Knowledge, Attitude and Practice (KAP) Regarding Exercise Among IIUM Kuantan Campus Staff

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Abstract:

Introduction: Low levels of exercise can lead to obesity and weight gain and this may lead to a higher risk of heart disease and diabetes mellitus. Malaysia was ranked as number one of the fattest nations in South-East Asia and sixth in the Asia Pacific Region and low exercise activity in the Malaysian population could be one of the factors. **Objective:** This study was conducted to understand the knowledge, attitude and practice of exercise in a small Malaysian population and to assess the relationship between attitude and practice of exercise. **Method:** Data was collected through a structured questionnaire. The study population was IIUM staff from various kulliyyah at IIUM Kuantan campus. Subjects were recruited through email. A total of 64 subjects responded, gave their consent and answered the questionnaire. **Results:** There is a correlation between attitude towards physical activity and its practice (r=0.322, n=64, p=0.009). **Conclusion:** In general, people in IIUM Kuantan have adequate knowledge as 57% of the questions were answered correctly, a positive attitude towards exercise and a good practice of exercise but with some room for improvement.

Keywords: Knowledge, Attitude, Practice, Exercise, IIUM, Staffs

Introduction:

According to the World Health Organization (WHO), obesity and overweight are growing health problems around the world (WHO, 2018). The prevalence of obesity is showing an increasing trend throughout the years where it was estimated that 1.9 billion adults and 150 million children (5-19 years old) worldwide were obese in the year 2020 (World Health Organization, 2021). One of the major contributors to obesity is physical inactivity (Chan and Woo, 2010).

Weight gain occurs when our dietary intake levels are over the energy expenditure that is used daily by our body (Mozaffarain, et al., 2011). Excessive glucose that is not being used will be stored in the liver as glycogen and some of it will be converted into fatty acids to be stored as fat in the adipose tissues and other parts of our body (Alsharari et al., 2019). By expending the energy that has been consumed, it can affect weight change. Therefore, by exercising, weight loss can be achieved as it takes the fat out of the fat cells and converts it into energy for the muscles (Mozaffarain et.al, 2011). Exercising also burns up all those available excess sugars that are stored in the adipose tissue as fat. Moreover, exercising will not only remove fat but also build muscle (Thomas and Burns, 2016).

A study in the Malaysian population had shown that the prevalence of physical inactivity among adults (aged 18 years and above) was 24.6%, which is higher when compared to other countries in this region (Alias et al. 2022). Generally, the level of physical activity in the Malaysian population is associated with ethnicity, formal education, smoking status, income status and occupation among others (Nik-Nasir et al., 2022). Additionally, physical inactivity was mainly contributed to busy schedule, followed by exhaustion and lack of motivation as shown in a study done among the university students in Malaysia (Saleem et al. 2018). These factors might vary in different study population.

The question arises whether people's knowledge will modify their behaviour towards a particular activity, as for this study: exercise. Thus, this study aimed to understand the level of knowledge towards exercise in this study population and to evaluate whether knowledge contributes to attitude and their exercise routine. The data will help to create a programme that will be beneficial towards the study population. In addition, the data from this study also may reveal misconceptions or misunderstandings that may represent obstacles to the activities that would like to be implemented and potential barriers to behaviour change especially towards exercise.

Materials and Methods:

Ethical Approval

This study by approved by IIUM Research Ethical Committee (IREC) with a reference number of IREC 2020-BS(KAHS).

Subjects

The respondents in this study were academic and non-academic staff in IIUM Kuantan Campus. There were staff from the Kulliyyah of Allied Health Sciences, Kulliyyah of Medicine, Kulliyyah of Science, Kulliyyah of Pharmacy, Kulliyyah of Nursing and Kulliyyah of Dentistry. A convenience sampling method was applied where the staff from each kulliyyah (or faculty) were emailed and invited to participate in the study. Any IIUM staff working in Kuantan Campus were eligible for this study, except those with any history of physical abnormality or disability which impedes them from doing any exercise. This was mentioned in the consent form which the respondents must read and comply with before they give their responses to the questionnaire used in this study.

