

ORIGINAL ARTICLE

WEIGHT LOSS PRACTICE USING PHYSICAL ACTIVITY AMONG WORKING WOMEN IN KLANG VALLEY, MALAYSIA

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ABSTRACT

An increase in physical activity is a key component for effective weight loss. It helps to control weight loss by using excess calories as well as boosting metabolism and lowering insulin levels. Physical activity also helps prevent many chronic diseases and improve the overall human health. The objective of this study was to assess weight loss practice using physical activity strategies among working women in Kuala Lumpur, Malaysia. A total of 639 adult Malaysian working women were screened and 120 respondents were identified based on their experience of losing at least 10% of their highest lifetime body weight, which is a criterion for successful weight-loss. Self-administered questionnaire was used to collect information from 120 successful weight loss respondents. Physical activity was measured by using International Physical Activity Questionnaire (IPAQ) short version. Results showed that 35.8% of women had low physical activity level; slightly above than one third of women (38.3%) had moderate activity level, while 25.8% women had high physical activity level. The most common physical activity monitoring strategies implemented were exercise at least 30 minutes per day (22.5%) and incorporate physical activity into daily life (21.7%). A total of 70.8% women regained weight after significant weight loss. A total of 40.0% who regained weight as compared to 25.7% of those who did not regain weight were physically inactive ($p=0.138$). There was no statistically significant different in daily sitting time between the two groups ($p=0.627$). As a conclusion, government working women in Kuala Lumpur have low to moderate physical activity levels. Majority women regained weight after significant weight loss. Common strategies to lose weight are exercise at least 30 minutes per day and incorporate physical activity into daily life. More education and promotion regarding the importance of physical activity should be done to all community members especially to the government working women.

Keywords: Weight-loss, Physical Activity, Women, Klang valley, Malaysia

INTRODUCTION

Previous studies done in Malaysia showed that high prevalence rate of physical inactivity as reported by the Ministry of Health in 2006¹ was the contributing factor to the increasing rate of obesity and other nutrition related non-communicable diseases among Malaysian adults. The Institute for Public Health (IPH) in 2008² reported that the overall prevalence of physical inactivity among Malaysian adults aged 18 years old and above was 43.7%. Physical inactivity was defined as fewer than 150 minutes per week spent in moderate physical activities and 60 minutes per week in vigorous physical activities and total MET minutes per week is lesser than 600 in all three domains (National Health and Morbidity Survey III 2006)³. The physical inactivity was higher among women (50.5%), in older age (50 - 59 years old), housewife, and from urban areas background. The average total MET-minutes per week of Malaysian adults participated in physical activity was 894 MET-minutes per week which was above the criterion of 600 MET-minutes per week.

In general, regular exercise participation among Malaysians is still low. According to Poh et al. (2010)⁴, based on Malaysian Adult Nutrition Survey (MANS) findings, only 31.3% of Malaysians ever exercised two weeks prior to the study

despite of the exercise and physical activity promotion campaign aimed to improve health-related lifestyle behaviour⁵. WHO (2008)⁶ reported a much lower (19.6%) prevalence rate of physical inactivity among Malaysians. It was also found to be higher among females (23.2%) compared to males (16.0%).

Another study was carried out in Malaysia to determine the exercise participation among 122 overweight working women employed in the electronic factories in the Ulu Klang Free Trade Zone (FTZ) and the Bangi FTZ, Selangor, Peninsular Malaysia⁷. The study reported that only 29.5% had adequate exercise. Among those who had adequate exercise, a total of 88.9% was walking, followed by jogging (13.9%) and badminton playing (11.1%). A total of 70.5% of women did not exercise nor had adequate exercise. The highest reported barrier of not exercising were lack of time (27.9%), lazy (25.4%), no friends (16.4%), not interested (15.6%), shy (11.5%), and not allowed by the family members (7.4%).

