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# Frequency of Exercise Impacts on Body Weight of Obese Women

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**Abstract:** Obesity is weight that is higher than what is considered as healthy weight for a given height. This caused lot of difficulties including health complications. The aim of study is to find the relation between frequency of exercise in a week and total body weight loss in obese women. Total of 40 participants with age 35 years old who obese, selected within 3 neighborhood areas and joined according to their selected program at the same place which is Masjid Kampung Melayu Majidee's court. There is strong positive correlation with Pearson's correlation of 0.8338. Thus, our study confirmed the relation between frequency of exercises in a week and total body weight loss.

**Keywords:** Pearson correlation, obese, frequency of exercises in a week and total body weight loss

## 1. Introduction

According to Centers for Disease Control and Prevention, obesity is weight that is higher than what is considered as a healthy weight for a given height. Body Mass Index, or BMI, is used as a screening tool for overweight or obesity [1]. Based on Clinical Practice Guidelines on Management of Obesity, 2003, WHO cut off points for overweight and obesity is 25 and 30kg/m$^2$ [2]. However due to high prevalence of comorbidities in Asian, thus, the cut off points is 23 and 27.4kg/m$^2$. Obesity has caused lot of complications especially heath related problems. Thus, public health did actions to reduce the morbidity and mortality caused by obesity, mostly focused on individuals, encouraging them to eat healthier and to exercise more.

The rise in obesity worldwide most likely reflects changes in the environment and/or behavior. Most of the women unemployed or working as administrative officers that most of the time sits still. Consequently, energy expenditure required for daily living has continuously declined. Thus, with reductions in housework-related energy expenditure might have been substantial contributors to the rise in prevalence of obesity in women. Domestic mechanization has also contributed to increased sedentariness, as time spent in house work has been replaced by sedentary activities such as watching television and use of other screen based media.

Clearly, obese individuals have higher habitual energy expenditure compared with normal weight people (due to their larger body size and resting metabolic rates). Leibel et al. demonstrated that 10% weight gain increases daily energy expenditure from 370 to 530 kcal, depending on the baseline weight. The obvious implication of this is that the rate of energy intake must also increase accordingly, otherwise weight loss will ensue [3].

Evidence is also accumulating that exercise has profound benefits for brain function, including improvements in learning and memory as well as in preventing and delaying loss of cognitive function with aging or neurodegenerative disease [4].

In choosing an appropriate exercise program, the 'FITT' criteria should be considered such as the frequency, intensity, time (duration) and type of exercise. All exercise programs should be introduced gradually. In addition to intensity, the following should also be encouraged are flexibility exercises to attain full range of joint motion, strength or resistance exercises and aerobic conditioning [2].

The approach with exercise or diet had not succeeded whether this is due to failure to restrict energy intake or to maintain high levels of energy expenditure has yet to be determined conclusively. The lack of research done led to a great deal of confusion of the usefulness of physical activity in weight loss. Thus, the research done to proof that duration of exercise contributes to weight loss. The results obtained may be used to help obese people to work-out in order to gain their ideal weight.

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## 2. Materials and Methods

### 2.1 Study design and sample

This study was done to 40 participants who had BMI more than 23kg/m$^2$ at 3 neighborhood areas which is in Kampung Melayu Majidee, Majidee, and Taman Suria by conducting a fitness program which is aerobic for one hour duration only for ladies age 35 years and older. Prior the program, the body weight of each participant measured and recorded. After 2 months program, then the participants' body weight remeasured and recorded. The participant is able to choose program according to the frequency in a week, 3, 4, or 5 times. This program was totally conducted by an experienced trainer at Masjid Kampung Melayu Majidee's court. In order to have more participants, the program was totally free, announced at Facebook, Instagram and WhatsApp then the eligible participants were put into WhatsApp group according to their selected program.

### 2.2 Data analysis

The data analysis was done by using Microsoft Excel. After the raw data inserted, Pearson correlation was done.

## 3. Results

Total of 40 women from 3 neighborhood areas joined this study for 2 months. Table 1 summarizes the total of respondents according to frequency of exercise in a week.

**Table 1** Total of respondents with the frequency of exercise in a week.

| Frequency of Exercise in A Week(times) | Respondents, *n* (%) |
|---|---|
| 3 | 8 (20) |
| 4 | 15 ( 37.5) |
| 5 | 17 (42.5) |

Dependent variable (*y*) is total weight loss/kg. Independent variable (*x*) is time of weekly physical exercise. The mean for *y* is 4.7kg. The mean for *x* is 4.225. The standard deviation for *y* is 2.1679kg. The standard deviation for *x* is 2.0555. The highest value of total weight loss is 5kg while the lowest value is 1kg. The highest value of frequency of exercise is 5 and lowest value is 3.

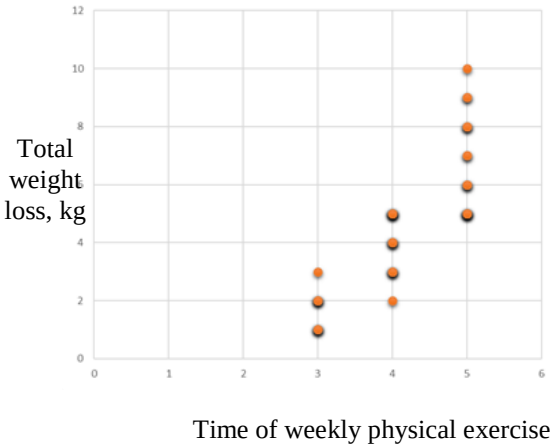


**Figure 1**.Pearson correlation between time of weekly physical exercise and total weight loss

The coefficient of Pearson Correlation is 0.8338, thus strong positive relationship between time of weekly physical exercise and total weight loss in obese women.

