

RESEARCH ARTICLE

The relationship between physical activity level with depression, anxiety, and stress among full-time housewives in Selangor, Malaysia

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Abstract:

Physical activity was suggested to improve mental health. However, limited study was done to examine the relationship, especially among housewives. The aim of this study was to determine the relationship between physical activity level with the depression, anxiety, and stress among full-time housewives. A cross-sectional study was conducted among 297 respondents. The respondents were obtained by purposive sampling method. Socio-demographic, DASS-21 and SQUASH questionnaires were administered to the respondents. It was found that 50.5% of respondents were overweight. Level of MET/min of all of the respondents were reported low. The study indicates a high prevalence of housewives who have anxiety (45.1%) followed by stress (39.4%) and depression (34.7%). There is no relationship found between physical activity levels with mental health. As conclusion, effort to reduce sedentary behavior together with improving mental health among housewives is crucial.

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1. INTRODUCTION

Physical activity can prevent mental disorders [1]. Participating in physical activity was likely to improve positive mood, enhance satisfaction, increase confidence and encouraging good health [2]. Nowadays, people around the world had to deal with common mental illnesses such as depression, anxiety, and stress. Additionally, psychological health can change the way people think, feel and act [3]. Mental health problems have occurred in people with intense emotions associated with other problems such as personal issues, job, or family issues [4]. Moreover, long-term mental disorder can lead to depression, anxiety, and other health problems such as obesity, cholesterol, and hypertension [5].

1.1 Definition

Physical activity was referred to either fitness or exercise [6]. Physical activity, as well as sports and other tasks were included playing, working, rest, and performed household chores [7]. Physical activity was necessary to improve and maintain health [8].

Poor mental health has been described as low self-esteem, mood disturbance, and lack of self-confidence, sleep problem and social isolation [9]. Depression was a mood disorder in which it can affect influence the thought, emotion, and social lives of people [10]. Meanwhile, anxiety was an emotional state associated with temporary changes of mental state that causes people to experience unease, and unwanted physical symptoms

such as increased in adrenaline hormone when there was a threat [11]. Stress was a body's nonspecific response towards any stimulation from the stressor and not associated with nerve damage and anxiety, as most people believed [12].

1.2 The prevalence of physical activity and mental illness

Malaysia was marked with least physically active with more than 60 percent of the adult population engaged in sedentary lifestyles [13]. In facts, the prevalence of adult sedentary behaviour was high in Kedah (66.4%), followed by Negeri Sembilan (66.3%), Kuala Lumpur (63.6%), Malacca (62.2%), Selangor (60.1%), Sarawak (59.2%) compared to other Malaysian states (National Health and Morbidity Survey [14]. Additionally, physical inactivity among the Malaysian adult population has led to global mortality by 6 percent [14]. Woman, particularly housewives, has poor physical activity [13]. Furthermore, long-term sedentary lifestyle practices can contribute to non-communicable diseases (NCDs), including high blood pressure, heart disease, stroke, type 2 diabetes mellitus, and cancer [14].

Malaysia's mental illness is rising by years. The statistics regarding the prevalence of the mental health illness in Malaysia were scarce [15]. Recent data presented by the NHMS in 2015 showed that 3 out of 10 Malaysian's adult population above 16 years had mental problems. The prevalence of mental illness among Malaysian adults was increased three-fold from the year 1996 to the year 2015.

Furthermore, the prevalence of mental illness among Malaysian adults was higher in women (30.8%) compared to men (27.6%) [14].

1.3 Previous studies conducted on the relationship between physical activity with the depression, anxiety and stress

Previous studies show that physical activity was associated with lower psychological distress [16]. In addition, higher levels of physical activity were associated with higher psychological well-being [17]. Also, recent studies suggested that sitting time has directly associated with high level of psychological distress [18]. Other studies also found that physical activity has positive effects on biological, as well as mental [19]. Moreover, other recent studies stated that there was strong and positive relationship between physical activities with mental health [20]. Besides that, according the researcher have found that mental disorders have been associated with sedentary activity and increased physical activity facilitates better mood disturbances [9]. Furthermore, mental problems have significant associated with sedentary behaviour and light physical activity [21]. However, physical activity has been reported negative association with mental illness [22-25].

