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SOCIODEMOGRAPHIC VARIATION AND ITS RELATION TO KNOWLEDGE ON PHYSICAL EXERCISE AMONG ACADEMIC STAFFS IN FACULTY OF MEDICINE, UITM, MALAYSIA

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Abstract

Regular physical exercise is very important to maintain physical and mental health. Many studies were done showing importance of exercise. It is important to differentiate between physical activity and physical exercise especially for academic staffs of medical faculty to have an adequate knowledge to be implemented to the students. Thus, we have conducted this study to assess knowledge of physical exercise among academic staff of medical faculty and to determine the association between knowledge of physical exercise and socio-demographic profile, to determine whether the knowledge of physical exercise is differed between Medical Degree (MD) graduated and non-MD graduated. A cross sectional study was conducted during a period of 9 months from January to September 2015 in Faculty of Medicine, UiTM. Total of 220 well-structured self-responded questionnaires were distributed to the academic staff's candidates. The questionnaires consist of two parts comprising socio-demographic profile and assessment of knowledge about physical exercise. The knowledge part consists of three domains that reflecting concept, type and recommended duration of physical exercise. Generally, only total of 22.6% respondents has good knowledge. Males showing significantly higher rate (47.7%) of good knowledge on concept of exercise than females (29.7%), while females were significantly has higher rate (55.9%) of good knowledge on types of physical exercise than males (36.4%). Similarly, married staffs also has a significantly higher rate (56.9%) of good knowledge on types of exercise compared to single/divorced staffs (34.8%). Clinical academic staffs has a significantly higher rate (13.1%) of good knowledge about recommended duration of physical exercise than preclinical academic staffs (2.1%). On the other hand, no significant differences between MD graduated or non-MD graduated staffs neither in overall knowledge, knowledge on concept, types or recommended duration of physical exercise. This study found that the knowledge on physical exercise among academic staffs of Faculty of Medicine, UiTM was poor. Males have s good knowledge on concept of physical exercise but females have a better knowledge on types of physical exercise as well as married staffs' on types of physical exercise. On the other hand, clinical academic staffs have more knowledge on recommended duration of physical exercise.

Keywords

Knowledge on Exercise, Exercise Concept, Types of Exercise, Durations of Exercise

1. Introduction

Regular physical exercise and physical activity is very important to maintain the physical and mental health in an individual. It is important to differentiate between physical activity and physical exercise. Physical activity is defined as any body movement which result by the contraction of skeletal muscle that increases energy expenditure above a basal level while exercise is a form of physical activity that is planned structured, repetitive, and performed with the goal of improving health or fitness (Caspersen, Powell, & Christenson, 1985). In short, exercise is a subset of physical activity but physical activity is not an exercise.

According to American College of Sports Medicine (ACSM) exercise guidelines, four types of physical exercises are; cardiorespiratory exercise, resistance exercise, flexibility exercise and neuromotor exercise as imperative to maintain and improve health (Garber et al., 2011). Cardiorespiratory or also known as aerobic exercise is referred to exercise that involves or improves oxygen consumption by the body like brisk walking, running, cycling, rope jumping, and swimming. Resistance exercise, involves the action of body muscle to work or hold against an applied force or weight. This type of exercise includes weight lifting. Flexibility exercise involves action to improve joint range of motion like stretching. Neuromotor exercise mainly focuses on flexibility, core strength and balance with an emphasis on connecting the mind to the physical work of the body. Example of neuromotor exercises are Yoga and Tai Chi. ACSM also recommends healthy adults to engage in at least 150 minutes for moderate-intensity, 75 minutes for vigorous-intensity or a combination of two of physical exercise each week (Garber et al., 2011).

A population-based survey was done in America on 1979 has found that majority of the public has excellent knowledge about the importance of physical exercise but a handful on them are still unclear about the proper types or amounts (Harris, Louis, & Associates, 1984). Moreover, poor knowledge about the physical exercise could bring to physical inactivity (Roth & Stamatakis, 2010). Interestingly, physical inactivity is the fourth leading risk factor for mortality around the world (WHO, 2010). Indeed, regular physical exercises are important to the physical and mental health of almost everyone, including older adults. It boosts the immune system, and helps in preventing the "diseases of affluence" such as, cardiovascular disease, Type 2 diabetes, obesity as well as premature death (Stampfer, Hu, Manson, Rimm, & Willett, 2000). There is a body of evidence regarding the effectiveness of regular physical exercise in the primary and secondary prevention of several chronic diseases (Duncan, Hall, Wilson, & Jenny, 2010). Interestingly it has been proven medically that people who do regular physical exercises have a

lower risk of up to; 50% type 2DM, 50% colon cancer, 35% coronary heart disease and stroke, 20% breast cancer, 30% early death, 83% osteoarthritis, 30% depression, 30% dementia (Irwin, 2004). In addition, a study reported that the medications used for diabetes, hypertension, and increases in low-density lipoprotein (LDL) have an inverse relationship with vigorous physical exercise (Duncan et al., 2010).

