ORIGINAL ARTICLE

Factors Contributing to Physical Activity among University Employees in East Malaysia: A Cross-sectional Study

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ABSTRAK

Aktiviti fizikal membawa banyak manfaat kepada kesihatan yang merangkumi kesejahteraan fizikal, mental dan sosial. Walaupun kepentingan dan faedah aktiviti fizikal sering ditekankan, namun jumlah populasi yang melakukan aktiviti fizikal yang mencukupi masih berada pada tahap yang rendah. Kajian ini bertujuan untuk mengenal pasti faktor-faktor yang mempengaruhi tahap aktiviti fizikal dalam kalangan kakitangan Universiti Malaysia Sarawak (UNIMAS). Ini adalah kajian keratan rentas menggunakan soal selidik yang dikendalikan sendiri melalui dalam talian. Seramai 163 kakitangan UNIMAS yang terdiri daripada 37.4% ahli akademik dan 62.2% bukan ahli akademik mengambil bahagian dalam kajian ini yang dipilih menggunakan kaedah pensampelan pelbagai peringkat. Regresi logistik berganda digunakan untuk mengkaji faktor-faktor yang berkaitan dengan tahap aktiviti fizikal. Majoriti responden terdiri daripada wanita (74.2%), Melayu (60.1%), sudah berkahwin (65.5%), kakitangan bukan akademik (62.6%), dan mempunyai pendidikan tinggi (85.9%). Purata waktu bekerja adalah 8.25 jam sehari. Tahap aktiviti fizikal yang diukur menggunakan soal-selidik berkaitan aktiviti fizikal (IPAQ) menunjukkan majoriti responden mempunyai tahap aktiviti fizikal sederhana (56.4%), diikuti dengan tahap aktiviti fizikal tinggi (33.7%) dan tahap aktiviti fizikal rendah (9.8%). Terdapat penemuan yang signifikan terhadap hubungan antara penghalang tingkah laku bersenam (p = 0.003) dan keberkesanan diri (p = 0.009) dengan tahap aktiviti fizikal. Analisis regresi logistik berganda menunjukkan bahawa penghalang tingkah laku bersenam (OR = 1.170, 95% CI = 1.027, 1.334, p=0.019) dan keberkesanan diri (OR = 1.091, 95% CI = 1.015, 1.172, p=0.017) mempunyai kaitan dengan tahap aktiviti fizikal yang rendah dan sederhana. Hasil kajian menunjukkan bahawa penghalang tingkah laku bersenam

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dan keberkesanan diri mempengaruhi hasil tahap aktiviti fizikal dalam kalangan responden.

Kata kunci: aktiviti fizikal, faktor halangan, faktor penggalakkan

ABSTRACT

Physical activity (PA) is known to have numerous health benefits. However, despite the frequent emphasis on the importance and benefits of being physically active, the number of people engaged in regular physical activity is still on the low side. This study aims to identify the factors that can influence physical activity levels among staffs from a public university staff in Sarawak, Malaysia. This was a cross-sectional study using a self-administered questionnaire distributed online. A total of 163 of Universiti Malaysia Sarawak (UNIMAS) staffs comprising of 37.4% academician and 62.2% non-academician participated in this study. The participants were selected using a multistage sampling method. Multiple logistic regression (MLR) was performed to examine the factors associated with physical activity level. Majority of the respondents were female (74.2%), Malays (60.1%), married (65.5%), non-academic staffs (62.6%), had tertiary education (85.9%) with mean working hours per day of 8.25 hours. Physical activity (PA) level measured by International Physical Activity Questionnaire (IPAQ) showed the majority of respondents had a moderate PA level (56.4%), followed by a high PA level (33.7%) and a low PA level (9.8%). There were significant findings on the association between exercise attitude barrier (p=0.003) and self-efficacy (p=0.009) with physical activity level. Multiple Logistic Regression analysis showed that exercise attitude barrier (OR=1.170, 95% CI=1.027, 1.334, p=0.019) and self-efficacy (OR= 1.091, 95% CI= 1.015, 1.172, p=0.017) was associated with low and moderate PA level. The findings indicated that exercise attitude barrier and self-efficacy influence the outcome of physical activity level among the respondents.

Keywords: barrier, facilitating factor, physical activity

INTRODUCTION

In recent years the rising prevalence of non-communicable diseases has been strongly linked to the physical activity status of an individual. It is well recognised that are physical activity level are able to lower the risk of certain non-communicable diseases such as cardiovascular diseases, diabetes mellitus, hypertension and many more (World Health Organization 2019).