However, Norimah and Haja Mohaideen in 2003⁸ reported that among 62.2% of respondents who had admitted doing exercise, about half (45.4%) of the respondents exercised two to three times a week, 40.0% of respondents exercised less than 15 minutes per session which is lower than the

recommended guidelines by the American College of Sports Medicine (ACSM) and the American Heart Association (AHA) for physical activity participation per week among adult aged 18-65 years old. A study carried out by Malaysian Institute for Research in Youth Development (IPPBM)⁹ to determine exercise participation among 4,807 youths in Malaysia reported that lack of interest in exercise and sports as well as activities among youths were the two reasons of low participation in exercise activity.

So far, not much is known about physical activity pattern of government working women as a specific group, therefore, the objective of this study was to assess weight loss practice using physical activity strategies among working women in Klang Valley, Malaysia.

METHODS

A cross-sectional study was conducted among government working women aged 24 years old and above in selected areas in Klang Valley, Malaysia (Federal Territory of Putrajaya and Kuala Lumpur) from June 2011 until June 2012. A total of 4 government ministries and 25 schools were selected by simple random sampling. Self-administered questionnaire was used to collect information from respondents.

Women were categorized as weight regainers when they had $\geq 5\%$ weight regain in the past 12 months while the non-weight regainers is defined as women who had $< 5\%$ weight regain or confirmed losing weight in the past 12 months. Physical activity was measured using Bahasa Malaysia version of the International Physical Activity Questionnaire short version (IPAQ 2002)¹⁰. The IPAQ short version is a seven-item questionnaire. The study provided separate scores on walking, moderate-intensity and vigorous-intensity activity. Computation of the total score was summation of the duration (in minutes) and frequency (days) for all types of activities.

Data Analysis

Data analysis was carried out using "Statistical Product and Service Solutions" (SPSS) version 20.0. Descriptive data were reported using mean, standard deviation and minimum-

maximum range for numerical variables and frequency distribution (percentage or proportion) for categorical variables.

Ethical consideration

The Research and Ethics Committee, Universiti Kebangsaan Malaysia Medical Centre approved the study (Research Code: FF-188-2011). All government working women were informed about the objectives, procedures, potential risk and benefits of the study. Written informed consents were obtained from the respondents before the study took place. The respondents were also assured that all the information given were strictly confidential.

RESULTS

In the early part of the data collection, a total of 639 government-working women were screened to identify women who experienced at least 10% of weight loss from their highest lifetime body weight, which is a criterion for successful weight loss. The prevalence of successful weight loss in this study was 18.8% (120/639). Table 1 shows socio-demographic characteristics of the respondents. The mean age of women who successfully lose weight was 33.2 ± 7.7 years old.

Majority of these women (72.5%) were married, had 1.3 ± 1.5 children, more than two-thirds (79.2%) had college or university degree, majority (96.7%) were Malays, had more than RM 1,500 basic salary per month (73.3%) and slightly one third of women were residents of Putrajaya (34.2%). Majority of women were classified as weight regainers (70.8%). A total of 16.7% women reported having health problems, the commonest health problem was hypertension (20.0%), followed by gastritis (15.0%).

In term of physical activity level, a total of 35.8% of women had low physical activity, slightly more than one third of women (38.3%) had moderate physical activity, while 25.8% women had high physical activity (Table 2). With regards to type of physical activity, almost half of the women (48.3%) were involved in vigorous intensity activities. The days and time spent on vigorous physical activity was 2.2 ± 1.7 days per week and 57.3 ± 39.9 minutes per week, respectively.