Individuals with higher level of education were more knowledgeable about the health benefits of exercise (Giardina et al., 2009). Thus it was expected that university academic staffs particularly in medical faculty and those working in clinical setting to have an awareness of the importance of physical exercise as well as possessing an outstanding knowledge regarding the physical exercise in terms of concept, types, intensity and its recommended duration of physical exercise as the medical personnel are considered to be the center of information on health and the frontline of community preventative health services. Interestingly a study reported that physicians practicing exercise lesser compared to teachers (Chamber & Belcher, 1993). As the academic staffs in medical faculty are both teachers and physicians therefore we hypothesized that there is a variation in their knowledge related to physical exercise amongst academic staff. Therefore, the objectives of this study are as follow;

- To assess the knowledge among the academic staffs of Faculty of Medicine
- To determine the relationship between knowledge of physical exercise and socio demographic characteristics
- To determine the relationship of academic certificate (Medical or non-Medical degree) towards knowledge of physical exercise.

2. Methodology

Before embarking the main project, a pilot study was carried out among staff nurses working in Specialist Medical Centre of Universiti Teknologi Mara to test the validity of the questionnaire. By using PS Software version 3.9.14, the estimated sample size was 227 participants. Considering 10-20% as a defaulter rate, the total sample size will be 250. Unfortunately, the whole academic staff in Faculty of Medicine, UiTM was only 230 repondent. Moreover 10 academic staffs were excluded from this study as they are either supervisors (2 persons) or ethics committee members (8 persons). Therefore, the final sample size that should be collected is 220 individuals. A cross sectional study was conducted during a period of 9 months from January to September 2015. Ethical approval was obtained from the Faculty of Medicine, UiTM. All the respondents were ensured that their information and participation are

confidential. Distribution of 220 well-structured self-responded questionnaires with consent form were carried out. A well-structured questionnaire comprised of two parts. The first part covered the socio-demographic (gender, age, race, marital status, education certificate, department of medical field) and medical background information. The second part of the questionnaire involving both close-ended and open-ended items which comprised of three sets of domains to assess the respondents' knowledge towards exercise.

First domain related to the concept of exercise (What is exercise). One set of answers given containing eight choices (running, jogging, squash and pumping iron, cleaning, walking, climbing stairs, and shopping) that is related or not related to physical exercise. Only 4 choices were correct. This is to determine whether the respondents were able to differentiate between physical exercise from physical activity thus requested to choose one or more choices which related to physical exercise to obtain a mark. We gave one mark for each correct choice. Therefore, maximum marks were 4 while minimum mark was 0 with the cut- off point, 2.

In the second domain related to the types of exercise, which consists of close-ended and open-ended question. Four types of exercise (cardiorespiratory, resistance, flexibility and neuromotor) were listed in the questionnaire to identify whether the respondent have ever heard about these types. The answer will be yes or no. In addition, the respondent was requested to give an example for each type of physical exercise he/she knew. One mark will be given if they knew the type only, while two marks were given if they knew the types and gave the correct example. Therefore, maximum marks will be 8 and 0 is the minimum with a mean of 4 marks. Thus, 4 were used as a cut-off point to categorize the respondent whether he/she has good knowledge or poor knowledge (≥4. <4 respectively)

The last domain of knowledge towards physical exercise is about the types of physical exercise intensity (vigorous, moderate and combination) and the recommended duration (minutes/week) of each type. The respondent will match each of the three types of physical exercise intensity with the correct recommended duration. One mark for each correct matching answer were given. Maximum marks will be 3 with minimum of 0. Cut-off point is 2 giving ≥2 categorized as good knowledge while <2 for poor knowledge.

