

Original Article

PHYSICAL ACTIVITY OF UniSHAMS STUDENTS: A CROSS-SECTIONAL STUDY

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ABSTRACT

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Physical inactivity is the fourth leading cause of death worldwide. Nowadays, numerous studies proved that decline in physical activity and increase obesity and other diseases risk among people. Physical activity decline was evident during young adults' transition into early adulthood with the steepest decline occurring at the time of entering a university. Thus, the study aims to determine the prevalence and relationship of inadequate and adequate physical activity, overweight and obesity among UniSHAMS students. This research was a cross-sectional study which started from 10th March 2019 until 21st April 2019. A stratified random sampling method was used in this study. A total of 316 samples was divided into 7 kulliyyahs. The data was collected and analysed by using SPSS. The relationship of the parameters in the study was determined by using Chi-square test. The research demonstrated that the prevalence of inadequate physical activity performed by UniSHAMS students is 54.6% (n=172) while those who practise adequate physical activity are 45.4% (n=143) only. Meanwhile, the prevalence of students with overweight BMI among UniSHAMS students is 61 students (19.4%) and obese BMI is 39 students (12.4%). In conclusion, the percentage for both overweight and obese students are low compared to normal BMI which is 154 students (48.9%). This research also showed that there is no relationship between overweight and obesity among students with inadequate activity.

INTRODUCTION

According to the Ministry of Health (MOH), physical activity can be defined as any bodily movement produced by skeletal muscle that results in energy expenditure. Meanwhile, exercise is referring to any planned, structured and repetitive bodily movements that are performed to improve physical illness. Sitting, standing and running are classified as physical activities. While running and jogging are clear examples of exercise. In fact, regular physical activity has significant benefits for health. At all ages, the benefits of being physically active outweigh the potential harm. On the contrary, insufficient physical activity has a negative effect on mental health and quality of life. It is also can be a leading risk factor for non-communicable diseases.

Regular physical activity can buffer the risk associated with being overweight or obese. Obesity is a disorder in which excess body fat is accumulated in the body

and can result in serious physical, psychological, health, behavioral, social and economic consequences [1]. Numerous reports have shown that various non-communicable diseases (NCDs) such as cardiovascular disease, type 2 diabetes mellitus, hypertension, dyslipidemia and certain types of cancer were related to overweight or obesity. Overweight and obesity are growing public health problems that have become global epidemics. Thus, individuals who engage in regular physical activity tend to be healthier than their physically inactive peers, consequently reducing the prevalence NCDs [2].

A research study regarding the physical activity of university students was published in January 2019 by the University of Maribor, Slovenia [3]. The purpose of the study was to determine the physical activity performed by students, its frequency and intensity. The sample consisted of 297 undergraduate students from 20 to 22 years of age

from the University of Maribor, Slovenia. The type and frequency of physical activity in which they engaged were measured using IPAQ which shows most students reported physically active in the afternoon [3].

According to the WHO's guidelines, 79.8% of students were insufficiently physically active. The results showed that males performed better than females in nearly all of the physical fitness tests. Based on this research's findings, the prevalence of insufficient physical activity among university students in overseas are still increased. A research was conducted by Mesquita *et al.*, 2018 about health-related physical fitness among undergraduate students in physical education' in one university in Brazil which involved 110 women and 115 men showed that approximately 68% of college students are considered inactive, and women presented a significantly higher prevalence of physical inactivity when compared to men [4].

Besides, a study was carried out in Universiti Sains Malaysia, Kota Bharu among 80 active men who exercised a minimum of 30 min per day for at least 3 times per week (exercise group), and 80 inactive men (sedentary group) and their weight. The result revealed a higher prevalence of overweight and obesity amongst sedentary men (47.5%) compared with those who exercised regularly (29.9%), while athletes had the lowest prevalence (21.7%) [5].