Table 1: Socio-demographic characteristics of government working women (N=120)

Characteristics	Frequency	Percentage (%)
Age in years; minimum-maximum (mean ± sd)	24-58 (33.2 ± 7.7)	
Marital status		
Married	87	72.5
Single	30	25.0
Widowed	2	1.7
Separated or divorced	1	0.8
Number of children; minimum-maximum (mean ± sd)	0-5 (1.3 ± 1.5)	
Education		
Primary school	1	0.8
Secondary school	21	17.5
College or university degree	95	79.2
Others (diploma)	3	2.5
Ethnicity		
Malay	116	96.7
Others	4	3.3
Women basic salary		
≤ RM 1,500 per month	32	26.7
>RM 1,500 per month	88	73.3
Women residency (N=118)		
Kuala Lumpur	39	32.5
Putrajaya	41	34.2
Selangor	32	26.7
Bandar Baru Bangi	6	5.0
Weight gain status		
Regainer	85	70.8
Non-regainer	35	29.2
Health problem		
Yes	20	16.7
No	100	83.3
Type of health problem (n=20)		
Hypertension	4	20.0
Gastritis	3	15.0
Back bone and muscular pain	2	10.0
Allergy	2	10.0
Other problems (increased weight, thyroid)	2	10.0
Ovarian cyst	1	5.0
Diabetes	1	5.0
Not known	5	25.0

Table 3 summarizes the physical activity monitoring strategies used by respondents. The most common type of physical activity monitoring strategy was exercise at least for 30 minutes per week (22.5%), followed by incorporate physical activity into their daily life (21.7%).

Table 4 summarizes the results of physical activity behaviour and physical activity monitoring strategies among regainers and non-regainers. A total of 40.0% regainers as compared to 25.7% non-regainers were physically inactive, however, there was no statistically significant different between the two groups ($p=0.138$). With regards to daily sitting time, the

finding shows that about half of regainers 50.6% and 45.7% non-regainers had more than 4 hours daily sitting time, however there was no statistically significant different between the two groups ($p=0.627$).

In term of physical activity monitoring strategies, the result shows that 28.6% regainers as compared to 20.0% non-regainers had exercise for at least 30 minutes per day, while 17.6% regainers and 31.4% non-regainers reported incorporate physical activity in their monitoring strategy. Only small proportions of women (7.1% of regainers and 2.9% of non-regainers) chose reducing their sedentary activities as their strategy.

Table 2 Physical activity behaviour of government working women (N=120)

Physical activity behaviour	Frequency	Percent (%)
Level of physical activity		
Low activity (<600 METs minutes/week)	43	35.8
Moderate activity (≥ 600 METs-minutes/week)	46	38.3
High activity (≥ 1,500 METs-minutes/week)	31	25.8
Types of physical activity		
Vigorous intensity activities		
No	62	51.7
Yes	58	48.3
Days of vigorous intensity activities per week (mean ± sd)	2.2 ± 1.7	
Minutes of vigorous activity per week (mean ± sd)	57.3 ± 39.9	
Moderate intensity activities		
No	33	27.5
Yes	87	72.5
Days of moderate intensity activities per week (mean ± sd)	3.0 ± 1.9	
Minutes of moderate intensity activities per week (mean ± sd)	73.7 ± 65.5	
Walk activity		
No	16	13.3
Yes	104	86.7
Days of walking activity per week (mean ± sd)	5.2 ± 2.2	
Minutes of walking activity per week (mean ± sd)	68.9 ± 90.7	
Physical active		
No	43	35.8
Yes	77	64.2
Daily sitting time		
< 4 hours	61	50.8
≥ 4 hours	59	49.2

DISCUSSION

An increase in physical activity is a key component for effective weight loss. It helps to control weight loss by using excess calories as well as boosting metabolism and lowering insulin levels. Physical activity also helps prevent many chronic diseases and improve the overall human health. Physical activity is an important behaviour factor to keep body weight losses off through direct energy expenditure. In the year

2001, the American College of Sports Medicine (ACSM) published a Position Stand that recommended 200-300 minutes/week for long-term weight loss, therefore, more physical activity may be necessary to prevent weight regain after weight loss ¹¹. Earliest studies reported weight regain and physical activity effects ^{12,13}. Decrease in physical activity has been found to predict weight regain in the National Weight Registry (NWCR) ^{14,15}.

