

## ORIGINAL ARTICLE

# Physical activity and psychological well-being among physiotherapy degree students in UiTM Selangor, Puncak Alam Campus: A cross sectional study

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## Abstract:

There is strong evidence that suggests the importance and benefits of physical activity for university students such as it enhances the psychological well-being of the students. The study objectives were (i) To identify the physical activity (PA) level among physiotherapy degree students. (ii) To determine the level of psychological well-being (PWB) among physiotherapy degree students. (iii) To examine the relationship between physical activity and psychological well-being among physiotherapy degree students in UiTM Puncak Alam Campus. Participants were 109 physiotherapy students (male  $n = 4$ ; female  $n = 105$ ) age between 19 and 25 years old ( $M = 21.56$ ,  $SD = 1.512$ ). Self-administered questionnaires which are International Physical Activity Questionnaire (IPAQ) and Psychological Well-Being Index (PGWBI) were used. 33.9% of the participants demonstrated low physical activity level, 34.9% and 31.2% showed moderate and high physical activity level respectively. 62.3% of the participants demonstrated severe and moderate psychological distress which show an alarming sign about students' well-being while 37.6% of the students showed being positive. A non-significant negative association between PA and PWB was found in the study. Physiotherapy degree students demonstrated a good level of physical activity. However, psychological distress among the students needs to be given attention.

**Keywords:** Physical activity, physiotherapy, psychological well-being

## 1. INTRODUCTION

Physical activity (PA) can be defined as any bodily movements that results in energy expenditure [1]. PA can be job related or household activity and also other activities such as walking or active recreation. In addition, PA is a key of health behaviour which linked to better physical health and mental functioning. There are plenty advantages associated with consistent physical activity such as reducing the risk of developing chronic disease, improve quality of life and also promote healthy cognitive and also psychosocial function.

However, many studies have addressed decrease in physical activity around the world and increase the sedentary and obesity countries and Malaysia is of no exception [2]. Physical inactivity is the fourth driving reason of death around the world and the primary cause of most chronic diseases [3]. Psychological well-being and physical health are related to one another and can have a profound effect on each other. Psychological well-being (PWB) is associated with a wide range of structures like life satisfaction, affect, happiness, adjustment and subjective well-being [4-5]. It is about lives going well and the combination of feeling good

and functioning effectively in daily life [6]. Becoming a university student is an important stage in life span. It is not easy as they are expose to many challenge and it might be difficult for them sometimes since they are viewed as the one who is responsible for the future of themselves, their families, communities and countries. A university is not a place where the students solely focus on academic performance, on the other hand, they learn to take responsibility for their choices and engaging with many challenges that could affect mental and social issues of students' life. It is common for students in higher education experienced various amount of stressors. A study carried to determine the prevalence of stress, anxiety, and depression among the local university students revealed that 16.9% of the respondents were stress, 52% were feeling anxious and 24.4% had depression problem which is worrying [7]. This portrayed that university students are at considerable risk for psychological problems.

Actively engaged in physical activity has been demonstrated to induce positive mood which can also enhance the state of psychological well-being and improve life contentment of an and challenges faced by parents of CWSN in Malaysia are still not fully explored. The issue of caregiver burden remains as a hidden issue among family members and

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individual [8]. Recent study found that physical activity may have antidepressant effects [9]. Phenylethylamine is a neurochemical that has been connected to physical energy and mood. Result from a controlled study showed substantial increase in urinary phenylacetic level 24 hours after moderate to high intensity aerobic exercise [9].

University setting provides much more benefits and a lot of opportunities towards improving physical activity among the students. Research has found that leisure activity are effective in reducing academic stress and increase well-being [10]. Despite the fact that there are plenty of physical activity resources for university students, many do not take the advantage of the opportunities. There is high incidence of sedentary time among university students, especially during weekend and the authors emphasize on the needs of developing new strategies to promote physical activity in the population and focusing on the change of sedentary behaviour [11]. In addition, students who live off-campus were found to be more physically active than students who live on-campus [12]. Lack of proper structure on physical education, health promotion and also awareness activities, making the students often to neglect the opportunities of utilizing the available facilities effectively [13].