However, despite the frequent emphasis on the importance and benefits of being physically active, the number of those engaged in regular physical activity is still on the low side. Globally, based on a current estimate

by WHO, about 23% of adults do not meet the physical activity requirement (World Health Organization 2018). In Malaysia, based on National Health and Morbidity Survey 2015, the prevalence of physically active adults was observed to be slightly increased compared to the survey conducted in 2011. However, the vast numbers of adults achieved only a minimally active physical activity level. The survey reported that out of 66.5% of physically active adults, 41.1% were minimally active, and only 25.4% were adequately active (Institute for Public Health 2015).

Factors such as lack of time due to work and family commitment are among the common factors that are often quoted by many, especially among the working adult population (Kristiann et al. 2004). As the majority of the adult spent most of their time at work besides home, it implies that work is one of the vital socio determinants of health among the adult population. In terms of physical activity, work is one factor that can influence the behaviour toward physical activity. More time spent on working leads to less sleep, more stress, increase fatigue which causes a lack of energy and mood to engage in physical activity. Besides that, the nature of the job also may determine the individual physical activity level. Therefore, a workplace is seen as a suitable setting to promote physical activity programmes. Incorporating physical activity in the workplace will not only bring about benefits to the individuals but also their organisation. Adults with adequate physical activity

levels may enjoy benefits in terms of physical, mental and social health. In addition, physical activity can indirectly reduce the number of sick leaves and absenteeism.

There are many factors identified that influenced individual participation in physical activities programmes. Other than the availability of fitness facilities, other factors such as lack of time, self-efficacy and confidence as well as external supports from families and friends may also contribute towards a willingness to participate in the fitness programmes (Oluyinka & Endozo 2019).

In Malaysia, many studies have investigated factors contributing to physical inactivity among university students, but less are focusing on the university staff. The purpose of the present study was to examine factors that contributed to the engagement of physical activity among working adults in workplace setting a public university in Sarawak, Malaysia, Universiti Malaysia Sarawak (UNIMAS). The main objective of this study was to determine the physical activity level and its association with socio-demographic, barriers and facilitating factors among staffs at UNIMAS. In envisioning to be a health-promoting campus, the study outcome will be able to provide important information on barriers and facilitating factors of physical activity among its employee which will help UNIMAS and its employees to make any decision on improvement needed for the physical activity among the employees.

MATERIALS AND METHODS

Study Area

This study was carried out at UNIMAS, a public university located in the Samarahan Division of Sarawak, East Malaysia. It is the one of the biggest public university in Borneo, which consists of 15 faculties and institutes, and 30 administrative departments and centre. It has a total population of 2287 staffs including both academicians and non-academicians.

Study Design

A cross-sectional study design was conducted, which included all the academic and non-academic staffs of UNIMAS.

Sample Size

Sample size was calculated using OpenEpi (version 3.0) using the sampling frame of 2287, confidence level of 95%, confidence limit of 5%, the hypothesised percentage frequency of outcome factors 74.8% (Institute for Public Health 2015), design effect of 1, and attrition of 5%, a total of 272 samples was estimated. The inclusion criteria were all UNIMAS staff (both academic and non-academic staff) who have been working in UNIMAS campus at least for one month and more. Staff that were on study leave or long leave for more than 6 months, pregnant or stationed outside of the main campus (Sibu branch or City Campus branch) were excluded for this study.

Sampling Method

Sampling was conducted using multistage sampling method, which applied the combination of simple random sampling and proportionate stratified random sampling. All the faculties and institutes with academician within UNIMAS was considered as one pool. The UNIMAS campus consists of ten faculties and five institutes. Subsequently, 50% out of these faculties and institutes was selected using simple random sampling methods. Thus, seven faculties and institutes were selected randomly to be the study sampling area. The same sampling methods were applied to the divisions and centers with non-academicians. Out of a total of eight divisions and seven centers in the UNIMAS campus, a total of seven divisions and centers was randomly selected to be included in the sampling area. In total, there were 15 of the sampling areas at UNIMAS that were selected. All the staff in the selected faculties and centers were included as the study sample. Using proportionate stratified random sampling, 50% consists of non-academic staff and 50 % academics staff were selected.