Moreover, a study was done by Universiti Teknologi MARA (UiTM) to determine the prevalence of physical activity among university students in UiTM [6]. The findings showed that about 23% of students aged 18 and above were not active enough in physical activity as the lifestyle of university student adheres to unhealthy dietary pattern and physical inactivity. The result oppositely differs when comparing to research conducted in Brazil.

Based on the aforementioned studies, there is no research conducts on physical activity among students in Kedah, Malaysia. Recently, the establishment of an exercise clinic is an initiative introduced by Universiti Islam Sultan Abdul Halim Mu'adzam Shah (UniSHAMS), MS New Symphony Clinical Exercise Sdn. Bhd and the Ministry of Health to create awareness on healthy lifestyle and increase physical activity among Malaysians especially Baling residents. This clinic indirectly encourages UniSHAMS students to increase physical activity in their daily life. Thus, the study was conducted to investigate physical activity among UniSHAMS students. In this study, the prevalence of inadequate, adequate physical activity, overweight and obesity among UniSHAMS students was reported. The relationship between overweight and obesity with physical activity among UniSHAMS students was also determined.

## METHOD

This study was a cross-sectional study, started from 10<sup>th</sup> March 2019 until 21<sup>st</sup> April 2019. A survey was conducted to a random sample of estimated 3987 UniSHAMS students. The sample size was estimated by using the following formula:

$$n = \frac{Z^2 p (1-p)}{d^2}$$

$$nspz = \frac{n}{1 + \frac{n}{spz}}$$

Based on NHMS II study, about 65.5% of 32,936 adults surveyed were doing regular physical activity or adequate exercise. Thus, its inadequate physical activity or exercise is 34.5%.

$$n = \frac{(1.96)^2 (0.345) (1-0.345)}{0.05^2} = 347$$

$$nspz = \frac{347}{1 + \frac{347}{3987}} = 316$$

A stratified random sampling method was used in this study. All of 316 samples were divided into seven kulliyahs. Each kulliyah consisted of 45 to 46 samples. The questionnaire was adopted from the Malaysian Adult Nutrition Survey: Physical Activity of Adults Aged 18 to 59 years old (MOH, 2003). Then, the data was collected and analysed by using Statistical Package for the Social Sciences (SPSS) Statistics version 21. Chi-square test was used to determine the relationship of the parameters in the study.

## RESULTS

Cross-tabulation in the SPSS was applied to analyse the data. Relationship between BMI and physical activity performed by students for the past two weeks was compared. The respondents were given a questionnaire that contains questions regarding type and period of exercise they performed. Based on Figure 1, the number of underweight students who performed inadequate physical activity was the highest (34 students) as compared to overweight (29 students) and obese students (22 students). The number of overweight students who performed adequate physical activity was the highest (32 students) followed by underweight (28 students) and obese students (17 students). Statistically, there was no significant difference ( $p > 0.05$ ) between the