Questionnaire

A questionnaire to assess the knowledge, attitude, and practices on exercise was adapted from a study done by Afif et al. (2016). The questionnaire was divided into three sections i.e A, B, and C. Section A consists of sociodemographic variables. The questions included in this section were gender, age, educational level, marital status, chronic illness, gym memberships, recreation groups and societies, kulliyyah, mahallah, offices, centers, institutes and divisions of IIUM (K/C/D/I/O). Section B consists of questions regarding knowledge and attitude regarding exercise. It consists of common knowledge on exercise, such as the definition of exercise and the facts about exercise, while the attitude towards exercise taps perception, belief, and preferences regarding exercise. Responses in section B were categorised as true, false, and neutral. Section C included questions that provided data on the regularity of exercise and type of exercise, and also reasons for not exercising. The scoring system for positive statements for each section was as follows: totally disagree=1, disagree=2, neutral=3, agree=4, strongly agree=5. The questionnaire was distributed through the Google Forms, with a comment section at the end of the questionnaire. A

Gmail account was required before answering the questionnaire to prevent repeated answers. Upon receiving consent from the participants, the questionnaire was given to them through email to be filled up.

Questionnaire Validation

A qualitative pilot study was conducted with 30 participants from IIUM that consisted of lecturers and students to check for face validity. They were not included in the study population. The findings from the pilot study were used to improve the questionnaire to be better understood by the study subjects.

Data Analysis

The data were analysed using Statistical Package for Social Sciences (SPSS). The correlation test was used to determine the association between knowledge, attitude, and practice toward the benefits of physical activity. *p*-value of less than 0.05 was taken as a significant value.

Results:

The demographic characteristics of the respondents is shown in Table 1. A total of 64 subjects were recruited for this study. Out of the total subjects, 73.4% (n=47) were female and 26.6% (n=17) were male. The majority of the subjects were in the age group of 31 to 40 years old (57.8%), married (73.4%), Ph.D holder (75%), have no chronic illnesses (93.8%) and do not hold any gym membership (95.3%) or belong to any recreational group (84.4%).

Table 1: Demographic Characteristics of Respondents (n = 64).

Variables		n (%)
Gender	Female	47 (73.4)
	Male	17 (26.6)
Age	30 and below	6 (9.4)
	31 to 40	37 (57.8)
	41 to 50	18 (28.1)
	Above 50	3 (4.8)
Marital status	Married	47 (73.4)
	Single	15 (23.4)
	Widowed	1 (1.6)
	Divorced	1 (1.6)
Education	Degree	2 (3.1)
	Master	14 (21.9)
	PhD	48 (75)
Chronic Illness	No	60 (93.8)
	Yes	4 (6.3)
Gym membership	No	61 (95.3)
	Yes	3 (4.7)
Recreational group	No	54 (84.4)
	Yes	10 (15.6)

The respondent's knowledge on exercise is shown in Table 2 and 3. All subjects understood that exercise can help to combat diseases, improve moods, strengthen body endurance and stamina, relieve stress and yield a healthy body. However, 1.6% of the subjects were not sure whether exercise can make life happier and whether exercise can build a fit body. About 48.4% (n=31) of the subjects understood that adults with chronic conditions should do muscle strengthening exercises, whereas 18.8% (n=12) agreed that adults with chronic conditions should not do muscle strengthening exercise and the remaining 32.8% (n=21) were not sure. Around 51.6% (n=33) of the subjects agreed that adults should do at least 150 minutes a week of moderate exercise and the remaining 18.8% (n=12) and 29.7% (n=19) disagreed and were not sure about the statement, respectively. A total of 87.5% (n=56) subjects did not agree that exercise increases the chance of stroke and other circulation problems, whereas 7.8% (n=5) agreed and the remaining 4.7% (n=3) were not sure about the statement.