A study conducted on investigating physical activity index among Malaysian youth revealed that at the age of 22 and above, physical activity among the youth has been reduced and it may be due demanding nature of student's life which constraint them spend less time on being physically active [14]. In addition, there is considerable proportion of undergraduate students with depression which need to be pay more attention before it affect student's well-being [15-16]. Therefore, this study is given focused on the physical activity level among physiotherapy degree students as it is assumed that physiotherapy students are aware of the importance of healthy lifestyles and also to identify their psychological well-being level and examine the association between the two variables.

## 2. MATERIALS AND METHODS

### 2.1 Study design, setting and population

The study design was a cross sectional study. The study was carried out at Faculty of Health Science, University Teknologi Mara Selangor, Puncak Alam campus. A total of 109 physiotherapy degree students were selected in the study by convenience sampling method on the basis of inclusion and exclusion criteria. The study was approved by the university research ethical committee.

Inclusion criteria: Male and female physiotherapy degree students, age 19-25 years old, physically active or inactive students that able to understand instructions.

Exclusion criteria: Students that use walking aids, students who had contraindications for physical activity, students that have been diagnosed with clinical depression.

### 2.2 Outcome measure

International physical activity questionnaire (IPAQ) short form was use to examine physical activity level. The IPAQ short form asks about three specific types of activity undertaken in the four domains introduced. The participants need to report the number of days and duration, specifying total number of hours and minute of each activity and the total of the physical activity score will be combined. The participants were classified into three categories (low, moderate and high) based on the total score of MET. Psychological well-being index (PGWBI) is one of the most widely used questionnaires for evaluating a person's level of psychological well-being [17]. The measure is based on six domains which are anxiety, depression, positive well-being, self-control, general health and vitality. It consists of 22 questions and use 6 points likert scale to generate the score for the psychological well-being index. The sum of all response from each domain produce the overall index ranging from scores between 0 and 60 (severe psychological distress, scores between 61 and 72 (moderate psychological distress and scores 73-110 (being positive).

### 2.3 Statistical analysis

The data analysis was conducted using Social Science software (SPSS) version 22.0 to test the hypothesis, obtain the correlation and further to discuss the result found.

## 3. RESULTS

Table 1 shows the distribution of participants by their socio-demographic characteristics. Participants were 109 physiotherapy students (male n = 4; female n = 105) age between 19 and 25 years old ( M = 21.56 , SD = 1.512 ). Out of 109 participants, 10 students (9.2%) were from semester one, followed by 53 (48.6%) from semester three and 46 students (42.2%) from semester seven.

Table 1: Demographic characteristics of study sample

Variables	Mean(SD)	N (%)
Age	21.56(1.512)	
Gender		
Male		4(3.7)
Female		105(96.3)
Semester		
1		10(9.2)
3		53(48.6)
7		46(42.2)

Table 2 shows 33.9% physiotherapy students demonstrated low physical activity level, 34.9% and 31.2% show moderate and high physical activity level respectively.

From 109 of participants in this study, 28.4% of physiotherapy students are classified as experiencing severe psychological distress (scores between 0 and 60), 33.9% showed moderate psychological distress (scores between 61 and 72), while 37.6% are placed in the category of score of ‘being positive’ (73-110).

Table 2: Physical activity level of study sample

Variables	n (%)
Physical activity (PA) level	
low PA	37 (33.9)
moderate PA	38 (34.9)
high PA	34 (31.2)

Table 3 shows non-significant negative moderate correlation between physical activity and psychological well-being ( $r = -0.66$ ;  $p > 0.05$ ).