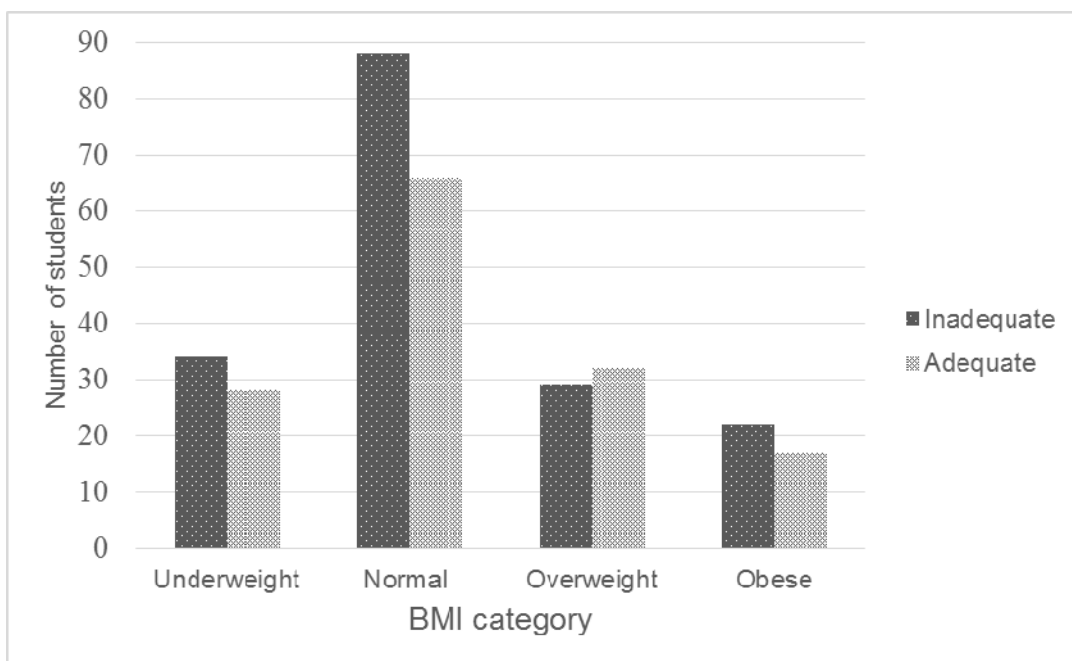


Figure 1: The number of students who performed inadequate and adequate physical activity in different BMI category.

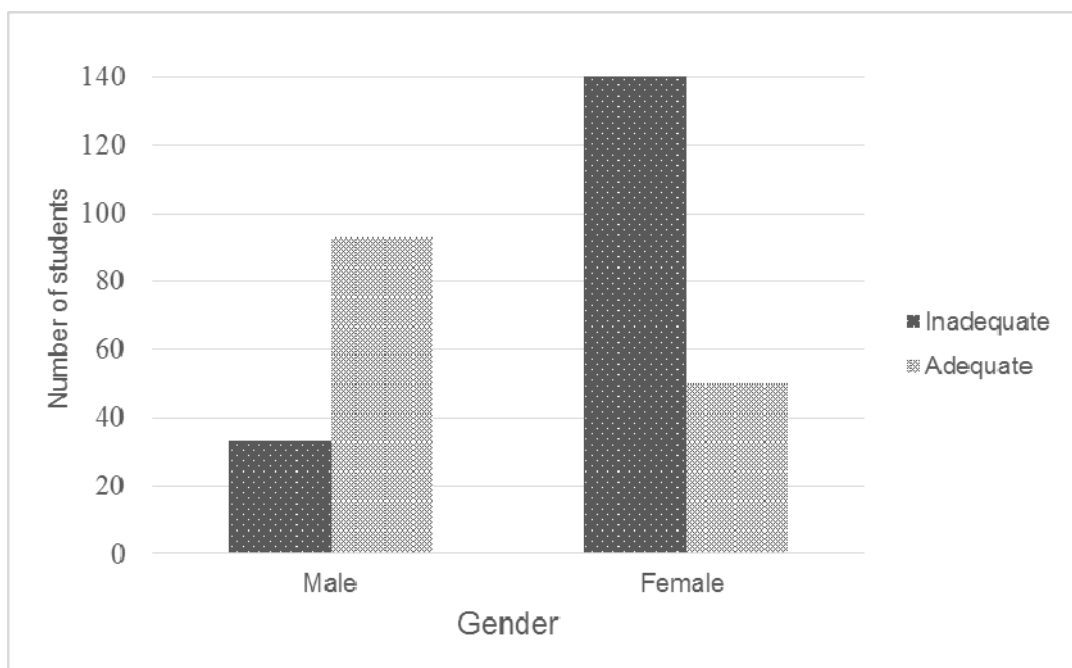


Figure 2: The number of male and female students who performed inadequate and adequate physical activity.

number of students who performed inadequate and adequate physical activity in different BMI categories.

