

## **THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND STRESS LEVEL AMONG UNIVERSITY OFFICE WORKERS**

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### ABSTRACT

*Office workers are a subgroup of employee who perform administrative clerical work in front of computers on regular basis. This group is characterized as the population that engages in less physical activity and tend to have higher level of stress. The main objective of this study is to determine the relationship between physical activity and stress level among office workers in a university. Physical activity level was measured with International Physical Activity Questionnaire (IPAQ-SF) (7 items) and Perceived Stress Scale Questionnaire (PSS) (10 items) was the instrumentation used to measure stress level. Total of two hundred thirteen (N=213) office workers were participated in this survey. Most of the respondents report moderate physical activity (58.2 %) and moderate level of stress (70.0%). The findings of this study showed that there was no significant relationship between physical activity and stress level ( $p > .05$ ). As for conclusion, physical activity and stress level were not associated and interdependent to each other. There are multiple factors that affect physical activity engagement and stress level.*

**Keyword.** *Physical activity, Stress, Office worker, IPAQ-SF, PSS*

## INTRODUCTION

Physical inactivity is linked to increased risk of various diseases that may negatively impact individual's physical and mental well-being, quality of life, ability to function, mortality and cause of death (Gillan, Naquin, Zannis, Bowers, Brewer and Russell, 2013). Lack of exercise will result in physical and psychological problems that increase the risk of chronic disease, stress, depression, and obesity (Booth, Roberts and Laye, 2012). Though engaging in physical activity might be advantageous in life, many people do not develop this habit, which leads them to be labelled as inactive (Booth et al., 2012).

The recommended amount of physical activity for adult age 18-64 years old is at least 150 minutes of moderate-intensity aerobic activity, or a minimum 75 minutes of vigorous-intensity aerobic activity or an equivalent combination of both moderate and vigorous intensity activity for at least 3-4 days per week (WHO, 2010). Any movement of the body that burns calories is considered as physical activity including stretching, stair climbing and walking (AHA, 2021). Physical activities and exercises improve body physiological function and lighten the psychological stress (Carmeli, 2013).

"Happy hormones" known as serotonin, endorphins, dopamine, and oxytocin will be secreted by the body while engaging in physical activity (Noelan, 2014). These hormones interact with your brain and trigger a positive feeling, mood and happy emotion. Physical activity and exercise beneficial effects on mood and cognition over the long term have sparked interest among researchers (Basso & Suzuki, 2017). An individual who regularly engages in physical activity can maintain a happy outlook and avoid developing mental health issues.

Many offices workers experience stress while working. Work stress can be influenced by environment factor, overload of work, lack of time and high work pressure (Can, 2019). Prolonged stress experienced by the workers or employee may have contributed to a number of health issues and reduce quality of life (Can, 2019). According to Park and Jang (2019), high occupational stress is strongly correlated with decreased workers' quality of life, negative health effects, higher absenteeism, and lower productivity. Headaches, exhaustion, high blood pressure, sleeplessness, muscle aches, chest discomfort, and frequent illness are the common symptoms of overstress in workers (Kapur, 2018).

Exercise has been shown to be an effective method for managing psychological stress in general (Park & Jang, 2019; Gillian et al., 2013). Regular exercise has been associated with stress reduction and mood enhancement (Hamer, Endrighi and Poole, 2017). Exercise is also known to significantly improves physical wellness and lower the likelihood of mental health problems as a coping strategy (Wike and Weathington, 2011). Despite the well-established benefits of exercise, the level of physical activity among office workers is still relatively low. Therefore, the purpose of this study is to determine the relationship between physical activity and stress level among office workers in UiTM Seremban 3.

## METHODS

### *Participants*

Two hundred thirteen (N=213) office workers in UiTM Seremban 3 age  $35.67 \pm 0.63$  had participated in this study. Informed consent was obtained from all participants prior to the commencement of the study with explanation on the study objective.

### *Instrumentations*

#### *International Physical Activity Questionnaire (IPAQ)*

The short version of the IPAQ questionnaire comprising of 7 questions (Craig et.al, 2003) was used to assess the physical activity level. Data from the IPAQ-short version are summed within each item (i.e., vigorous intensity, moderate intensity, and walking) to estimate the total duration spent in physical activity per week. An expressed MET-Min/Week is assessed using a standard calculation formula.

#### *Perceived Stress Scale*

Perceived stress scale (PSS) is a 10-item scale used to examine the degree and perception of stress (Cohen et al., 1982). It is a measure of how stressful a person perceives their present situation to be. PSS scores are rated as reversed score (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 and 4 = 0) to the questions 4, 5, 6, 7 and 8. The question will start with "In the previous 30 days, how frequently did you feel etc". Each item is rated on a five-point scale from 0 = 'never' to 4 = 'very often'. The final score will reflect the level of stress (0-13 is low level, 14-26 is moderate level of stress and 27-40 shows high level of stress).