Table 3: Spearman’s correlation of physical activity and psychological well-being

	Total score IPAQ	Total score PGWBI
Total score IPAQ (Spearman correlation)	1	-.066
Sig. (2-tailed)		.493
N	109	109

**4. DISCUSSION**

This study was conducted to identify the physical activity and psychological well-being level among physiotherapy degree students in uitm puncak alam campus. The finding of this study showed that 33.9% physiotherapy students demonstrated low physical activity level, 34.9% and 31.2% who showed moderate and high physical activity level respectively.

The finding of this study showed that the students have moderate (34.9%) to high (31.2%) physical activity level. This is consistent with another study which found 54% of the PT student demonstrated moderate activity level and 46% demonstrated high PA [18]. It is important for physiotherapist or physiotherapy students to have good level of physical activity as they also serve as model to practice a healthy lifestyle including become physically active individual. A cross-sectional study showed the physical therapist, physical therapist assistants and physical therapist students all followed the American College of Sports Medicine (ACSM) recommendations for physical activity and their physical activity level was higher compared with general public and other health care professionals.

However, there is a study reported a higher percentage (48.7%) of physiotherapy undergraduate were inactive despite of believed to be knowledgeable about the benefits of physical activity [19]. The present study also showed a high percentage of physiotherapy students (33.9%) which demonstrated low level of physical activity. Lack of proper structure on physical education, health promotion and also awareness activities, making the students often to neglect the opportunities of utilizing the available facilities effectively [13]. The designing of university infrastructure, including the location of recreational physical activity facilities, could be related with the physical activity patterns of university students [20]. This showed that recreational facility prepared by university can become one of the attraction tools to encourage students’ participation in physical activity as they can have proper place to exercise or do recreation. As for this study, majority (96.3%) of the participants consist of female students. Large body of evidence showed that male students are physically active compare to female students [13, 16, 21-22]. Biological reason may contribute to lower physical activity among female students which related to maturing at an earlier chronological age [23]. In addition, the neurological differences where female’s brain contain more grey matter while male’s brain have more white matter and cerebrospinal fluid (CSF) might influenced human development in term of gender-aligned behaviours including the preferences for and desire to physical activity [24]. Moreover, male and female students have different motivation to involve in physical activity. Male students were encouraged by intrinsic factors such as strength, competition and challenges whereas female students were motivated by extrinsic factors like weight management and appearance [25]. In addition, female students prefer to focus more on academic performances whereas male students tend to participate in physical activity such as jogging and cycling in the evening after lecture hours [22]. Therefore, more physical activity campaign awareness should be encouraged especially among female students since insufficient prevalence of physical activity was higher among them [13].

It is vital to encourage health behaviour among the university students because during this period of age, they will learn behaviour that last for a life time [16]. Besides, physical activity is found to be correlated with students’ academic performance by many researchers. According to Grissom [26], physical activities help students to develop knowledge, attitudes, motor and also behaviour skills. Previous study found a positive influenced of physical activity on education in which it help to increase students’ focus on studies [27]. By being physically active students, students’ academic performance would improve [19].

The finding of this study showed that 28.4% of physiotherapy students experiencing severe psychological distress, 33.9% were classified as having moderate psychological distress while 37.6% of the participants demonstrated as being positive. Severe psychological distress and moderate psychological distress together made 62.3% which show an alarming sign about students’ well-

being. High prevalence of distress in the present study maybe due to high number of female ( $n= 105$ ) subject presenting psychological distress. A previous study found a statistically significant difference in the psychological well-being among male and female students [5]. Psychological well-being vary between gender differences do exist because of biological and psychological differences [5]. A study to determine whether there is psychological well-being difference across gender found that men have greater self-acceptance, self-worth and feeling of adequacy [14]. Besides, men are less likely to personalize external occasion and are less sensitive to rejection, disappointment or disapproval which may encourage the greater self-esteem and elevated appraisal of self-worth [14].