Therefore, there is a need to study the relationship between mental health and physical activity among women, as the prevalence of mental illness was reported higher among them. As there is limited study being done, particularly among Malaysian, this study will provide insight on the implementation for future study.

2. MATERIALS AND METHODS

2.1 Study design

A cross-sectional study was carried out among the 297 respondents which focused on full-time housewives in Selangor, Malaysia. This study was a quantitative study and carried out around certain residential areas, recreational parks, and shopping malls in Selangor State.

The respondents were obtained by purposive sampling method. The respondents were assessed using a validated questionnaire in order to measure the level of depression, anxiety, stress and also physical activity. The questionnaires that have been used included Socio-demographic, Depression, Anxiety and Stress Scale-21 Items (DASS-21) and Short Questionnaire to Assess Health Enhancing Physical Activity (SQUASH).

2.2 Inclusion and exclusion criteria

The respondents were selected based on inclusion criteria, which were includes married women, full-time housewife, aged 18 to 65 years, residents of Selangor, and able to read and write in either Malay or English. This study excluded respondents who have a mental health problem and physical disability.

2.3 Procedure

The data collection was begun once the ethical application has been approved (June 2019). The data was collected around the residential area, recreational parks and shopping malls. There were three self-administered questionnaires that included socio-demographic, DASS-21 and SQUASH. All three questionnaires have been distributed to respondents through direct and indirect by posting in social media platforms. The questionnaires were distributed directly to those respondents who fulfill the inclusion criteria and agree to participate in this study. Then, the respondents were given a consent form and a set of questionnaires (socio-demographic, DASS-21 and SQUASH) after they agreed to participate in this study. Furthermore, the respondents were informed about the intent of this study as well as instruction of questionnaires. It took ten to fifteen minutes for respondents to complete all these questionnaires.

Besides that, indirect distribution of questionnaires was done through the social networking such as Facebook, Telegram, WhatsApp, and Twitter. The statement and criteria of inclusion and exclusion were clearly stated. The websites link (questionnaires) was given to the respondents who met the inclusion criteria and willing to participate in this study. The directions for each questionnaire that were presented in layman languages, clearly and easily understood. In addition, the respondents were given the contact number of the researcher to ask any queries of the questionnaires.

2.4 Ethics

The legal approval for this study has been applied from the Research Ethics Committee of Universiti Teknologi MARA (UiTM).

2.5 Analysis

The data was evaluated using Statistical Package for Social Sciences (SPSS) versions 21.0. The descriptive statistic was used to summarize the data by finding the measures of the central tendency (median) and finding the measures of spread. The median and IQR was used instead of the mean and standard deviation since the data were not normally distributed. Meanwhile, the Spearman Correlation Test was used to find the relationship between the physical activity level with depression, anxiety and stress among full-time housewives. The Spearman Correlation Test was used instead of Pearson Correlation Test because of the data was not normally distributed. Furthermore, the Pearson Chi-square Test was also used in this study to observe the association between factors from socio-demographic and health with depression, anxiety and stress among full-time housewives.

3. RESULTS AND DISCUSSION

Table 1. Socio-demographic and health background of the respondents (n=297)