Total maximum marks for overall knowledge of physical exercise was 15 and minimum was 0. The mean will be 7.5. Therefore, we considered 8 marks as a cut-off point to categorize the respondents on having good knowledge (≥8) or poor knowledge (<8) of physical exercise. Data was entered and analyzed using Statistical Package for Social Science (SPSS) version 22.0. Descriptive analysis (frequency, percentage and mean) was done on socio-demographic and

medical background information and the scoring for knowledge on exercise. Chi-square was used to examine the association between socio-demographic characteristics and knowledge. $P < 0.05$ was used as the significant level. Most of the sociodemographic profile as well as medical background information were categorized into two groups ; age (25-44, 45-72), race (Malay, non-Malay), academic certificate (MD or non-MD), department of medical field (preclinical and clinical) and BMI (underweight/normal, overweight/obese).

3. Results

Out of 220 questionnaires distributed to the academic staffs, only 155 were returned in a complete status of answering giving 70.5% response rate. As shown in Table 3.1, the majority were Malay (87.7%) and almost three quarters of the participant (71.6%) were female. Most of the respondents (70.3%) were married while the other 29.7% were either single or divorced. Most (90.3%) of the academic staffs were graduated as Medical Degree (MD). Higher rate (69.0%) of the respondent were working in clinical. Majority of the respondent (80.0%) were healthy. On the other hand, 20.0% were having one or more chronic disease such as hypertension, Diabetes Mellitus, joint disease and asthma.

The respondents' mean age were 36.1 ± 9.074 ranging from 25 to 72 while BMI were

24.80 ± 4.796 ranged from 15.61 until 41.8. More than half (52.9%) of the respondents' BMI were within normal range, more than one quarter (27.7%) were overweight, 14.3% were obese and the least of them (5.2%) were underweight.

Table 3.1: *Distribution of age categories, ethnicity, marital status, department of medical field, medical illness and body mass index (BMI) of the respondents*

Characteristic	N (%)	
Age : <45 ≥45	134 (86.5) 21 (13.5)	Mean = 36.1 ± 9.074 Range = 25-72
Race : Malay Non-Malay	136(87.7) 19(12.3)	
Marital status : Single/Divorced Married	43 (29.7) 109 (70.3)	
Department of medical field : Preclinical Clinical	48 (31.0) 107 (69.0)	
Medical certificate : MD-graduated Non-MD graduated	140 (90.3) 15 (9.7)	
Medical Illness : Yes No	31 (20.0) 124 0.0)	
BMI : Underweight / Normal Overweight / Obese	90 (58.1) 65 (41.9)	Mean = 24.80 ± 4.796 Range = 15.61 – 41.8

3.1 Knowledge on Exercise

To investigate the knowledge of physical exercise among academic staffs of medical faculty, three topics were concentrated. Almost two third (65.2%) of the respondent unable to differentiate between physical exercise and physical activity as only one third (34.8%) gave correct answers. Regarding Table 3.2, the highest correct answer (63.9%) were given to jogging. On the other hand, running, pumping iron and squash upon friend's invitation were chosen 27.1%, 25.2% and 18.1% respectively. The total mean score was 1.35 ±1.307.

In regards of types of exercise, most of the respondents know about the cardiorespiratory, resistance and flexibility exercise (82.6%,61.3% and 60.6% respectively). Only one third (36.1%) of the respondents know about the neuromotor physical exercise. Unfortunately, about less than half (44.5%) gave correct example for cardiorespiratory. Overall, 50.3% of respondents answered correctly while 49.7% answered incorrectly with the total mean score for types of physical exercise was 3.32 ±2.2 which is much less than cut-off point.

Only 9.7% of respondents answered correctly regarding recommended duration of physical exercise, while majority (90.3%) answered incorrectly with total mean score of 0.54 ± 0.667 which also less than cut-off point. They have mentioned the incorrect duration (96.8%, 79.4%, 69.7%) for vigorous, moderate, and combination respectively.

Generally total knowledge of physical exercise (concept, types and recommended duration), 22.6% had good knowledge with the majority (77.4%) had poor knowledge on exercise. Relationship of knowledge regarding concept, types and recommended duration of physical exercise with socio-demographic profile was investigated. It was classified whether one having good knowledge or poor knowledge for each domain.