Research Instrument

The data was collected using an online Google Form questionnaire, comprising of four components. Component 1 consisted of 18 questions on socio-demographic and other related characteristics (age, gender, ethnicity, marital status, education level, occupation, job

category, department, duration of working hour per day, medical and surgical history). Component 2 was the English and translated Malay version of the International Physical Activity Questionnaires (IPAQ) long form, validated for Malaysia (Chu & Moy 2013). This instrument was structured under four domains i.e. work, transportation, domestic chores and gardening (yard) and leisure-time activity. The physical activity level outcome by IPAQ was analysed using Metabolic Equivalents (MET) which are usually used to determine the intensity of physical activities. Component 3 was the Corporate Exercise Barrier Scale (C-EBS) Questionnaire (Schwetschenau et al. 2008). This instrument was translated using back-to-back technique and further validated before it was used. There were 16 items of the barrier which divided into four subsets i.e. the time motivation barrier, exercise attitude barrier, external barrier and internal barrier. The respondents indicated their level of agreement with each item in the C-EBS using a seven-point Likert scale. The scale ranges from 1 for strongly disagree, 2 for disagree, 3 for somewhat disagree, 4 for neutral, 5 for somewhat agree, 6 for agree and 7 for strongly agree. The barrier scale items were then given a reverse-score of 7 scores strongest disagreement and 1 score for the strongest agreement. Meanwhile, for the scale of the facilitating factor, normal scores were used for the positive items and reversed scores were used for the negative items. Component 4 was the perception of physical activity,

comprising of 13 items, adopted from Akpan et al. (2013). The response to the questions was based on a five-point Likert scale from Strong disagree to Strongly agree. Higher scores indicated better perception.

Data Collection Procedure

Upon the approval from the Medical Research Ethics Committee (UNIMAS/ NC-21.02/03-02 Jld.4 (42)), Vice-Chancellor of UNIMAS and all the Deans of the faculties and head of departments, the questionnaire was distributed via e-mail as attachment as well as a QR code for assessing the online questionnaire. Once the potential respondents decided to participate and indicate their agreement to participate in the study by signing the electronic Informed Consent Forms, they were given the link to the Google Form Questionnaire. The participant need to complete all of the questions in the questionnaire. By clicking the submit button, automatic response was auto-generated in the Google Form. The raw data from the Google Form were then downloaded in the form of an excel file for further data processing.

Pilot Study

Prior to the actual data collection, a pre-test of the questionnaire was done among a group of 30 respondents. The purpose of the pre-test was to check the understandability and suitability of the questionnaire. Internal Consistency Reliability (Cronbach's Alpha) was done to check the reliability of the items

in the questionnaire. The pre-test was done using Google Form with QR code link. On average, the respondents took about 10 to 15 minutes to complete the questionnaire. The overall Cronbach's alpha value was 0.834 which showed good internal consistency.

Statistical Analysis

The data collected was downloaded into Microsoft Excel (Microsoft Corp., Redmond, WA, USA) for quality control and data cleaning. Any missing data due to incompleteness were discarded. Once the data was cleaned, it was imported into Statistical Package for Social Science (IBM Corp., Armonk, NY, USA) version 22 for further analysis. Descriptive statistics using mean, median, standard deviation and percentage were used to analyse

all the data. Median interquartile for MET-minute per week was used for descriptive analysis of IPAQ data. In preparation for multivariate analysis, univariate analysis was carried out using cutoff point of $p \leq 0.25$ to shortlist independent variables. Multiple logistic regression was used to answer the research objective.

RESULTS

A total of 200 out of 273 targeted responses were collected for this study, giving a 73% response rate. However, only 163 samples were included into the final data analysis after excluding 11 incomplete responses and 26 respondents that did not meet required criteria for IPAQ analysis during initial analysis. The socio-demographic characteristics of the respondents are

Table 1: Socio-demographic characteristic of the respondents (n=163)

Socio-demographic characteristic	n (%)	Mean (SD)
Age (year)		39.71 (8.069)
Sex		
Male	42 (25.8%)	
Female	121 (74.2%)	
Ethnicity		
Malay	98 (60.1%)	
Chinese	12 (7.4%)	
Iban	24 (14.7%)	
Bidayuh	11 (6.7%)	
Others	18 (11.0%)	
Marital status		
Single	49 (30.1%)	
Married	107 (65.6%)	
Others (divorced, widow)	7 (4.3%)	
Job categories		
Academic staff	61 (37.4%)	
Non-academic staff	102 (62.6%)	
Duration of working hours per day (hours)		8.25 (1.765)
Educational Level		
Secondary (Form 1-6)	23 (14.1%)	
Tertiary (College, University)	140 (85.9%)	

