SHORT RESEARCH ARTICLE

A Survey on Physical Activity Monitoring (PAM) Among Malaysian Young Adults

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ABSTRACT

Background: Physical Activity Monitoring (PAM) is used effectively to encourage and promote an increased level of Physical Activity (PA) in young adults. The aim of this study was to determine the status of PAM and to identify the type of monitoring method being used among young adults in Malaysia is avoid health risks.

Methods: In this cross-sectional study, the data collection was based on a validated customized questionnaire carried out by sending it online via email, WhatsApp, and Facebook with an explanation of the research background, including the link of the survey questionnaires to the respondents.

Results: A total of 400 participants completed this survey and most participants were in the age range between 25-29 and 50.7% were males. Nearly half of the participants (61.0%) declared that they were monitoring their PA regularly and smartwatches (20.5%) are the most preferable type for PAM.

Conclusion: In this survey, it can be concluded that more awareness needs to be created on the importance of PAM among young adults as nearly another half of the participants surveyed that they were not monitoring their regular PA to follow a healthy lifestyle.

Keywords physical activity, monitoring methods, young adults, awareness, healthy lifestyle, public health

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INTRODUCTION

Physically inactive which accounts for 6% of all deaths.[1] Physical inactivity is a significant risk factor for non-communicable disease (NCD) which is estimated to cause approximately 21-25% of breast and colon cancers, 27% of diabetes mellitus and about 30% of heart diseases.[2] Therefore, regular physical activity is essential as it provides many benefits for health and well-being and has been shown to contribute to the prevention of many diseases[3–5] as well as being an important element in the treatment, rehabilitation, and management of many conditions.

WHO reports that regular physical activity in young adults improves psychological health, reduces depression and anxiety symptoms, enhances functional health, promotes self-expression, builds self-confidence, improves cognitive capacity, and may protect against life expectancy and mortality. In addition, it has also been stated that other healthier lifestyles (e.g. avoidance of tobacco, drug and alcohol use) are more readily adapted by physically active young adults. PAM used effectively to encourage and promote an increased level of physical activity in young adults since, meta-analysis has identified PAM induced young adults in reducing their weight[6], increasing in physical activity levels[7] and substantially reduce and preventing in being sedentary lifestyles. PAM based approaches have been shown to be feasible and successful in increasing the level of physical activity.[8,9]

Monitoring method widely used exercise devices, which could help young adults to monitor their regular physical activity. This is because evidences have identified several factors may lead many individuals to be physically inactive such as poor social support and lack of self-motivation.[10,11]

Based on the literature decreased level of PA may have resulted in sustained economic growth and rapid urbanization. This study is very important as it focuses mainly on PAM among Malaysian young adults because PAM among young adults is necessary in order to maintain appropriate levels of activity with an effect on health and well-being. This study's findings are expected to enhance our comprehension of PAM practice among young adults more precisely.

METHODOLOGY

Participants: This cross-sectional study recruited 400 participants from urban Malaysia, with an estimated sample size[12] of 384. The survey was developed in English and face validated using expert consensus and Google Forms. The questionnaire took 5-10 minutes to complete and provided a standardized approach, ensuring uniformity of questions for all participants. Both genders with age group form 20-44 were included. Children, older adults, and young adults who do not perform physical activity were excluded from the study.

Procedure: This study used an anonymous survey with nine sections and sixteen questions. Participants provided background information, informed consent, and personal data.

Section 1 provided background information about the research. In Section 2, participants were required to give their informed consent to indicate their agreement to participate. Section 3 consisted of a closed-ended question regarding the inclusion and exclusion criteria. Section 4 collected personal data such as age, gender, ethnicity, height, weight, and whether the participant was from Malaysia. Sections 5 and 6 focused on health-related issues, while Section 7 inquired about physical activity. Sections 8 and 9 explored methods used by young adults to monitor their physical activity, the benefits of monitoring, and the purposes behind it. Participants who answered "yes" in Section 8 continued to Section 9, while those who answered "no" ended their participation. The study was approved by the University Research Committee (INTI-IU/FHLS-RC/BPHTI/1NY12020/001) and conducted in accordance with the guidelines of the Helsinki Declaration. The study ensured the privacy and confidentiality of all information collected.