#### *Statistical Analysis*

Statistical analysis was carried out using Statistical Packaging for Social Sciences (SPSS) Statistics version 24. The Pearson correlation test was used to assess the relationship between variables. Descriptive statistics (mean  $\pm$  SD) was used to report the demographic data of the study. Statistical significance level was accepted at  $p < 0.05$ .

## RESULTS

Total of two hundred thirteen (N=213) office workers in UiTM Seremban 3 age  $35.67 \pm 0.63$  years old had participated in this study. The mean body weight of the respondents was  $63.82 \pm 14.40$  kg. Majority of the office workers in UiTM Seremban 3 (n=124) have moderate level of physical activity (58%), while only 13.1% office workers are reported to be high physically active. Table 1 presents the descriptive data for the physical activity level. Most of the office workers in UiTM Seremban 3 have moderate level of stress (n=149, 70%) as presented in Table 2. Only 13.1% of the population are highly stress.

*Table 1: Physical Activity Level*

	Frequency (n)	Percent (%)
Low PA (Inactive)	61	28.6
Moderate PA (Minimally Active)	124	58.2
High PA (Active)	28	13.1
Total	213	100.0

PA: Physical Activity

*Table 2: Perceived Stress Scale*

	Frequency (n)	Percent (%)
Low level of stress	35	16.4
Moderate level of stress	149	70.0
High level of stress	29	13.6
Total	213	100.0

The findings of this study showed that there was no significant relationship between physical activity and stress level ( $p > .05$ ) and fail to reject null hypothesis.

*Table 3: Correlation between Physical Activity and Stress*

	Stress
Physical Activity	-0.064

Note. \*  $p < .05$

## DISCUSSION

The objective of this study is to investigate the relationship between physical activity and stress among office workers in UiTM Seremban 3. Findings of this study showed that, there was no significant relationship between these two variables. The moderate level of physical activity does not appear to have much effect on the level of stress or vice versa. The acceptable and manageable level of both variables among targeted population contributed to the insignificant result. The mean age of the respondents ( $35.67 \pm 0.63$  years old) represents early middle-aged individuals who may still have a youthful mindset and be physically active but may also be dealing with some of the challenges and responsibilities that come with aging. It is speculated that young adults had lower levels of cortisol (a stress hormone) and better cardiovascular responses to stress compared to older adults (Benner, Boyle and Sadler, 2016). Wike and Weathington (2011) and Can (2019) conducted other study that revealed comparable findings to those previously mentioned.

Majority of the office workers in UiTM Seremban 3 are minimally active person as shown by the 70.0% physical activity findings. They engage in a very little physical activity on a regular basis below the recommended guideline for overall health as suggested by WHO (2010). This has been linked to poorer mental health outcome. The level of physical activity may be not sufficient for inducing the stress buffering effect. There are several reasons why office workers may be not adhering to exercise including time constraints and lack of motivation (Michie, 2002). The most prevalent reason for failing to exercise is lack of time. Work or career demands, family responsibilities, and feeling overwhelmed with busyness are the common excuses for not being physically active. However, the lack of time for exercise belief is often a matter of perception rather than actual reality. The real issue is not a lack of time factor but rather a lack of prioritization of exercise.

As for the stress result, most of the office workers in UiTM Seremban 3 have moderate level of stress (70%). According to Michie (2002), stress may be caused by various factors, including their work environment, family, friends, and workload. The performance of office workers often declines when they experience high levels of stress, which can lead to negative impacts such as decreased productivity, reduced self-esteem, impaired decision-making abilities, and difficulties with concentration (Of et al., 1993). These stress-related factors can contribute to poorer overall work performance. Individuals working under negative and challenging environment may experience job stress, which can lead to a lack of desire to engage in physical activity. Such stressful conditions can cause a decrease in motivation for physical activity, making it difficult for individuals to stay physically active.

## CONCLUSION

In conclusion, physical activity and stress level were not associated and interdependent to each other. There are multiple factors that affect physical activity engagement and stress level. Although exercise can be an effective way to manage stress for many people, it may not work for everyone in every situation. In such cases, it may be necessary to explore other combination strategies that work best for each individual to manage their stress effectively.

### *Conflict of interest*

Nurfarrahanis Amran, Sharifah Maimunah Syed Mud Puad, Muhammad Wafi A. Rahman and Mohd Faridz Ahmad declare that they have no conflict of interest.

### *Authors' contributions*

Nurfarrahanis Amran carried out this study and drafted the manuscript,  
Sharifah Maimunah Syed Mud Puad participated in the design of the study and wrote the manuscript,  
Muhammad Wafi A. Rahman performed the data analysis and participated in the design of the study,  
Mohd Faridz Ahmad reviewed manuscript.  
All authors read and approved the final manuscript.

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