Table 3.3 shows the relationship of sociodemographic profile with knowledge on concept of physical exercise. Male (47.7%) is significantly ($x^2=4.496$ $p=0.041$) having higher rate of good knowledge than female (29.7%). Respondents aged less than 45 (35.1%), non- Malay (36.8%), MD graduated staffs (35.0%), clinical academic staffs (36.4%), medical illness (38.7%) and overweight/obese (36.9%) having a better knowledge than their counter groups. However, none of other sociodemographic profile except gender was significant.

High percentage of the female (55.9%) significantly ($x^2=4.789$ $p=0.033$) having better knowledge than man (36.4%) as well as married respondents (56.9%) showed significantly ($x^2=6.319$ $p=0.014$) better knowledge than single/divorced respondents (34.8%) in regards of knowledge on types of exercise. More than half of the respondent aged below 45 (50.7%) had better knowledge than the respondent aged above 45 (47.6%). However, the difference is not

significant (x2=0.071 p=0.819). Similarly, no significant associations were detected between race, academic certificate, department of medical field, medical illness and BMI.

Regarding recommended durations of exercise, clinical academic staffs (13.1%) had a significantly (x24.588 p=0.038) higher rate of good knowledge than preclinical academic staffs (2.1%). Other sociodemographic characteristics having no significant association eventhough it was found that respondents aged below 45, male, Malay, single/divorced respondents, MD graduated staffs, have medical illness and overweight/ obese having a better knowledge compared to their counter group.

Lastly for overall knowledge of exercise, the results shows that respondents aged more than 45 years old had slightly better knowledge (33.3%) compared to respondents aged below 45 years old (20.9%). Male and female had almost about the same knowledge with 22.7% and 22.5% respectively while Malay had better knowledge (23.5%) compared to other races (15.8%). Those who are married (24.8%) had better knowledge than those who were single/divorced (17.4%). Surprisingly, academic staffs with educational type of MD graduated (21.4%) had less knowledge than those non-MD graduated (33.3%). Similarly for academic staffs in preclinical years had slightly better knowledge (22.9%) than academic staff in clinical (22.4%). There were no difference in knowledge status between those having medical illness or not having one (22.6%). Overweight/obese class had slightly better knowledge (26.2%) compared to those who were underweight/normal class (20.0%). However, none of these findings were significant.

Table 3.2: *Knowledge on concept, types and recommended durations of exercise*

Concept of exercise			
Questions			**N (%)**
Running in marathon competition			42 (27.3)
Jogging on weekend or weekday			99 (64.3)
Cleaning around the house for 4 hours			73 (47.4)
Squash upon friend's invitation			28 (18.2)
Walking around			105 (68.2)
Climbing stairs instead of taking elevator			98 (63.6)
Pumping iron every other day to improve muscle strength			39 (25.3)
Shopping			50 (32.5)
Types of exercise			
Types of exercise	**Have knowledge (N(%))**	**No knowledge (N(%))**	**Correct example (N(%))**
Cardiorespiratory	128 (96.2)	27 (3.8)	69 (53.9)
Resistance	95 (71.4)	60 (28.6)	37 (38.9)
Flexibility	94 (70.7)	61 (29.3)	35 (37.2)
Neuromotor	48 (36.1)	107 (63.9)	9 (18.75)
Recomended durations of exercise			
Recommended exercise	**Right answer (N (%))**	**Wrong answer (N (%))**	

Vigorous	5 (3.2)	150 (96.8)
Moderate	32 (20.6)	123 (79.4)
Combination	47 (30.3)	108 (69.7)

Table 3.3: *Relationship of socio-demographic profile with knowledge on concept, recommended and total knowledge of exercise*