The majority of subjects disagreed that iron loss [48.4% (n=31)] and vitamin loss [54.7% (n=35)] occur after exercise. Whereas a lesser percentage agreed that iron [10.9% (n=7)] and vitamin [12.5% (8)] are lost after exercise and the remaining 40.6% (n=26) and 32.8% (n=21) were not sure about both

statements. Almost all subjects [78.1% (n=50)] agreed that significant injuries can occur from physical activity and 6.3% (n=4) were not sure about the statement and the remaining subjects or 15.6% (n=10) disagreed with the statement. Only 23.4% (n=15) of the subjects agreed that doing more than 300 minutes a week of moderate intensity exercise is more harmful than beneficial. On the other hand, 21.9% (n=14) and 54.7% (n=35) of the subjects did not agree and were not sure about the statement, respectively.

Table 2: Knowledge of participants regarding the benefits of exercise (n = 64).

Statements	n (%)		
	True	False	Not sure
Exercise helps to combat many diseases.	64 (100.0)	0 (0.0)	0 (0.0)
Exercise improves mood after doing some exercise.	64 (100.0)	0 (0.0)	0 (0.0)
Exercise can strengthen endurance and stamina.	64 (100.0)	0 (0.0)	0 (0.0)
Doing some exercise makes life happier.	63 (98.4)	0 (0.0)	1 (1.6)
Adults with chronic conditions should do muscle strengthening exercise.	31 (48.4)	12 (18.8)	21 (32.8)
Exercise is able to relieve stress.	64 (100.0)	0 (0.0)	0 (0.0)
Do some exercise can yield healthy body.	64 (100.0)	0 (0.0)	0 (0.0)
Exercise can build a fit body.	63 (98.4)	0 (0.0)	1 (1.6)
Adults should do at least 150 minutes a week of moderate intensity exercise.	33 (51.6)	12 (18.8)	19 (29.7)

Table 3: Knowledge of Respondents Regarding the Disadvantage of Exercise (n=64).

Statements	n (%)		
	True	False	Not sure
Exercise increases chance of stroke and other circulation problem.	5 (7.8)	56 (87.5)	3 (4.7)
There is iron loss after exercise.	7 (10.9)	31 (48.4)	26 (40.6)
There is vitamin loss after exercise.	8 (12.5)	35 (54.7)	21 (32.8)
Significant injuries can occur from physical activity.	50 (78.1)	10 (15.6)	4 (6.3)
Doing more than 300 minutes a week of moderate intensity exercise is more harmful than beneficial.	15 (23.4)	14 (21.9)	35 (54.7)

The attitude of subject towards exercise is shown in Table 4. The majority of the subjects disagreed that exercise is a stressful activity (42.2%), disagreed that exercise leads to exhaustion (29.7%), agreed that exercise is a way to have fun (54.7%) and strongly agreed that they exercise to improve health (62.5%), increase fitness level (62.%%), wanted to look good (53.1%) and wanted to control weight (51.6%). Furthermore, majority of the subjects disagreed that socializing is the reason they exercise (32.8%), disagreed that they will exercise only if there is a company (37.5%), strongly disagreed that exercise is only for overweight people (78.1%), disagreed of being afraid of getting injured during exercise (32.8%), disagreed that they are too busy to exercise (35.9%), agreed that people who don't exercise are lazy (31.3%), agreed that exercise is part of being a good Muslim (53.1%), agreed that they were happy with their physical condition (51.6%) and agreed that they were happy with their life (62.5%).

With regard to practice, the results showed most subjects exercise at least once a month whereas only 7.7% did not do any exercise. As shown in Table 5, almost equal number of subjects exercised 1-4 times a month (30.8%), 5-12 times a month (30.7%) and more than 12 times a month (29.2%). There was variation when it comes to the type of exercise conducted by the subjects (Table 6). The activity mostly preferred by the subjects was walking (20%), followed by jogging (18.5%), aerobic exercise (13.8%), multiple exercises (12.3%), workout (9.2%), and cycling (4.6%).

Table 4: Attitude of Respondents Regarding Exercise (n = 64).