Table 2: Physical activity level of respondents measured by IPAQ (n = 163)

Variables	Median (IQR) (MET-minutes per week)	n (%)
IPAQ		
Domain 1: Work	240.0 (0-959.0)	
Domain 2: Transport	138.6 (0-406.2)	
Domain 3: Domestic	750.0 (292.0-1028.0)	
Domain 4: Leisure	297.0 (0-1173.0)	
Total Physical Activity	2166.0 (1149.0-2414.8)	
Physical Activity Level		
Low		16 (9.8%)
Moderate		92 (56.4%)
High		55 (33.7%)

Table 3: Perception of physical activity (n = 163)

	N (%)				
	SD	D	N	A	SA
1. Physical activity is a physical exertion for health benefits.	0 (0.0)	4 (3.6)	8 (7.3)	55 (50.0)	43 (39.1)
2. Walking briskly for at least 2.8 km in 35 minutes per day is a physical activity that improves the quality of living.	0 (0.0)	6 (5.5)	18 (16.4)	58 (52.7)	28 (25.5)
3. Jogging for at least three times a week is an example of physical activity that is for healthy living.	0 (0.0)	5 (4.5)	15 (13.6)	56 (50.9)	34 (30.9)
4. Cycling is a physical activity for quality living.	0 (0.0)	5 (4.5)	24 (21.8)	54 (49.1)	27 (24.5)
5. Swimming at least for 20 minutes three times a week is a physical activity that keeps one healthy.	1 (0.9)	3 (2.7)	24 (21.8)	55 (50.0)	27 (24.5)
6. Physical activity prevents high blood pressure and maintains health.	0 (0)	2 (1.8)	17 (15.5)	53 (48.2)	38 (34.5)
7. Physical activity prevents people from being isolated	2 (1.8)	9 (8.2)	34 (30.9)	45 (40.9)	20 (18.2)
8. Physical activity prevents depression, thus enhancing quality living.	0 (0.0)	2 (1.8)	20 (18.2)	55 (50.0)	33 (30).0
9. Physical activity prevents joint diseases and keeps one healthy.	2 (1.8)	6 (5.5)	20 (18.2)	58 (52.7)	24 (21.8)
10. Physical activity prevents heart diseases and keeps one healthy.	0 (0.0)	4 (3.6)	13 (11.8)	62 (56.4)	31 (28.2)
11. Physical activity prevents obesity and keeps one in shape.	0 (0.0)	1 (0.9)	14 (12.7)	54 (49.1)	41 (37.3)
12. Physical activity reduces mental tension for mental well-being.	0 (0.0)	2 (1.8)	13 (11.8)	65 (59.1)	30 (27.3)
13. Physical activity helps to improve blood circulation for quality living	0 (0.0)	1 (0.9)	10 (9.1)	60 (54.5)	39 (35.5)

SD=strongly disagree; D=disagree; N=Neutral; A=Agree; SA=Strongly agree; Mean = 3.8 (SD 0.59), min=1.15, max=5.0

Table 4: Perceived barrier and facilitating factors toward physical activity (n=163)

Variables	Mean (SD)
Perceived barriers	
Time/motivation barrier	16.6 (4.87)
Exercise attitude barrier	15 (2.89)
Internal barrier	20.2 (5.09)
External barrier	22.9 (5.61)
Total Barrier score	74.9 (14.55)
Perceived facilitating factors	
Personality	48.3 (6.27)
Self-efficacy	17.9 (5.53)

summarised in Table 1. Majority of the respondents were female (74.2%), Malay (60.1%), married (65.6%), non-academic staff (62.6%) and with tertiary education (85.9%).

Table 2 shows total physical activity score of the respondents with median (IQR) of 2166 (1149-2414.8) MET-minutes/week. Domain 3 of the IPAQ for domestic activity shows the highest median (IQR) with the value of 750 (292-1028) MET-minutes/week. The results showed that most of the respondents fell into moderate physical activity level which comprised of 56.4%, followed with 33.7% of respondents that fell into high physical activity level and only

9.8% of the respondents fell into the low physical activity level category. Table 3 displays the respondents' perception of physical activity which shows high percentages of respondent either "Agree" (A) or "Strongly agree" (SA) to all items in the physical activity perception component. The result indicated that the staff had a high perception and understanding that physical activity enhanced their quality of life. Table 4 shows that the external barrier subset had the highest mean score with a value of 22.9, while the exercise attitude barrier had the lowest mean score with a value of 15.0.