Characteristic	n (%)
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SOCIO-DEMOGRAPHIC BACKGROUND	
Age, years (Mean ±SD)	39.6 ± 10.3
Age (Min – Max)	20-65
BMI classification	
Underweight	21 (7.1)
Normal	126 (42.4)
Overweight	99 (33.3)
Obese class I	44 (14.8)
Obese class II	7 (2.4)
Race	
Malay	297 (100)
Educational level	
No formal education	9 (3.0)
Primary education	5 (1.7)
Secondary education	92 (31.0)
STPM/Matriculation/Diploma	98 (33.0)
Bachelor	93 (31.3)
Side job	
Has side job	83 (27.9)
No side job	214 (72.1)
Estimated monthly income	
No income	197 (66.3)
Income less than RM 3900	81 (27.3)
Income between RM 3900 to RM8299	19 (6.4)
Marriage status	
Married	286 (96.3)
Single mother	11 (3.7)
Marriage age, years (Mean ±SD)	14.84 ± 10.315
Husband's age, years (Mean ±SD)	42.44 ± 11.527
Husband's educational level	
No formal education	7 (2.3)
Primary education	13 (4.4)
Secondary education	92 (31.0)
STPM/Matriculation/Diploma	85 (28.6)
Bachelor	100 (33.7)
Husband's working status	
Retire	26 (8.7)
Not working	5 (1.7)
Working	266 (89.6)
Husband's working sector	
None/retired	26 (8.8)
Private	182 (61.2)
Government	89 (30.0)
Husband's side job	
Has side job	45 (15.2)
No side job	252 (84.8)
Estimated husband's monthly income	
No income	4 (1.3)
Income less than RM 3900	114 (38.4)
Income between RM 3900 to RM8299	127 (42.8)
Income more than RM8300	52 (17.5)
Estimated household income	
Income less than RM 3900	117 (39.4)
Income between RM 3900 to RM8299	127 (42.8)
Income more than RM8300	53 (17.8)
HEALTH BACKGROUND	
Pregnancy status	
Pregnant	28 (9.4)
Not pregnant	269 (90.6)
Breastfeeding status	
Currently breastfeed	63 (21.2)

Not breastfeed	234 (78.8)
Menopause	
Menopause	41 (13.8)
Not menopause	256 (86.2)
Chronic disease state	
Yes	29 (9.8)
No	268 (90.2)
Musculoskeletal disorder	
Yes	28 (9.4)
No	269 (90.6)
Prolonged depression	
Experience depression	6 (2.0)
Not experience depression	291 (98.0)
Incident of concussion	
Experience concussion	7 (2.4)
Not experience concussion	290 (97.6)
Smoking status	
Smoking	3 (1.0)
Not smoking	294 (99.0)
Alcoholic status	
Drinking alcohol	14 (4.7)
Not drinking alcohol	283 (95.3)

Data were analyzed using descriptive statistics

Table 2. The prevalence of physical activity among housewives (n=297)

	Median (IQR) ^a	n (%)
Commuting Activities		
(Total min/week)	120.00 (270)	
Short duration		149 (50.2)
Long duration		148 (49.8)
(MET-minutes)	240.00 (472)	
High intensity		148 (49.8)
Low intensity		149 (50.2)
Leisure Activities		
(Total min/week)	120.00 (330)	
Short duration		160 (53.9)
Long duration		137 (46.1)
(MET-minutes)	380.00 (1050)	
High intensity		150 (50.5)
Low intensity		147 (49.5)
Household Activities		
(Total min/week)	1200.00 (1380)	
Short duration		149 (50.2)
Long duration		148 (49.8)
(MET-minutes)	2940.00 (3000)	
High intensity		154 (51.9)
Low intensity		143 (48.1)

^a Data was not normally distributed
Data were analyzed using descriptive statistics

Table 3. The prevalence of depression, anxiety and stress among housewives (n=297)

Variables	Median (IQR) ^a	n (%)
Depression	6 (9)	103 (34.7)
Anxiety	6 (11)	134 (45.1)
Stress	8 (12)	117 (39.4)

^a Data was not normally distributed
Data were analyzed using descriptive statistics

