it is exceedingly difficult to build in these levels of activity when people's daily movements are constrained (Wanda et al., 2020).

The reason why they did not achieve a good PA level probably because some of them tend to involve in light daily activities or low PA because of COVID-19 outbreak and the total active minutes was not sufficient to eventually reach moderate PA. A previous study showed that the majority of individuals accrue "active minutes" through a variety of different activities such as housekeeping, walking the dog, walking or cycling to and from work, and walking between tube/train stations. All of these activities are a part of people's everyday lives and add to their total number of minutes of PA (Wanda et al., 2020). Another thought that may impaired the students PA level probably due to the COVID-19 outbreak lifestyle in university. Walking, moderate, vigorous, and total physical activity levels have been reduced during the COVID-19 pandemic confinements in university students from different countries (LÃ³pez-Valenciano et al., 2021). PA levels have been observed to have decreased during the pandemic, disrupting the regular daily routine (Diniz et al., 2020). COVID-19 required people to stay at home, which led to exercise issues. Diminished volumes of habitual physical activity and increased sedentary levels have been observed as a result of COVID-19 home-confinement (Bentlage et al., 2020).

Conclusion

From the finding, it can be concluded that there was no significance difference in PA (Mets) between gender among FSR, UiTM Perlis during COVID-19 outbreak. Overall, the FSR, UiTM Perlis students was considered to have low PA level during COVID-19 outbreak. Thus, they

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should start finding a practical method to stay active especially during COVID-19 to improve their PA. Practical methods for staying active at home, including cardiovascular exercise on a bike or rowing ergometer, bodyweight training, aerobic dance, and dynamic video gaming which can help mitigate the COVID-19 protective lifestyle requirements' adverse physical and mental effects. This opinion gave essential information on home-based PA for sedentary adults of all ages, including children and adolescents, that can be used during the current pandemic or other infectious disease outbreaks (Hammami et al., 2019). Therefore, FSR, UiTM Perlis students should be aware about PA level and try to do better for post-COVID-19 situation.

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