Concept of exercise						
		Total (N(%))	**Good N(%)**	**Poor N(%)**	**(x^2)**	**P value**
Age	25-44	134 (86.5)	47 (35.1)	87 (64.9)	0.024	1.000
	45-72	21 (13.5)	7 (33.3)	14 (66.7)		
Gender	Male	44 (28.4)	21 (47.7)	23 (52.3)	4.496	**0.041**
	Female	111(71.6)	33 (29.7)	78 (70.3)		
Race	Malay	136 (87.7)	47 (34.6)	89 (65.4)	0.038	1.000
	Non Malay	19 (12.3)	7 (36.8)	12 (63.2)		
Marital status	Single / divorced	46 (29.7)	16 (34.8)	30 (65.2)	0.000	1.000
	Married	109 (70.3)	38 (34.9)	71 (65.1)		
Academic certificate	MD Graduate	140 (90.3)	49 (35.0)	91 (65.0)	0.017	1.000
	Non-MD Graduate	15 (9.7)	5 (33.3)	10 (66.7)		
Department of medical field	Preclinical	48 (31.0)	15 (31.3)	33 (68.7)	0.394	0.587
	Clinical	107 (69.0)	39 (36.4)	68 (63.6)		
Medical illness	Yes	31 (20.0)	12 (38.7)	19 (61.3)	0.256	0.675
	No	124 (80.)	42 (33.9)	82 (66.1)		
BMI	Underweight/Normal	90 (58.1)	30 (33.3)	60 (66.7)	0.214	0.733
	Overweight/obese	65 (41.9)	24 (36.9)	41(63.1)		
Types of exercise						
Age	25-44	134 (86.5)	68 (50.57)	66(49.3)	0.071	0.819
	45-72	21 (13.5)	10 (47.6)	11 (52.4)		
Gender	Male	44 (28.4)	16 (36.4)	28 (63.6)	4.789	**0.033**
	Female	111(71.6)	62 (55.9)	49 (44.1)		
Race	Malay	136 (87.7)	69 (50.7)	67 (49.3)	0.076	0.811
	Non-Malay	19 (12.3)	9 (47.4)	10 (52.6)		
Marital status	Single/Divorced	46 (29.7)	16 (34.8)	30 (65.2)	6.319	**0.014**
	Married	109 (70.3)	62 (56.9)	47 (43.1)		
Academic certificate	MD Graduate	140 (90.3)	70 (50.0)	70 (50.0)	0.060	1.000
	Non-MD Graduate	15 (9.7)	8 (53.3)	7 (46.7)		
Department of medical field	Preclinical	48 (31.0)	23 (47.9)	25 (52.1)	0.161	0.730
	Clinical	107 (69.0)	55 (51.4)	52 (48.6)		
Medical illness	Yes	31 (20.0)	12 (38.7)	19 (61.3)	2.090	0.165
	No	124 (80.0)	66 (53.2)	58 (46.8)		
BMI	Underweight /Normal	90 (58.1)	48 (53.3)	42 (46.7)	0.778	0.418
	Overweight / Obese	65 (41.9)	30 (46.2)	35 (53.8)		
Recommended durations of exercise						
Age	25-44	134 (86.5)	14 (10.4)	120 (89.6)	0.671	0.695

	45-72	21 (13.50	1 (4.8)	20 (95.2)		
Gender	Male	44 (28.4)	6 (13.6)	38 (86.4)	1.102	0.366
	Female	111 (71.6)	9 (8.1)	102 (91.9)		
Race	Malay	136 (87.7)	15 (11.0)	121 (89.0)	2.320	0.218
	Non Malay	19 (12.3)	1 (5.3)	18 (94.7)		
Marital status	Single / divorced	46 (29.7)	5 (10.9)	41 (89.1)	0.106	0.770
	Married	109 (70.3)	10 (9.2)	99 (90.8)		
Academic certificate	MD Graduate	140 (90.3)	14 (10.0)	126 (90.0)	0.172	1.000
	Non-MD Graduate	15 (9.7)	1 (6.7)	14 (93.3)		
Department of medical field	Preclinical	48 (31.0)	1 (2.1)	47 (97.9)	4.588	**0.038**
	Clinical	107 (69.0)	14 (13.1)	93 (86.9)		
Medical illness	Yes	31 (20.0)	4 (12.9)	27 (87.1)	0.461	0.502
	No	124 (80.0)	11 (8.9)	113 (91.1)		
BMI	Underweight/Normal	90 (58.1)	8 (8.9)	82 (91.1)	0.153	0.786
	Overweight/obese	65 (41.9)	7 (10.8)	58 (89.2)		
Total knowledge						
Age	25-44	134 (86.5)	28 (20.9)	106 (79.1)	1.607	0.260
	45-72	21 (13.5)	7 (33.3)	14 (66.7)		
Gender	Male	44 (28.4)	10 (22.7)	34 (77.3)	0.001	1.000
	Female	111 (71.6)	25 (22.5)	86 (77.5)		
Race	Malay	136 (87.7)	32 (23.5)	104 (76.5)	0.571	0.568
	Non Malay	19 (12.3)	3 (15.8)	16 (84.2)		
Marital status	Single / divorced	46 (29.7)	8 (17.4)	38 (82.6)	1.008	0.402
	Married	109 (70.3)	27 (24.8)	82 (75.2)		
Academic certificate	MD Graduate	140 (90.3)	30 (21.4)	110 (78.6)	1.098	0.331
	Non-MD Graduate	15 (9.7)	5 (33.3)	10 (66.7)		
Department of medical field	Preclinical	48 (31.0)	11 (22.9)	37 (77.1)	0.004	1.000
	Clinical	107 (69.0)	24 (22.4)	83 (77.6)		
Medical illness	Yes	31 (20.0)	7 (22.6)	24 (77.4)	0.000	1.000
	No	124 (80.0)	28 (22.6)	96 (77.4)		
BMI	Underweight/Normal	90 (58.1)	18 (20.0)	72 (80.0)	0.818	0.437
	Overweight/obese	65 (41.9)	17 (26.2)	48 (73.8)		