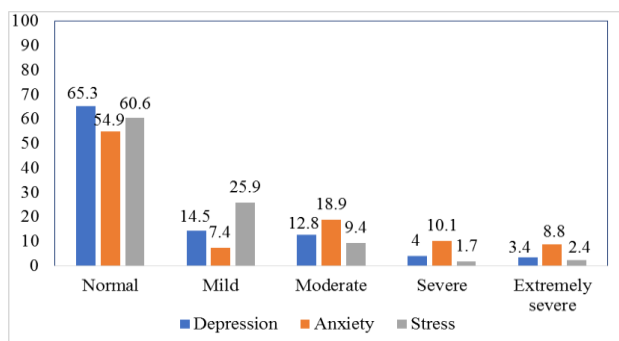


Figure 1. Prevalence distribution of depression, anxiety and stress

Table 4. Correlation between Total MET-Minutes (total intensity of physical activity per week) with depression, anxiety, and stress among housewives (n=297)

DASS-21 Item	Coefficient (r)	P value
Depression	-0.067	0.252
Anxiety	-0.073	0.208
Stress	0.040	0.491

*Data were analyzed using Spearman's Correlation test
 *Correlation significant at (p < 0.05) and (r > 0.26)

Table 5. Association between socio-demographic data with depression among housewives (n=297)

	Normal n (%)	Depression n (%)	x ² (df)	p value
Side job				
Side job (n=83)	43 (22.2)	40 (38.8)	1	*0.002
No side job (n=214)	151 (77.8)	63 (61.2)		
Husband working sector				
Private sector (n=208)	144 (74.2)	64 (62.1)	1	*0.030
Government sector (n=89)	50 (25.8)	39 (37.9)		

^aFisher's Exact Test was used when the expected count of <5 is more than 20%
 *p < 0.05 indicates significant difference
 *Data was analyzed by using Pearson Chi-square Test

Table 6. Association between health background with depression among housewives (n=297)

	Normal n (%)	Depression n (%)	x ² (df)	p value
Menopause status				
Has menopause (n=41)	33 (17.0)	8 (7.8)		
Not menopause (n=256)	161 (83.0)	95 (92.2)	1	*0.028

^aFisher's Exact Test was used when the expected count of <5 is more than 20%
 *p < 0.05 indicate significant difference
 Data was analyzed by using Pearson Chi-square Test

Table 7. Association between health background with anxiety among housewives (n=297)

	Normal n (%)	Anxiety n (%)	x ² (df)	p value
Experienced prolonged depression				
Experiences (n=6)	0 (0)	6 (4.5)		
Not experiences (n=291)	163 (100)	128 (95.5)	1	0.008 ^a

^aFisher's Exact Test was used when the expected count of <5 is more than 20%
 *p < 0.05 indicate significant difference
 Data was analyzed by using Pearson Chi-square Test

3.1 The demographic and health background

Table 1 shows the demographic and health background of housewives (n=297) who participated in this study. The demographic background has been assessed via socio-demographic questionnaires. The results show the mean age for housewives was 39.6 years old. Nearly half of the respondents were also listed as normal BMI (42.4%). Meanwhile, about 33.3 percent of respondents were classified as overweight, followed by 14.8 percent of obese class I, 2.4 percent of obese class II and 7.1 percent of underweight BMI.

All the respondents in this study were Malay and Islam. Approximately 31.3 percent of respondents have a bachelor's degree and 33 percent have a tertiary education (STPM / Matriculation / Diploma). A total of 31 percent of respondents have secondary education (PMR and SPM). Meanwhile, 1.7 percent of respondents have primary education, and 3.0 percent have no formal education.

This study shows that most respondents have no side job (not worked) (72.1%) compared to have a side job (worked) (27.9%). Furthermore, more than half of the respondents have no income (66.3%) as many of them did not work. Approximately 27.3 percent of respondents who worked have an income less than RM 3900. However, 6.4 percent of respondents who worked have an income between RM 3900 and RM 8299.

Next, about 96.3 percent of respondents who were participated in this study were marriage. The mean of the respondents' marriage age was 14.8. The mean of the husbands' age was 42.4. About 33.7 percent of the respondents' husbands have a bachelor's degree followed by have a secondary education (31.0%), tertiary education either STPM or Matriculation or Diploma (28.6%), primary education (4.4%) and no formal education (2.3%).