Besides, the study demonstrated that the number of male students who performed adequate physical (93 students) was higher as compared to female students (50 students). The number of female students (140 students) who performed inadequate physical activity was higher than the number of male students (33 students) (Figure 2). The relationship

between gender and physical activity showed a significant difference ( $p < 0.05$ ). Thus, the study indicated that male students are physically active than female students.

The research showed the number of obese students was higher among male (21 students) as compared to female (18 students). Nevertheless, the number of female students in underweight and overweight categories was higher (40 underweight, 34 underweight) than the number of male students (21 under-

weight, 27 overweight) (Figure 3). Besides, the number of students who stayed off-campus performed inadequate (90 students) and adequate physical activity (95 students) was higher as compared to the number of students who stayed on campus (inadequate: 83 students; adequate: 48 students) (Figure 4). Statistical analysis showed the relationship between residency and physical activity was significantly different ( $p < 0.05$ ).

On the other hands, the number of students in Kulliyah of Muamalat (28 students) and Foundation of Studies (27 students) performed inadequate physical activity is higher than the number of

students from other kulliyahs. Meanwhile, the number of students in Kulliyah of Medicine (24 students) and Usuluddin (24 students) who performed adequate physical activity than the number of students from other kulliyahs (Figure 5). Statistically, the relationship between kulliyah and physical activity was not significantly different ( $p < 0.05$ ).

## DISCUSSIONS

From the survey, 54.6% out of 315 respondents performed inadequate physical activity. Therefore,

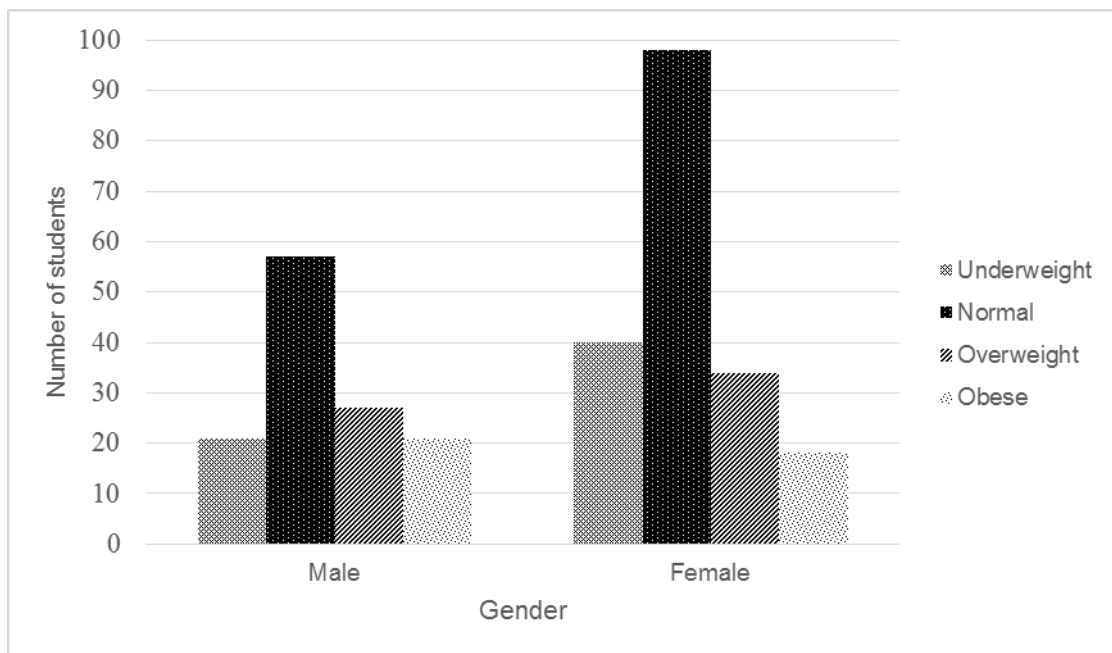


Figure 3: The number of male and female students in different BMI categories.