Table 3 Physical activity monitoring strategies of government working women (N=120)

Physical activity monitoring strategies	Frequency	Percent (%)
Exercise at least for 30 minutes per day		
No	93	77.5
Yes	27	22.5
Incorporate physical activity into daily life		
No	94	78.3
Yes	26	21.7
Reduce sedentary activities		
No	113	94.2
Yes	7	5.8

The prevalence of physical inactivity (< 600 METs minutes per week) in this study was lower (35.8%) than that reported by the National Health and Morbidity Survey II(43.7%) with higher proportion of adults (60.7%) did not exercise two weeks prior to data collection⁴. Our study found

higher proportions of women who regained weight were physically inactive and it was influenced by adoptive physiological mechanism of decreased energy expenditure. Therefore, they could not maintain their weight in the past 12 months. In addition, sitting in front of TV has

consistently been associated with risk of weight gain. About half of the those who regained weight (50.6%) as compared to those who did not

regain weight (45.7%) had daily sitting time four hours and above with no significant different ($p=0.236$).

Table 4: Physical activity behaviour and physical activity monitoring strategies among weight regainers and non-regainers

Variable	Regainers (85) f (%)	Non-regainers (35) f (%)	X ²	p-value
Physical activity behaviour				
Physical active				
No	34 (40.0)	9 (25.7)	2.200	0.138
Yes	51 (60.0)	26 (74.3)		
Daily sitting time				
< 4 hours	42 (49.4)	19 (54.3)	0.236	0.627
≥ 4 hours	43 (50.6)	16 (45.7)		
Physical activity monitoring strategies				
Exercise for at least 30 minutes per day				
No	68 (80.0)	25 (71.4)	1.045	0.340
Yes	17 (20.0)	10 (28.6)		
Incorporate physical activity into daily life				
No	70 (82.4)	24 (68.6)	2.774	0.096
Yes	15 (17.6)	11 (31.4)		
Reduce sedentary activities				
No	79 (92.9)	34 (97.1)	0.215 ^a	0.372
Yes	6 (7.1)	1 (2.9)		

^aChi-square with continuity correction

A study in USA reported that weight regain was higher in those who did not meet public health recommendations for physical activity (OR=2.0; 95% CI=1.2-3.5) and those who had average daily sitting time (> 4 hours) (OR=2.0; 95% CI=1.3-3.2)¹³. Contradict to our finding, a study conducted by Barnes and Kimbro (2012)¹⁶ in USA reported that significantly more maintainers (55.0%) compared to regainers (32.0%) had low activity level. In a study conducted by Kayman et al. (1990)¹⁷, it was reported that majority of maintainers (90%) and 34% regainers exercise regularly, with less frequency of exercise among regainers. In addition, Phelan et al. (2010)¹⁸ found that regainers significantly spent less time for physical activity per week (327.9 ± 19.3 minutes) compared to maintainers (344±22.4 minutes). Wing et al. (2008)¹⁹ found the association between physical activity and weight regain ($p=0.0005$) in which decrease in activity over time was related to weight regain.

Our findings showed that regainers had tried to prevent their weight gain through a variety of methods. Initially, half of women used diet-monitoring strategies on their own without any formal assistance or use of commercial programme. Women who regained weight in this study are more frequently restricted some types

of foods from their diet with less engagement in physical activity, therefore, women could not maintain body weight loss. Several studies found the relationship between weight regain and decrease in physical activity monitoring behaviour^{13,19}. The limitations for the current study are the cross-sectional design measuring the prevalence at specific time and location, small sample size and only government working women involved in the study.

CONCLUSION

As a conclusion, government working women in Klang Valley have low to moderate physical activity levels. Majority women regained weight after significant weight loss. Common strategies to lose weight are exercise at least 30 minutes per day and incorporate physical activity into daily life. More education and promotion regarding the importance of physical activity should be done to all community members especially to the government-working women.

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COMPETING INTERESTS

The authors declare that they have no competing interests.

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