Based on the results, most of the respondent's husbands have currently been working (89.6%), followed by retired (8.7%) and not working (1.7%). Also, more than half of the respondent's husbands were working for the private sector (61.2%) followed by the government sector (30.0%) and none or retired (8.8%). Moreover, the majority of the respondents' husbands have no side job (84.8%); meanwhile only 15.2 percent have a side job. In addition, almost half of the respondents' husbands have an estimated monthly income between RM 3900 to RM 8299 (42.8%) followed by an income less than RM 3900 (38.4%), an income above RM 8300 (17.5%) and no an income (1.3%). Lastly, almost half of the respondents' whose husbands have an estimated household income between RM 3900 to RM 8299 (42.3%) followed by RM 3900 (40.0 %) and an income above RM 8300 (17.3 %).

Health information was obtained via socio-demographic questionnaires. The study shows that most of the respondents were currently not pregnant (90.6%), currently not breastfeeding their children (78.8%), and most of them still not have menopause (86.2%). In addition, most of the respondents

have a good health condition which have no chronic disease (90.2%) and musculoskeletal disorders (90.6%). However, some of the respondents had chronic diseases such as hypertension and diabetes (9.8%). Also, only 9.4 percent of respondents have experienced musculoskeletal disorders such as back pain. The study also shows that the majority of respondents had no experienced of prolonged depression (98.0%), and no experienced an incident of concussion (97.6%). Nevertheless, only 2.0 percent have experienced of prolonged depression and 2.4 percent of the respondents have a history of concussion. Most of the respondents were not smoking (99.0%) and not taking alcohol (95.3%). However, only 1.0 percent of the respondents were smoking and 4.7 percent of them were drinking alcohol.

3.2 The prevalence of physical activity among housewives

Table 2 indicates the prevalence of physical activity among housewives (n=297). The information on physical activity was obtained via SQUASH questionnaires. The physical activity was divided into three domains which were commuting activities, leisure activities, and household activities. The length of time spent on activities (total minutes/week) and physical intensity (MET-minutes) for commuting leisure and household activities was assessed. The median and IQR were used instead of the mean and standard deviation (SD) due to the data were not normally distributed. The median and IQR of the total minutes/week for commuting, leisure, and household activities were 120.00 (270), 120.00 (330), and 1200.00 (1380) respectively. Meanwhile, the median and IQR of the MET-minutes for commuting, leisure, and household activities were 240.00 (472), 380.00 (1050), and 2940.00 (3000) respectively. The results show that half of the respondents were engaged in short duration of the commuting (50.2%), leisure (53.9%) and household activities (50.2%). In addition, nearly half of the respondents were engaged in the high intensity of MET-minutes for commuting (49.8%), half of them were engaged in the high intensity of MET-minutes of leisure (50.5%) and household task (51.9%). However, the respondents were considered to have low MET-minutes in commuting, leisure, and household activities, although half of the respondents have high intensity of MET-minutes. It because of the average of short duration of total min/week was reported (housewives spent more time on a short duration compared to long duration of total minutes/week).

The present study found that full-time housewives have low physical activity in which half of the respondents have engaged in a short duration of commuting, leisure, and household activities. This finding suggests that the respondents spent less time on commuting, leisure and household activities such as walking, cycling, gardening, jogging, sports, and house chores. This finding was consistent with previous studies whereby housewives were associated with less physical activity [13]. Furthermore, other studies found that housewives tended to be involved in light-to-moderate intensity of physical activity such as housekeeping, home grocery, household items, and taking care of children [26]. There were several factors could influence the involvement of housewives in physical activity which were included cultural barriers, limited transportation, and lack of time due to the household workload and duties to care of other family member [7].

3.3 The prevalence of depression, anxiety and stress among housewives

The information on depression, anxiety, and stress was obtained via DASS-21 questionnaires. The level of depression, anxiety and stress was measured. Table 3 represents the prevalence of depression, anxiety and stress among housewives (n=297). The level of depression, anxiety and stress was measured using the median and IQR due to the data were not normally distributed. This study shows that the median score and IQR of depression was 6 (9), anxiety; 6 (11) and stress; 8 (12), respectively. The results show a high percentage of housewives who have anxiety (45.1%) followed by stress (39.4%) and depression (34.7%).