Statistical analysis: The data are represented in frequency and percentage. The analysis was performed using the IBM SPSS Statistics for Window (Version 26.0).

RESULTS

Table 1 shows the results of the descriptive statistics of the participant's demographic characteristics. The final sample consisted of 400 participants with equal participation from both genders.

Participants engaged in the following type of physical activity with highest percentage to the Jogging (46%) followed by Sports activities (41.5%) and lastly dancing (11.5%) followed by other physical activity such as Zumba, skipping and gardening (2.8%) as seen in Table 2.

Table 2 also shows that slightly more than half of the participants were performing their regular physical activity 3-5 days in a week (51.2%), followed by participants who were performing their regular physical activity 1-2 days in a week (40.0%) and lesser participants perform their physical activity 6-7 days in week (8.8%).

Table 3 shows more than half of the participants stated "yes" (61.0%) of themselves monitoring their regular physical activity, followed by participants who stated "sometimes" (20.5%) of monitoring their regular physical activity and participants who stated "no" (18.5%) for not monitoring their regular physical activity.

Table 1: Demographics profile of the participants

Variables	Participants (%)
Age	
20-24	123 (30.8)
25-29	147 (36.8)
30-34	64 (16)
35-39	38 (9.5)
40-44	28 (7)
Gender	
Female	197 (49.3)
Male	203 (50.7)
BMI	
Underweight	12 (3)
Normal	178 (44.5)
Overweight	172 (43)
Obese	38 (9.5)
Health condition	
Normal	347 (86.8)
Hypertension	15 (3.8)
Type 1 DM	2 (0.5)
Type 2 DM	4 (1)
Arthritis	2 (0.5)
Respiratory disorders	5 (1.3)
High cholesterol	12 (3)
Others	13 (3.3)

BMI: Body mass index, DM: Diabetes mellitus

Table 2: Type of physical activity and frequency on performing physical activity

Variables	Frequency (%)
Type of physical activity	
Jogging	184 (46)
Walking	144 (36)
Cycling	113 (28.2)
Running	71 (17.8)
Dancing	46 (11.5)
Swimming	81 (20.3)
Yoga	77 (19.3)
Sports activities	166 (41.5)
Resistance training	63 (15.8)
Others	11 (2.8)
Frequency of Performing physical activity	
1-2 days in a week	160 (40)
3-5 days in a week	205 (51.2)
6-7 days in a week	35 (8.8)

Table 3: Type of monitoring methods

Variables	Frequency (%)
Status of Physical activity monitoring	
Yes	244 (61)
No	74 (18.5)
Sometimes	82 (20.5)
Type of monitoring methods	
Self-reported activities	47 (11.8)
Direct observation	41 (10.3)
Accelerometers	7 (1.8)
Pedometers	20 (5)
Heart rate monitors	22 (5.5)
Armbands	24 (6)
Fitbit	82 (20.5)
GPS Sport Tracker	31 (7.8)
Health Pal Fitness	9 (2.3)
Google Fit	27 (6.8)
Running Distance Tracker	15 (3.8)
Strava Tracker	1 (0.3)
No response	74 (18.5)

Table 4: Awareness on the Purpose and benefit of PAM

Awareness	Frequency (%)
Purpose of PAM	
Reduce body fat	143 (43.9)
Maintain body weight	167 (51.2)
Improve muscle strength	150 (46)
Improve cardiovascular fitness	208 (63.8)
Reduce symptoms of arthritis	15 (4.6)
Others	6 (1.8)
Benefit of PAM	
Increase my energy level	231 (76.5)
Increase my confidence level	174 (57.6)
Feels more motivated	212 (70.2)
Feels a sense of accomplishment	161 (53.3)

PAM: Physical activity monitoring

The type of monitoring methods being used by the participants has been shown in Table 3. Therefore, table 5 shows that most of the participants monitor their regular physical activity using Fitbit.

Table 4 shows the results of the descriptive statistics of the participants who had stated their purposes in monitoring their regular physical activity. Improving their cardiovascular fitness has been the main purpose for more than half of the participants (63.8%). Table 6 describes the results on beneficial effect of physical activity monitoring among young adults. Most of the participants surveyed that physical activity monitoring helps them in increasing their energy level (76.5%).