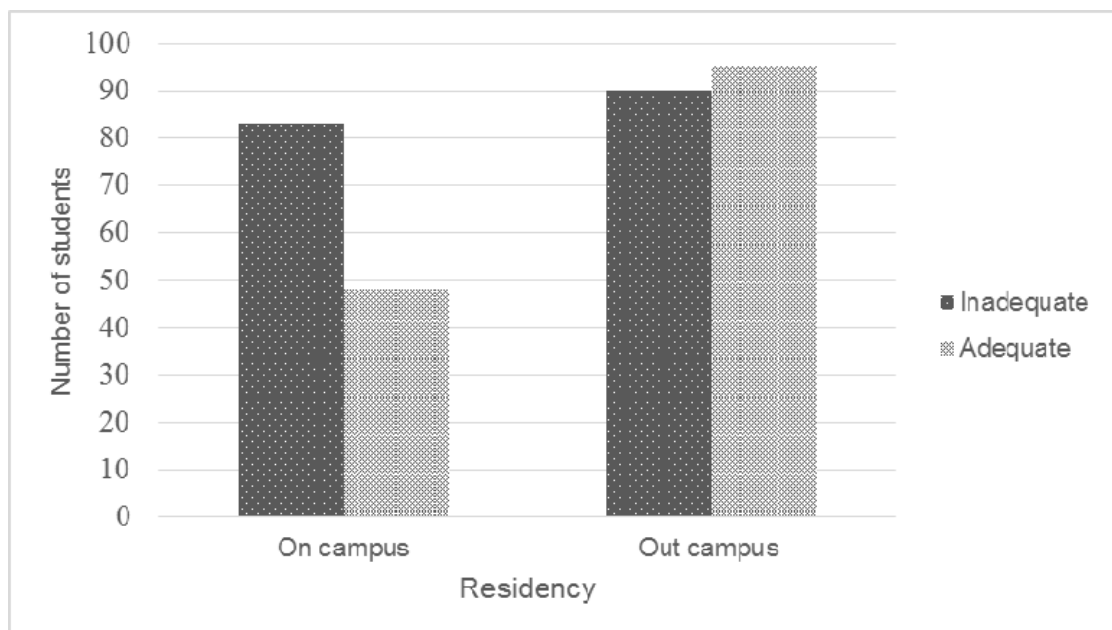


Figure 4: The number of students stayed on and out campus who performed physical activity.