Figure 1 shows the prevalence of depression, anxiety and stress among housewives (n=297) which categorized based on the severity. The severities were further divided into normal, mild, moderate, severe and extremely severe. Based on this study, more than half of the respondents were classified as normal. Nonetheless, some of the respondents reported either have mild, moderate, severe and extremely severe. About 25.9 percent of the respondents have mild depression, moderate depression (9.4%), severe depression (1.7%) and extremely severe (2.4%). Besides that, about 7.4 percent of the respondents have mild depression, moderate depression (18.9%), severe depression (10.1%) and extremely severe (8.8%). Meanwhile, 14.5 percent of the respondents have mild depression, moderate depression (12.8%), severe depression (4.0%) and extremely severe (3.4%).

The results show a high percentage of housewives who have anxiety (45.1%) followed by stress (39.4%) and depression (34.7%) among full-time housewives. This finding was supported previous studies whereby full-time housewives reported more anxiety than working housewives [27]. Also, other studies have found that full-time housewives were highly anxious and poorly satisfied with their lives [28]. Furthermore, the full-time housewives who lived within the nuclear family were more anxious than lived in the joint family [29]. Besides that, this study also shows the prevalence of stress was quite high among full-time housewives which indicate their life were stressful. This result was consistent with previous studies whereby full-time housewives have perceived more stress than working housewives [6]. Moreover, this finding indicates that full-time housewives perceived less depression because of have ample time to enjoy their life and have a good relationship with family compared to working housewives which consistent with previous studies [30].

3.4 The relationship between Total MET-Minutes with depression, anxiety, and stress among housewives

Table 4 demonstrates correlation between Total MET-Minutes (total intensity of physical activity per week) with depression, anxiety, and stress among housewives (n=297). Spearman's Correlation Test was used instead of the Pearson Correlation Test due to the data was not normally distributed. The results show that there was no significant ($p > 0.05$) between total MET-minutes of commuting, leisure and household activities with depression, anxiety and stress. This study also shows there was no correlation between all variables ($r < 0.25$).

Based on the results, there was no significant correlation between MET-minutes of commuting, leisure and household activities with depression, anxiety and stress. This study was particularly in some studies whereby a negative association of physical activity with depression, anxiety disorders has been found [22-25]. The effect of physical intensity toward the level of depression, anxiety, and stress was not presented in this study because of poor measurements of psychological stress, and physical activity (duration and intensity). Also, inaccurate information on physical activity either over-reported or under-reported could happen due to housewives tend to self-estimate the duration and intensity in the SQUASH questionnaires. Thus, these factors were leads to inconsistent findings to recent studies which found that engaged more in physical activity drives to a better physical and psychological status in which contributed to the positive association between physical and mental health [31].

3.5 Association between socio-demographic data and health background with depression, anxiety, and stress among housewives

Pearson Chi-square Test was used since the data was not normally distributed while Fisher's Exact Test was used when the expected count of <5 and more than 20%. Total depression was further categorized into normal (0 to 9 scores of depression) and has depression (10 to 42 scores of depression). In addition, total anxiety also further categorized into normal (0 to 6 scores of anxiety) and has anxiety (7 to 42 scores of anxiety). Meanwhile, total stress was categorized into normal (0 to 10 scores of stress) and has stress (11 to 42 scores of stress).

Table 5 shows the association between socio-demographic data with depression among housewives (n=297). The results show that there was a significant association between have a side job (p=0.002), and the husband's working sector (p=0.030). Table 6 shows the association between health background with depression among housewives (n=297). The results show that there was a significant association between menopause status (p=0.028) with depression. Table 7 shows the association between health background with anxiety among housewives (n=297). The results show there was a significant association between experienced prolonged depression (p=0.008) with anxiety. Meanwhile, other factors in the socio-demographic and health background that have not been mentioned had no significant association with depression, anxiety, and stress.