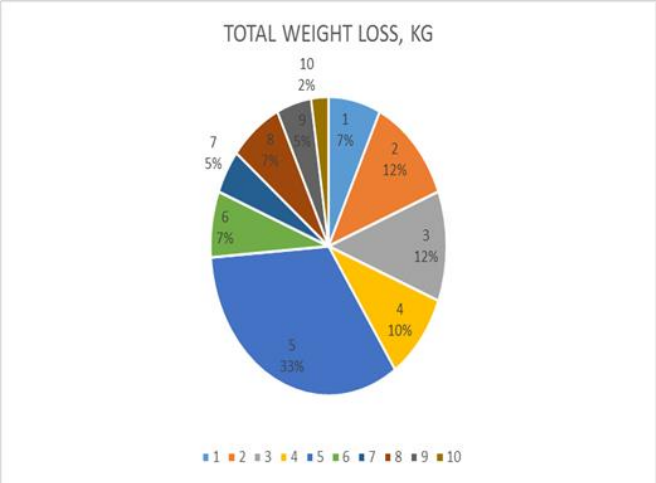


**Figure 2**. Total body weight loss after 2 months program.

The biggest percent amount of body weight loss recorded from the participants is 5kgs which is 33%. The least percent amount is 10kgs which is 2%.

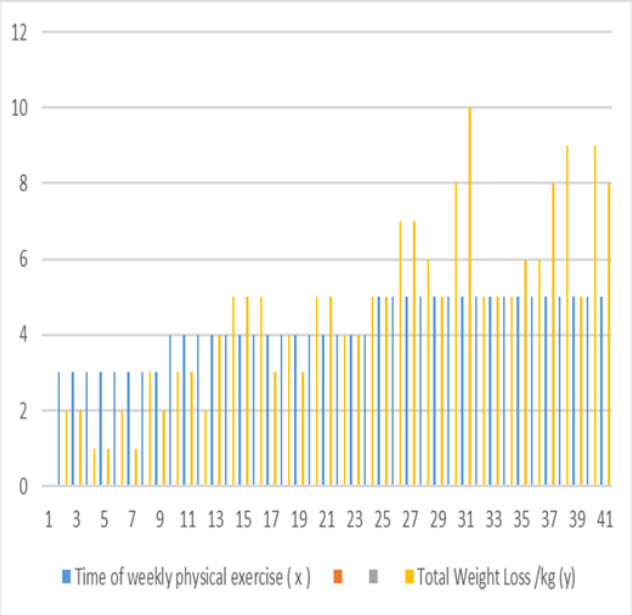


**Figure 3**. Total body weight loss according to frequency of exercise in one week.

The trends of body weight loss increase with the frequency of exercise in one week. The highest total body weight loss is 10kgs with 5 times a week. The least total body weight loss recorded is 1kgs with frequency of 3 times a week. The frequency of exercise 5 times a week recorded total body weight loss between 5 and 10kgs.

## 4. Discussion

This study sought the association between frequency of exercise in a week with the total body weight loss of obese women. Most of the participants chose 5 times a week aerobic exercise for one hour duration.

Weight loss usually consists of about 75% fat (mainly abdominal fat) and 25% lean tissue. Men lose more weight than females of similar height because they have more lean body mass and therefore higher energy expenditure. Older patients of either sex have lower reduction in lean body mass and physical activity; metabolic rate declines by approximately 2 percent per decade. Therefore they lose weight slower than younger subjects.

According to study conducted by Foster-Schubert et al. in 2012, participants in the diet alone group lost a mean 7.2kg, those in the exercise alone group lost a mean 2.0kgs , while those in the diet and exercise group lost a mean 8.9kg, each compared to a 0.7kg decrease among controls [4]. The weight reductions for the diet alone and diet and exercise groups both were significantly greater than that experienced by the exercise alone group (both $P<0.0001$), though the difference between diet alone and diet and exercise did not reach the adjusted level of statistical significance ($p=0.02$). Thus, with exercise proved that will help in losing weight. If added with diet will increase the amount of weight loss. As in our study, there is strong positive relation between the frequency of exercise in a week with the total weight loss [4].

Based on study conducted by Willis et al. in 2012, comparisons between aerobic training and resistance training groups in the current study suggest that aerobic training decreases both body weight and fat mass significantly more than does resistance training [5]. These data are supported by other findings from this trial that indicate aerobic training significantly reduced visceral adipose tissue more than resistance training and trended toward the same result in liver fat change. Thus, we are testing the participants with aerobic training. The greatest amount of weight loss by participants who exercise most frequent which is 5 times a week in 2 months.

## 5. Conclusion

In conclusion, our study proved that the more frequent the participants exercise the more they lose weight. However, if they supplement it with proper regular and balanced diet, they will lose more weight. We hoped this study will help more obese people to work-out more to gain their ideal weight.

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