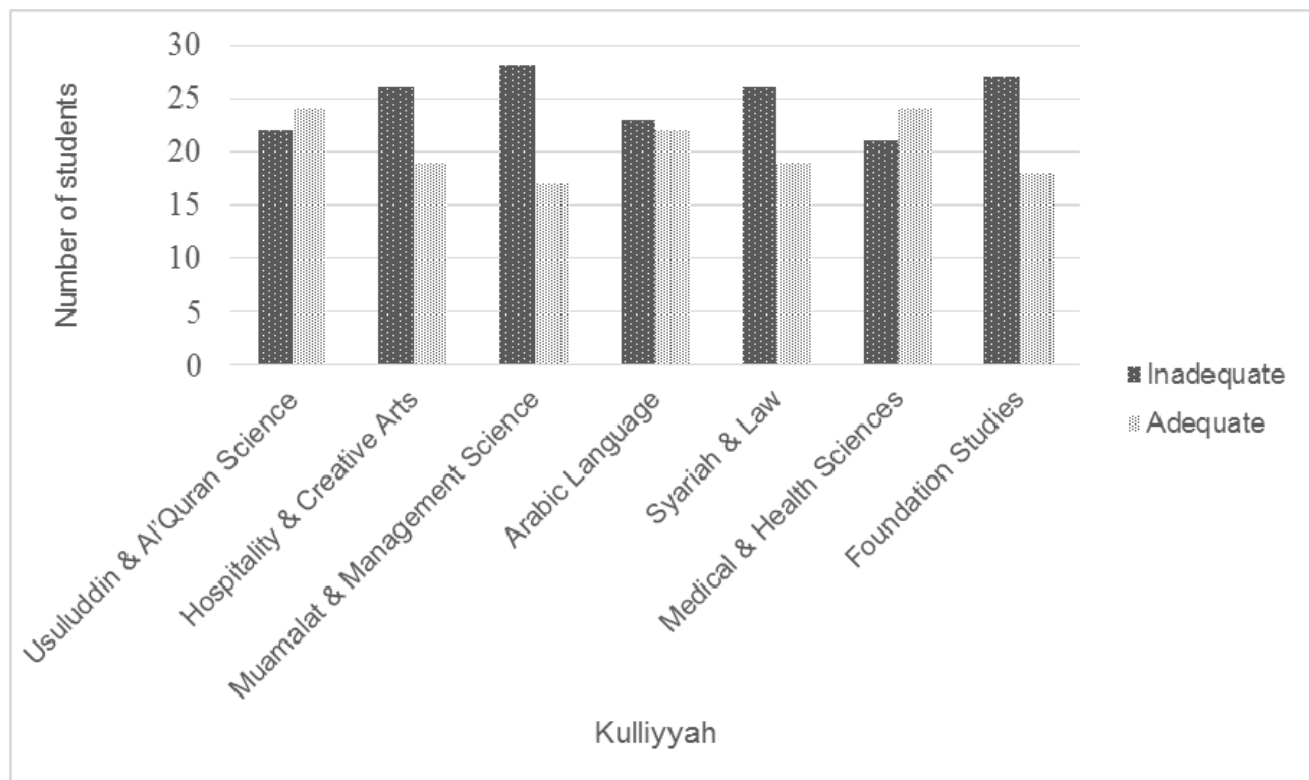


Figure 5: The number of students stayed on and out campus who performed physical activity.

there was a higher prevalence of student who performed inadequate physical activity compared to students who performed adequate physical activity. In addition, 139 out of 189 female respondents performed inadequate physical activity compared to male students while 33 out of 126 respondents performed inadequate physical activity. So, the female has a higher prevalence of inadequate physical activity. The finding was in line with a study conducted in Asian Metropolitan University (AMU) which showed that high percentage of female students (24%) performed low physical activity level as compared to male students (56%) [7]. Assumption was made that male preferred to perform more adequate physical activity while the female students prefer to spend most of their time staying at home and do their study. Besides, most of the female students felt restricted to do physical activity at the sports centre in the university because it is dominated by male students. They felt uncomfortable to do their activities. Thus, this problem should be noticed by UniSHAMS management to provide a separate sports centre for female students, so that they feel comfortable and free to do sports activities on campus.

Moreover, the present study showed that UniSHAMS students who stayed on campus have inadequate physical activity compared to those who stayed outside the campus. We hypothesized that the reason why UniSHAMS student who lives on campus has inadequate physical activity is maybe due to lack of facilities provided at the sports centre. This could give some ideas to the management on how to overcome

this problem since the lack of physical activity may affect students' performance in many ways. Thus, to encourage students to be more active in sports activities, a weekly programme can be held by the trainer so they will have the opportunity to learn the right way on how to practice sports. A few changes could be done to improve physical activity among UniSHAMS students such as locate the distance signboards along the jogging tracks or walkway and provide a safe environment for students to walk, ride bicycle and jog can give a big impact on. Campaign to encourage students to use stairs rather than elevator by displaying banners to use stairs can also increase their physical activity daily.

In this research, the overweight group and the obese group were combined, they account for 31.7% of the study population, which contribute the highest number in this study. However, the prevalence of obesity (12.3%) in our study population showed a much higher number than shown in the other studies. In other research conducted by Boo NY *et al.* (2010) determine the prevalence of obesity among students in a private medical school in Malaysia [8]. Similarly, they also found about 30.1% of the students were overweight or obese. The national data also showed there was a significantly higher proportion of the male students were overweight. They concluded that obesity was common among their students which correspond to our study findings. Thus, the group of overweight and obesity in both studies still considered high even though it does not contribute the highest percentage among all the four

categories of BMI.