Statements	n (%)				
	Strongly agree	Agree	Uncertain/ Neutral	Strongly Disagree	Disagree
Exercise is a stressful activity.	0 (0.0)	5 (7.8)	12 (18.8)	21 (32.8)	27 (42.2)
Exercise causes people to be exhausted.	4 (1.6)	24 (37.5)	7 (10.9)	10 (15.6)	19 (29.7)
Exercise is one of the ways for me to have fun.	23 (35.9)	35 (54.7)	4 (6.3)	0 (0.0)	2 (3.1)
I exercise because I want to improve my health.	40 (62.5)	22 (34.4)	2 (3.1)	0 (0.0)	0 (0.0)
I exercise because I want to increase my fitness level.	40 (62.5)	22 (34.4)	2 (3.1)	0 (0.0)	0 (0.0)
I exercise because I want to look good.	34 (53.1)	24 (37.5)	2 (3.1)	0 (0.0)	4 (6.3)
Socializing is the reason why I exercise	5 (7.8)	20 (31.3)	14 (21.9)	4 (6.3)	21 (32.8)
I exercise because I want to control my weight.	33 (51.6)	27 (42.2)	1 (1.6)	0 (0.0)	3 (4.7)
I will exercise only if someone is accompanying me.	5 (7.8)	6 (9.4)	8 (12.5)	21 (32.8)	24 (37.5)
Exercise is only for overweight people.	1 (1.6)	0 (0.0)	0 (0.0)	50 (78.1)	13 (20.3)
I am afraid of getting injured when I exercise.	2 (3.1)	18 (28.1)	11 (17.2)	12 (18.8)	21 (32.8)
I am too busy to exercise.	8 (12.5)	16 (25.0)	13 (20.3)	5 (7.8)	23 (35.9)
People who don't exercise are lazy.	5 (7.8)	20 (31.3)	15 (23.4)	10 (15.6)	14 (21.9)
Exercise is part of being a good Muslim	26 (40.6)	34 (53.1)	3 (4.7)	1 (1.6)	0 (0.0)
I am happy with my physical conditions.	4 (6.3)	33 (51.6)	13 (20.3)	2 (3.1)	12 (18.8)
I'm happy with my life	20 (31.3)	40 (62.5)	4 (6.3)	0 (0.0)	0 (0.0)

Table 5: Frequency of Exercising Per Month (n = 64)

Frequency of Exercising per month	n (%)
0	5 (7.7)
1-4 times	20 (30.8)
5-12 times	20 (30.7)
>12 times	19 (29.2)

Table 6: Type of Exercise Conducted by the Respondents (n = 64).

Type of Exercise	n (%)
Aerobic exercise	9 (13.8)
Cycling	3 (4.6)
High Intensity Interval Training	4 (6.2)
Jogging	12 (18.5)
Multiple exercise	8 (12.3)
Walking	13 (20.0)
Workout	6 (9.2)
Yoga	3 (4.6)
Others	6 (9.2)

Table 7: Factors that Could Prevent Exercise (n = 64).

Factors	n (%)
There is no safe place	4 (10.8)
Health problems	3 (8.1)
It involves a lot money	3 (8.1)
Lack of energy and tired	11 (29.7)
I have many responsibilities such as childcare and work	27 (73.0)
Other reasons	13 (35.1)

Table 8: Correlation between Attitude towards Exercise and Its Practice (n = 64).

	Frequency of Exercise	*p* value
Attitude towards exercise	$r = 0.322$	0.009

Discussion:

Knowledge can be defined as information that is organized, synthesized, or summarized to enhance comprehension, awareness, or understanding. It also has been defined as information combined with experience, context, interpretation, reflection, intuition, and creativity (Faizuniah, et al., 2013). Thus, knowledge in terms of knowing what is happening to the body such as understanding the mechanism of how fat is metabolised in the body due to exercise is imperative in this study. Most importantly, will this knowledge affect people's attitude and practice towards exercise?

Based on a sociological perspective, attitude is defined as the verbal expression or as an intention to act (Harris, 2011). Descriptive Psychology addresses behaviour as an attempt on the part of an individual to bring about some state of affairs either to effect a change from one state of affairs to another or to maintain a currently existing one (Bergner, 2011). As such, it is important to know whether attitude or perception also will drive our study population to exercise.