DISCUSSION

The aim of this study was to determine the status of physical activity monitoring and identify the type of monitoring method being used among Malaysian young adults. In general, one of the types of physical activity that most of the participants usually perform to maintain their regular physical activity is jogging (46%), as it is a low-intensity type of physical activity. According to an article[13], joggers who are vigorously physically active have been shown to have the lowest levels of stress and life dissatisfaction. Thus, jogging might be their first preference to perform regularly as their physical activity, as they are likely to want to live a life free from depression and stress, which has important implications for health promotion.

Besides, about (41%) of participants preferred to perform sports activities as their regular physical activity. Which supported the idea that many diseases that are positively affected by physical activity or exercise appear later in life, continued participation in sports as an adult will reduce morbidity and mortality.[14] Furthermore, cycling (28.2%), swimming (20.3%), running (17.8%) and dancing (11.5%) are also other types of physical activity preferred to perform by the participants. Swimming is the fourth most popular and common physical activity in Unit-

ed States and a healthy way to get regular aerobic activity (US Census Bureau., 2012). The risk of developing chronic diseases can be minimized by just performing two and half hours of aerobic physical activity per week such as cycling, swimming and running.[15] Hence, comparing with an inactive individual swimmer have half the risk of death and many people reported they preferred to perform water-based exercise more than land-based exercise.[16] This can be due to reduced effort, joints and muscle pain during exercising in water than on land. Based on few studies, the results suggest that dancing provide beneficial effects such as by improving the cardiovascular parameters and also contribute to obesity prevention or reduction.[17–19]

According to the physical activity criterion recommended by center of disease control/American college of sports medicine (ACSM) for adults aged 18–65 should do at least 30 minutes of moderate-intensity aerobic physical activity for minimum five days per week or do at least 20 minutes of vigorous-intensity aerobic physical activity 3 days per week. The 61% of young adults participated in the study declared themselves that they were monitoring their regular physical activity. A recent study supported that a regular and accurate monitoring of physical activity in the free-living environment can provide important feedback of a person activity levels, which will eventually increase self-awareness on physical activity levels that will prerequisite for healthy decision making and long-term lifestyle change.[14]

Despite, a recent study has stated that mobile applications have the capacity to monitor behavior change as well and have been adopted and used successfully by young adults to improve physical activity levels.[20] Hence, many individuals still preferred to use Fitbit compared from other device to monitor their regular physical activity because Fitbit is a device that has the capabilities to monitor many functions together such as heart rate, calories burned, distance and time taken to complete the physical activity.

Physical activities are monitored with the purpose of improving their cardiovascular fitness level (63.8%) when surveyed the participants. According to world health organization (WHO) stated that with appropriate physical activity monitoring provides more beneficial effects to every individual such as in improving muscular and cardiovascular fitness, improves bone and functional health, reduce risk of certain health illnesses such as hypertension, coronary heart disease, stroke, diabetes, various types of cancer and depression. Therefore, based on the results that more than half of the participants (76.5%) stated that by monitoring their regular physical activity helps them in increasing their energy levels whereas about (70.2%) of participants claimed that they feel more motivated when they monitor their regular physical activity. Monitoring their own physical activity not only will also increases their confidence level and also help them to feel a sense of accomplishment when they have reached the targeted goals of their activity.

A cross sectional survey study with self-reported data would have limitations and sources of bias. This is because of the anonymous nature of this survey. Therefore, comparison of respondents with non-respondents was not possible. This study only focuses on small groups of sample size in an urbanization area to determine on the physical activity. Therefore, further studies should compare with large group and between male and female.

Conclusion

In conclusion, participants were aware of physical activity with jogging as the majority but have mixed participation in performing the physical activity per week according to the CDC/ACSM guidelines. This clearly shows that we need more awareness that to be created among the Malaysian that can eventually improve in physical activity among young adults and importance of physical activity monitoring to the young adult's population as this will give them to acquire more knowledge on physical activity monitoring and also increase on the awareness of physical activity monitoring. In addition, smartwatches also allow them to engage and interact with their peers and share their physical activity goals and behavior as well.

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