Almost half of the respondents who worked (have a side job) were reported experiencing depression. This finding was supported by other researchers whereby working housewives have experienced greater stress and depression than full-time housewives due to face greater challenges in their lives [32]. In addition, working housewives were reported may have mentally exhausted throughout the day due to the challenges during additional tasks and house chores effort [33]. Moreover, there was a significant association between the husband's working sectors with depression. This study indicates that housewives whose husbands worked with the government

sector have more depression compared to the private sector. This finding can be linked with financial standing [34]. Hence, this study indicates that housewives whose husbands worked with the private sector has less depression may due to good financial standing compared to the government sector. However, the associations between government and the private working sector with mental problems were not yet to be addressed by scholars in Malaysia.

The study shows that there was a significant association between menopause with depression. Less than half of the respondents who non-menopausal but reported depressed and also some respondents who have menopausal were reported depressed. The evidence has shown that the incidence of depression in women usually rose due to hormone fluctuation for instances estrogen and progesterone [35]. This finding was supported by other researcher an increased prevalence of depression correlates with hormonal changes in women, especially during puberty, before menstruation, after pregnancy, and during pre-menopause [36]. The researcher further explained that changes in ovarian hormones and decline in estrogen level cause women to experience specific forms of depression-related disease, including pre-menstrual dysphoric disorder, post-partum depression and post-menopausal depression and anxiety [36].

In addition, there was a significant association between experienced prolonged depressions with anxiety. Previous studies suggest that anxiety disorders have been found more prevalent among individuals with a family history of major depressive disorder, disturbed family environment, childhood sexual abuse, low self-esteem, and low-educated [37]. This finding was also supported by other researchers whereby past diagnoses of psychological disorder, previously used psychotherapy as well as excessive alcohol, smoking, drug abuse, lower socioeconomic status, and gastrointestinal disorders were associated with anxiety [38].

The present finding shows different results compared to other studies whereby depression, anxiety and stress were not affected by the housewife's education level, marriage status, estimated monthly income, husband education level, husband working status, husband's side job, husband estimated monthly income. In contrast, previous studies in Malaysia have found the socio-demographic differences in depression [39-42]. The findings from these studies were difficult to interpret due to the lack of different samples in terms of age groups and geographical areas which consistent from previous study conducted [34]. However, this finding was vary with previous studies whereby most of the respondents have a good health background which many of the respondents were have not chronic disease, no musculoskeletal disorder, no history of concussion, and also not taking alcohol and cigarette.

3.6 Limitation & suggestion for future research

This study was lacking the respondents from other Malay ethnics since all the respondents were Malay. Besides that, the

challenge throughout the study was place barrier. It is due to the full-time housewives were quite hard to find other than at recreational places and shopping malls. Lastly, the respondents may over-report the duration of physical activity which affects the findings of this study. It may be due to the respondents to misunderstand questionnaire (SQUASH), and there is no opportunity to get clarification especially for indirect distribution through social networking.

It is recommended to recruit the respondents from urban and rural areas to observe the difference between physical activity and the level of depression anxiety and stress. Moreover, it is suggested to conduct a longitudinal study instead of cross-sectional to gain a better sense of physical activity with the level of depression, anxiety and stress among housewife by observing the same respondents over a time. Lastly, it also recommended to future researcher to conduct an intervention study regarding the effect of physical intensity on depression, anxiety and stress among full-time housewives.

4. CONCLUSION

Physical activity benefit both physical and mental health. The present study suggests that that full-time housewives have low MET-minutes of commuting, leisure and household activities. This study also found that higher prevalence of the housewives who have anxiety followed by stress and depression. Additionally, this study suggests that there was no significant correlation between MET-minutes of commuting, leisure and household activities with depression, anxiety and stress among full-time housewives. Besides that, this study found some factors of socio-demographic and health background has been associated with mental health such as side job, husband working sector, menopause and experienced prolonged depression. It is best for future research to develop intervention of specific physical activity that can help to improve mental health among this population.

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