From the analysis, none of the subjects disputed the benefits of exercise towards health because the majority of them have a good knowledge of exercise. This is in line with the educational background whereby many of the subjects hold a master's degree or up to a PhD level. Even though the subjects were knowledgeable on the benefit of exercise, there were facts about exercise that most of them did not know. For instance, almost half of the subjects were not aware that adults with chronic conditions should still do muscle strengthening exercises or adults should do at least 150 minutes a week of moderate intensity exercise. This was based on WHO 2020 guidelines on physical activity and sedentary behaviour. Based on these guidelines, it was recommended that all adults (18-64 years) including those with chronic conditions and disability should conduct a regular exercise at least 150-300 min of moderate-intensity aerobic exercise or equivalent per week due to better health outcomes such as reduce mortality related with cardiovascular diseases, hypertension, diabetes mellitus and improve cognitive health and sleep among others (Bull et al. 2020)

Almost all of the subjects also did not realise that there are iron and vitamin loss after exercise and doing more than 300 minutes a week of moderate intensity exercise is more harmful than beneficial. The number of subjects that were not aware of these facts was higher compared to the previous study (Afif, et al., 2016). This implies that creating awareness on this matter is important to prevent harm following any exercise. It is also vital for the public to consume enough vitamins and iron in their daily diet while being physically active. With a balanced diet and staying active, a healthy body and mind can be yielded (Myers, 2003; Warburton, et al., 2006; Eather, et al., 2013).

The subjects had good general knowledge regarding the benefits of exercise in producing a quality life and it was reflected by their practise of exercising at least once a week. However, there are still too many subjects who did not understand the importance of exercising, regularly and doing it in a proper way. Thus, it is important to have adequate knowledge on

exercise to get the whole benefits from the physical activity (Fredriksson, et al., 2018).

Moreover, the majority of the subjects have a good attitude towards exercise. Most subjects dened exercise is a stressful activity as the majority of the them agreed that exercise is one of the ways to bring fun even though they know that exercise will lead to exhaustion. Previous studies had shown that three factors that motivate people to exercise namely for better health, fitness and body image (Kazem, et al., 2017). These could be the reasons that drive the subjects to exercise. Additionally, weight loss is also associated with exercise (Carla, 2017) and many of the subjects used that as their motivation. The subjects had a good attitude as they all agreed that exercise is not only for overweight people.

The good attitude of the subjects towards exercise was reflected in their practice where there was a significant positive correlation between attitude towards exercise and frequency of exercising. This indicates that subjects with more positive attitudes towards exercise will be more likely to be engaged with physical activity.

About the type of exercise preferred by the subjects, walking was the most preferred followed by jogging. This can be related to factors that deterred people to do exercise agreed by some of the subjects where exercise involves a lot of money and there is no safe place to do exercise. Walking and jogging are two activities that require money and do not cost a lot to take part. One just needs to have a good pair of shoes. These activities also can be done basically at many potentially safe places such as community parks and around the neighbourhood. Moreover, studies had shown that walking (reviewed Hanson and Jones, 2015) and jogging (Zhang, et al., 2019) have positive impacts on physical and psychological well-being and might surpass another type of so-called 'high-end' exercise.

Despite having good knowledge, attitude and practice among our study population, the frequency of exercising also varies greatly ie. from once a month to more than 12 times a month. Additionally, a small percentage of the subjects led sedentary lifestyles. The variation could be explained by reasons agreed by most subjects for not exercising. Many of them agreed that time constraints due to work and family demands made them unable to spend time for exercise. This could be a common reason for people to be sedentary because previous study also showed similar findings (Afif, et al., 2016). Apart from that, almost one-third of the subjects were afraid of getting injured during exercise. This may put them off from being physically active.

There were many programmes conducted at IIUM Kuantan campus that aimed to promote exercise to the staff. Maximal participants could be achieved if the program is devised based on the needs of staff or does not involve factors that will prevent them from joining. For example, a light exercise programme such as a fun run conducted during the school break over the weekend would be preferable. In summary, it is hoped that data from this study could give more insight into recruiting more participation from the staff in any exercise programme.

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