4. Discussion

In spite of response rate obtained which was 70.5% ,it was higher than a study reported on 2014 and 2001 of 35.2% and 10% respectively, this rate was somehow still considered low (Cummings, Savitz, & Konrad, 2001; Kassam et al., 2014). This result could be attributed due to time restriction and work demand (Timothy, McFarlane, & Cook, 2008). It might also be the reluctance of participation due to lack of knowledge among academic staffs of medical faculty about physical exercise.

It was found that our respondents were having poor overall knowledge (77.4%) about physical exercise which is contradicted to a study done among New York Caribbean Hispanic women (Giardina et al., 2009). However, this finding is concordance to several authors which also found a higher rate of poor knowledge regarding physical exercise (Roos, 2014; Weiler, Feldschreiber, & Stamatakis, 2012). This may be explained that doctors were not taught and trained as a whole as exercise medicine was not yet taught as compulsory subject in most of the medical school (Cullen, Mcnally, Neill, & Macauley, 2000).In agreement with several studies, our study detected that there was no significant association between overall knowledge of physical exercise; age, gender and marital status respectively (Awotidebe et al., 2014; Knox, Esliger, Biddle, & Lauren, 2013; Miller & Brian, 2007).

Interestingly, our study found the overall knowledge in about three quarter of MD-graduated respondents were poor whether they work in preclinical or clinical setting. This finding is supporting other studies done which found that doctors were unable to prescribe or advise patient with necessary exercise prescription due to lack of knowledge (Weiler et al., 2012). It has also been reported that only 9% of medical students were able to define the required exercise recommendation (Lobelo, Duperly, & Frank, 2008). Our study found that overweight individuals possessed higher rate of good knowledge (26.2%) about physical exercise than their counter group (20.0%). This result could be explained that the more knowledge a person has of nutrition and exercise, the more likely they are to have a healthy body mass index (Miller & Brian, 2007). In this case, we can consider that overweight respondent might try to seek further knowledge on exercise in order to improve their condition.

More than two thirds (65.2%) of academic staffs in medical faculty were unable to differentiate between physical exercise and physical activity and chose incorrect example regarding physical exercise. Contradicting to a study done among American adults' male, our study found that all of the sociodemographic profile; age less than 45, male, non-Malay, MD-graduated , working in clinical field, having no chronic illness and overweight/obese shows higher rate of ability to differentiate between physical activity and physical exercise than their counter group (Morrow, Krzewinski-Malone, Jackson, Bungum, & FitzGerald, 2004).

However, these variations were not significant except for gender where male (47.7%) demonstrated significantly higher rate of knowledge on concept of exercise compared to female (29.7%). This findings is similar as found among American male adults which also found to have a better knowledge in identifying physical exercise (Morrow et al., 2004). These findings could be explained that male are more prone to involve in practicing physical exercise than female as

reported by several authors (Anand, Tanwar, R, GS, & GK, 2011; Richards, 1999). Interestingly, almost two thirds of population giving incorrect answer considering walking around as a physical exercise found similar to a study done in Bangkok (Dajpratham & Chadchavalpanichaya, 2007).