When comparing the studies conducted in students of Malaysia and other regions of the world, the overweight and obesity students seem to be higher in our study population. Female students were more likely than male students to be overweight, with less likely to have adequate exercise. A research done by Ismail MN *et al.* (2002) stated that the prevalence of obesity was greater in women than in men which was in accordance to our study which female students were facing more risk of being obese [9].

To overcome the high prevalence of overweight and obesity among UniSHAMS students, guidance on how to control calorie, carbohydrate fat, saturated fat, and sodium intake daily and choosing healthy food could be displayed around the cafeteria. Besides, cafeteria should offer healthier food and eliminate the marketing of unhealthy foods. A study reported that children and caregivers who are overweight and obese involved in a nutritional programme for 16 weeks showed significantly reduced in their anthropometric measurements and BMI [10]. Other than that, a programme started recently in UniSHAMS which is an exercise clinic allow a student who is overweight and obese to participate. This exercise will help the student to reduce their weight and achieve normal BMI.

In addition, one of the purposes of performing this study is to determine any relationship between overweight/obesity and physical activities among UniSHAMS students. From our cross-tabulating study regarding the relationship between BMI and physical activity, we can see that the Chi-square test result showed that  $p > 0.05$ . Thus, there is no relationship between overweight and obesity among student with inadequate activity.

There are other factors that can be contributed to the causes of obesity. In obesity modelling studies conducted by Wan Mohamed Radzi *et al.* (2019) to identify the effective indicators of obesity by using appropriate statistical or mathematical techniques [11]. The results indicated that unhealthy food intake (fast food and soft drinks), social media use and stress exhibit the highest weight contributing to overweight and obesity issues for Malaysian university students.

Malaysian Adults Nutrition Survey (MANS) which was done between October 2002 and July 2003 concluded that Malaysian adults are generally sedentary, with only a small percentage involved in the regular and adequate exercise. The results showed that Malaysian adults were generally sedentary a lot. Only 14.43% had adequate exercise, corresponding to 19.54% among men and a mere 9.13% among women [12]. This lack of physical activity may lead to problems in overweight and obesity if combined with unhealthy dietary habits.

From the results, it was concluded that most of UniSHAMS students had a sedentary lifestyle. This is maybe due to their studies schedule. Most of the students need to sit for more than 5 hours per day for lecture session and they also sit or lay around a lot in their room after getting back from class. Many psychological factors such as perceived enjoyment, self-discipline, values, norms and beliefs, and time management were found to influence physical activity and sedentary behaviour at the same time. Moreover, students spend a lot of time on study-related sedentary activities such as sitting in class, studying, or sitting in front of their computer for academic purposes. This makes it difficult to be physically active. The study performed by Salem *et al.* (2018) demonstrated that about 184 (38.3%) of the students agreed that they cannot include physical activity in their regular schedule because of their busy schedule [13] and on the other hand 199 (41.5%) of the respondents reported tiredness and exhaustion as a key reason for physical inactivity.

As a solution, regarding the time spent seated in classes, previous research has shown that taking a five minutes walking break every hour could yield beneficial weight control or weight loss results. Hence, it should be the task of university policy makers to integrate enough break-time during prolonged classes. Furthermore, class schedules can be arranged in such a way that students must relocate by foot or by bike between classes.

## CONCLUSION

The prevalence of inadequate physical activity performed by UniSHAMS students was 54.6% (n=172) while those who practice adequate physical activity was 45.4% (n=143) only. Thus, most of UniSHAMS students performed the physical activity but some of them performed adequate physical activity. The prevalence of students with overweight BMI among UniSHAMS students was 61 students (19.4%) and obese BMI was 39 students (12.4%). Therefore, the percentage for both overweight and obese students were low compared to normal BMI which was 154 students (48.9%). Lastly, this research showed that there was no relationship between overweight and obesity among student with inadequate activity.

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