Multivariate logistic regression was done to determine the factors that can

Table 5: Multiple logistic regression for factors contributing to physical activity level (n=163)

Variables	B	S.E	Wald	df	Sig.	Exp (B)	95% CI for Exp (B) Lower	Upper
Socio-demographic								
Age	0.023	0.23	1.033	1	0.309	1.023	0.979	1.070
Ethnicity (reference=Malay)	0.115	0.128	0.810	1	0.360 0.069	1.122	0.873	1.441
Job category (reference=academic staff)	0.701	0.386	3.296	1		2.015	0.946	4.295
Perceived barrier								
Exercise attitude barrier	0.157	0.067	5.540	1	0.019*	1.170	1.027	1.334
Perceived facilitating factor								
Self-efficacy	0.087	0.037	5.657	1	0.017*	1.091	1.015	1.172

B= beta coefficient, SE= standard error, OR= odd ratio, df=degree of freedom*p<0.05, reference for dependent variable: low and moderate physical activity level.

be the predictor for physical activity level. Independent variables were selected based on univariate analysis using p-value <0.25 as the selection criteria before further analysis to determine the predictor for physical activity. A total of five independent variables were selected i.e. age (p=0.133), ethnicity (p=0.162), job category (p=0.131), exercise attitude barrier (p=0.003) and self-efficacy (p=0.009). The dependent variable was encoded as 1=high physical activity level while 0=low and moderate physical activity level. The variables were then selected based on the forward likelihood ratio (LR) method with no interaction found between the variables. The variance inflation factor (VIF) was 1.048, Hosmer Lemeshow Goodness of fit test, p-values=0.075, AUC was 0.657 (95% CI:0.57, 0.74), with p=0.001, the model was able to predict the variables correctly by 66%.

The results of multiple logistic analysis are shown in Table 5. The result showed that among the selected factors, exercise attitude barrier and self-efficacy were the factors that were able to predict the physical activity level in the logistic regression model. The odds ratio for exercise attitude barrier was 1.170, indicating that with every unit increase in exercise attitude barrier score; the respondents were 1.170 times (OR=1.17, 95% CI= 1.027, 1.334, p=0.019) more likely to have low or moderate physical activity level compared to high physical activity level. On the other hand, for every unit change in the self-efficacy score, the odds of the respondents to have low and moderate physical activity

level was 1.091 times (OR=1.091, 95% CI=1.015, 1.172, p=0.017).

DISCUSSION

It was found that the domestic physical activity domain reported the highest median interquartile of MET-minute/week score. The result implies that the respondents were engaging more physical activity by doing their domestic chores compared to their work, transportation and leisure activity. Domestic chores may include activities around the house such as housework, gardening, general maintenance work and caring for the family. A possible explanation is that the respondents may have engaged more in doing their routine daily domestic activities as they may have spent more time at home compared outside the house. This is particularly more relevant for those respondents that are married as they have more responsibilities and commitment towards their family.

Meanwhile, the results also showed that transportation physical activity has the lowest median, interquartile value for the MET-minute per week score. The low score in the transportation domain may indicate that the respondents did not engage in many physical activities in terms of transportation to travel from one place to another. One of the possible reasons is that the primary mode of transportation in the local setting is still by driving their car or motorcycle, which does not require much physical activity. Besides, lack of a safe environment for cycling or walking from home to

the workplace may also contribute to the low MET-minute per week score for the transportation physical activity domain (Sallis et al. 2012).

Nevertheless, in term of categories of physical activity level, majority of the respondents (56.4%) fell under moderate physical activity level, while 33.7% had a high physical activity level, and 9.8% had low physical activity levels. The presence of individuals with high PA level was more prevalent in the present study when compared to another similar study among university staff in Penisular Malaysia (18.5%)(Kamal & and Razak 2016) as well as the general adult population in Malaysia (25.4%) based on the National Health and Morbidity Survey 2015.

The frequently quoted barriers to participate in physical activity among the general adult population include reasons such as lack of health awareness, limited leisure time, budget constraints, and lack of sports amenities (Cheah 2011). While in a well-organised environment such as UNIMAS, where there is continuous health promotion program to promote physical activity with existing various exercise facilities including indoor and outdoor sports facilities, it eliminates the factors such as lack of awareness, budget constraints, and lack of exercise facilities leading to a higher proportion of respondents with high physical activity level in this study. However, there is room for further improvement in converting those from low and moderate physical activity level to high physical activity level, for more people to enjoy the health benefits of physical activity.