Regarding the four types of exercise and ability to state respective examples, unfortunately the overall mean score (3.32±2.2) was less than cut off point and only half of the respondents (50.3%) were able to state the correct answers. Cardiorespiratory exercise giving the highest correct example (44.5%). On the other hand, only 5.8% of the respondents gave a correct example for neuromotor exercise. First of all, 86.1% have heard about cardiorespiratory types of exercise while only 36.1% acknowledged the neuromotor types of exercise. This is due to most of them were either practicing or observed somebody practicing cardiorespiratory exercise such as aerobic, running, jogging, rope jumping, cycling, sports like football, badminton, squash and others which is common types of exercises while neuromotor like yoga and tai chi has a very minimum prevalence of population particularly young adults practicing this types of exercise. This could be explained as several authors stated that this exercise is useful as part of comprehensive exercise program especially for older persons as it able to improve balance, agility, muscle strength as well as reducing the risk of falls that frequently happen in older communities(Nelson et al., 2007). Other than that, the possibility of the respondents might have known about the yoga and tai chi but never knew this types of exercises were categorized as a neuromotor also present. Thirdly, most of cardiorespiratory exercises were recommended by the physician but not neuromotor exercise. Particularly, we found that those with medical illness has higher knowledge on concept of exercise. There is significantly higher rate of female (55.9%) and married (56.9%) respondents who gave correct answers regarding types of exercise. This may be due to that female participating in exercise more than male because female experience sense of pride associated with knowledge and practice of exercise (Al-Kubaisy, Mariam, Zaliha, & Nairan, 2015). Additionally, female is more interestested in their body figure thus they try to seek for more knowledge about physical exercise in order to maintain the body figure (Al-Kubaisy, Mariam, Zaliha, & Nairan, 2015). Similarly, married respondents exhibit a significantly higher rate of knowledge on types of exercise. This is most probably attributed that those who are married usually titled to have more knowledge in order to connect with the family and to educate the family. Our study found that married respondents has higher knowledge than unmarried which contradict to other study (Al-Kubaisy, Mariam, Zaliha, Nairan, & Mazlin, 2015).

Other study found that below 50% of his participants have knowledge regarding intensity and recommended duration of physical exercise (Zenko & Ekkekakis, 2015). This is in concordance with our results which found that most of the respondents cannot give the correct answers. Comparing our results which is much lower (20.6%) than previous study (67.4%), their respondents were able to give the correct answer (Zenko & Ekkekakis, 2015). This could be explained as the study was done among certified exercise professionals. However, our study found that those who work in clinical area having higher rate of good knowledge (13.1%) regarding intensity and recommended duration of physical exercise. This is also in agreement with previous study which stated that there is a relationship between primary job role with knowledge of recommended duration of physical exercise (Zenko & Ekkekakis, 2015). On the other hand, none of the other socio-demographic profiles showed significant association with knowledge of recommended duration of physical exercise which is also concordance with the same study (Zenko & Ekkekakis, 2015).

5. Conclusion and Recommendation

The total overall knowledge of the respondents in this study found that the knowledge on physical exercise among academic staffs of Faculty of Medicine, UiTM was poor as 77.4% having a total insufficient knowledge. It was found that 68.2% chose an incorrect example related to physical exercise giving an idea that the respondents were unable to appreciate the difference in concept between physical activity and physical exercise. Most of the respondents knew about the cardiorespiratory exercise (96.2%) while least of them (36.1%) knew about the neuromotor exercise regardless the ability to state the examples showing the lack of knowledge regarding different types of physical exercise while majority of the respondents could not appreciate the proper durations for each types of physical exercise intensity. In relationship with socio-demographic profile, males had a better knowledge on concept of physical exercise but females had a greater knowledge on types of physical exercise as well as married respondents. On the other hand, clinical academic staffs has better knowledge on recommended duration of physical exercise. Overall knowledge of three quarter of MD-graduated respondents were poor. Eventhough MD graduated staffs has better knowledge than its counter group in relationship with types and recommended duration of exercise, however none of this findings were significant.

In order to improve the knowledge of physical exercise among academic staffs of medical faculty, a few steps could be taken into account. Exercise medicine should be

implemented into the curriculum of medical school in order to create better quality doctors that have solid knowledge towards physical exercise. Other than that, a course that aims to deliver a knowledge on exercise, its benefits towards health condition and a proper way of how physical exercise should be done.

6. Limitations

The knowledge of the respondents is assessed based on concept, types and duration which is cannot be a true determination of good knowledge. The respondents might also be hesitant to participate in such study as they are shy of their level of knowledge regarding exercise that was expected to be high among academic staffs of medical faculty. The sample size of this study was also small and not comparing medical faculty and another faculty to assess their level of knowledge. However, one of this study's strength as it may be one of the first study that investigate knowledge of physical exercise among academic staffs of medical faculty.

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