A study to examine the prevalence of psychological distress among undergraduate students revealed that 31% of the undergraduate students were psychologically distress [28]. This is in line with another study which found 29.2% of students were having mental distress [23]. This is worrisome since students who experienced very high levels of distress were unable to study or carry out normal activities in which will further increase the pressure to catch up and consequently increasing their psychological distress [9]. Depression, stress, and anxiety are among the psychological problems that are common among students. University students who are experiencing psychological problem may face difficulties in managing their academic attainment. Public concern for the mental health of university students has been rising. A study conducted by Fuad et al. [7] revealed the prevalences of stress, anxiety, and depression among the students were 16.9%, 52% and 24.4% respectively. This is consistent with other studies which found a high level of depression and anxiety among university students [8, 29]. Any symptom such as stress or depression can cause students to have difficulties to concentrate and focus on their studies which over time it can affect students' academic performance by reducing their motivation and interest in academic related activities [30].

Result of the Spearman's correlation indicated that there were a non-significant negative association between PA and PWB ( $r = -0.66$ ;  $p > 0.05$ ; Table 3) thus indicating that physical activity has a moderate negative association with PWB according to this research project. The inability to find a strong association between PA and PWB is consistent with a study by Hawker (2012) [31]. There is no relationship was found between PA and life satisfaction maybe because certain amount of PA is needed to increase the life satisfaction and its depend on the population of the study [30]. In addition, one other plausible reason for not finding a relationship between PA and PWB maybe due to the intensity of PA undertaken. Eventhough PA has been well documented to help in improving mood and reducing stress, it can be dependent on the intensity of exercise [32]. Moderate level more often lead to positive mood while more intense forms of exercise may lead to displeasure feeling [32].

Additionally, stress is unavoidable as it relates to any external event which may be pleasurable or threatening and it can be affected by many factor [22]. A moderate negative association between PA and PWB was found in the study maybe due to external and internal factor that causes the stress. If the students unable to deal with the stressful situation, physical activity might not be the best way for them to use it as a coping mechanism. This is in line with a study by Nguyen-Michel et al. [33] which found non-significant relationship between physical activity and perceived stress .

Even though the present study did not find any significant relationship between physical activity and psychological well-being, physical activity should be encouraged among students as they bring a lot of benefit in term of physical health or emotional well-being. Furthermore, previous study found a strong positive significant association between physical activity with self-perception in which conclude that physical activity may enhance better quality of life and satisfaction [34]. Besides, two cross-sectional studies using objective measurement of physical activity which is accelerometer found that moderate to vigorous physical activity was associated with better health-related quality of life in healthy adults [13, 35]. In addition, physically active students especially the one with high level of physical activity have lower levels of anxiety and also depression compared to the other medium and low physical activity group's students [1]. In other words, increased in physical activity levels can help to reduced self-reported levels of anxiety and depression. Although the results suggest a relationship between greater physical activity and lower levels of depression and anxiety, they do not infer a cause and effect relationship [1]. It is difficult to say that higher levels of depression and anxiety are due to a lack of physical activity in which longitudinal randomized controlled trials are certainly needed to help answer the question [1]. However, the present study does not look at anxiety and depression aspect only, in fact, the current study concerned about the general well-being of the student.

## 5. CONCLUSION

The findings of this study showed that physiotherapy degree students demonstrated a moderate to high level of physical activity which is crucial as physiotherapy students serve as role model for practicing health lifestyle behaviour and one of the most important elements of a healthy lifestyle is regular physical activity. Nevertheless, psychological distress among the students is an alarming indicator of students' well-being which needs to be given attention.

The use of a cross-sectional design for the study means that no causal relationships can be inferred from this study. Like most survey studies, the use of self-reported questionnaires could have led to biases issue. Besides, the sample demographics also could cause problems with the generalizability of results in which many of the participant

were females. The results may have been varied if there are more males' participants. Since the participants were recruited from convenience sampling, this research cannot be assumed to have external validity for all university students.

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