The multivariate analysis shows that the exercise attitude barrier is a predictor for physical activity level. Attitudes are defined as "individual value dispositions – in terms of approval or disapproval – toward a social object" (Eagly & Chaiken 1998). An individual attitude will determine whether they will react positively or negatively towards physical activity. A negative attitude is likely to impede behaviour changes towards physical activity, while a positive attitude may assist in successful behavioural change (Buchan et al. 2012). Attitudes can manifest on three levels: cognitive (beliefs, opinions), affective (emotions), and behavioural (actions) (Kopczynski et al. 2014).

In this study, analysis shows that an increase in every unit of exercise attitude barrier score will increase the likelihood of having low or moderate physical activity level by 1.170 times (OR=1.170, 95% CI= 1.027, 1.334, p=0.019). This result is concurrent to the current understanding whereby, an individual will more likely to engage in behaviour related in physical activity when they evaluate the behaviour in a positive attitude, while an individual that with a negative attitude towards physical activity is more likely to have a lower physical activity level (Iwasaki et al. 2017).

This above imply that the possible causes for the barrier among the respondents may include reasons such as not taking physical activity as the top priority in their daily life, not being motivated enough by perceiving doing physical activity as "boring",

and not perceiving physical activity as beneficial for them that may affect their exercise attitude towards physical activity.

In addition, the results also reported that self-efficacy was significantly associated with physical activity levels and are able to predict changes in health behaviour in physical activity among the studied population (OR=1.091, 95% CI=1.015, 1.172, p=0.017). Self-efficacy refers to one belief of being capable of carrying out any particular task which affects the functioning of an individual to produce specific results that are related to the events in their lives (Bandura 1977). Self-efficacy has been known as one of the critical determinants to mediate the behavioural changes in physical activity and increase the compliance with the participation of physical activity (McAuley et al. 2011). This is further supported by Iwasaki et al. (2017) where he found that self-efficacy was able to mediate between the number of personal goals related to physical activity with the respondent's physical activity level.

There were a few potential limitations for this study. Firstly, the measurement of physical activity level in this study was using the IPAQ based on self-reported response rather than direct measurement of physical activity. Therefore, the accuracy of reported physical activity largely depends on the respondent's interpretation. Nevertheless, the IPAQ was one of the well-recognised and standard tools to measure the physical activity level. Besides, as this was a cross-sectional study based on observational method,

a cause-effect relationship cannot be inferred.

In summary, a high proportion of UNIMAS staff engaged in certain types of physical activity. However, only 33.7% were categorised as highly physically active. This implies that a bigger proportion of the study populations will benefit in future interventions that can convert their behaviour from either physically inactive or minimally active to a highly physically active. Self -attitude towards exercise is the most significant perceived barrier that influences the physical activity level among the respondents, while having a high self-efficacy was found to be the most significant facilitating factor that affect stheir behaviour toward having a higher physical activity level.

Based on the IPAQ analysis, the study also found that the energy expenditure by MET-minute per week in the work and transportation domain was not as high as the domestic domain. This suggests the needs of interventions in the workplace that can encourage physical activity during the working time. Some examples of easy alternatives such as recommending using stairs instead of the lift or doing light exercise during break time in the office.

In addition, the university can also develop healthy policies related to physical activity in the workplace. For example, implementing a short duration of visual or audio assisted light exercise during meetings or conferences or by allowing the staff to take one to two hours off in a week to join any physical activity program

within the campus. The university may also consider giving incentives as an encouragement strategy in terms of monetary, certificates or other forms of incentives for the staff that participates in the program related to physical activity. Provision of conducive infrastructure such as long-distance cycling and roofed walking pathways within the campus can promote more staffs towards cycling or walking from one place to another within the campus which will be helpful in promoting active lifestyle.

CONCLUSION

In conclusion, the university staff of UNIMAS demonstrated a higher proportion of moderate physical activity level as compared to low and high physical activity level. However, carefully-designed strategies that intend to further improve the physical activity level of the university staff to a higher physical activity level are required to enjoy more significant health benefits while considering the specific barriers and facilitating factors to workplace physical activity that exist in this setting. The results in this study can be used for informed policy on physical activity and health interventions by the organisation and decision maker.

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