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**Research article**

**THE EFFECTS OF EIGHT WEEKS PHYSICAL TRAINING PROGRAM ON PHYSICAL FITNESS LEVEL AMONG MALAYSIAN NATIONAL SERVICE TRAINEE**

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**Abstract**

*Journal of Sports Science and Physical Education* 3(1): 41–49, 2015 - This quasi experimental study is aimed to determine the effect of 8 weeks physical exercise training program among 219 obese and overweight National Service Training Program (NSTP). It is a purposive sampling and divide to experimental group (n = 110) and control group (n = 109). Body fat (BFP) measured using Omron Karada Scan HBF 375 with Height Scale. The experimental group underwent 8 weeks physical exercise program using the NSTP wellness module. The module contains 18 low intensity training, 40 moderate intensity training and 14 high intensity training with 8 psychological sessions. Analysis showed a significant difference between pre-test and post-test after 8 weeks in experimental group. There was a greater decrease BFP (-1.44%) and weight (-2.03%). The control group showed slightly increase in BFP (+2.97%) but decrease weight (-0.28%). This means the intervention program very effective and manage to reduce the BFP and weight among 18 years old obese and overweight NSTP in Malaysia.

**Keywords:** *Obesity, Body Fat Percentage, Weight, National Service Trainees*

**Introduction**

Healthy lifestyle can be defined as a practice in life that brings positive impacts on the individual, family and the community at large. Among the examples of a healthy living would be the euphoric moments of the individual for a certain time period that would annihilate any debilitating factors that may exist in them. The current lifestyle is so challenging and stressful that a healthy lifestyle is imperative and there are numerous ways of achieving it.

Regular exercises in the form of sports, recreational activities, walking alone or with the family during weekends make the life of an individual healthy and happy at the same time. Medical experts concur that these activities do improve blood circulation and enhance the immune system. A sports enthusiast usually has a healthy physique and mind compared to an individual who seldom exercise. Obviously frequent exercise promotes health better and a healthy mind too comes from a healthy body.

Failure to adopt a healthy lifestyle contributes to the problem of obesity in the

community. And obesity is a major threat to the wellbeing of the Malaysian community now. Numerous recent studies have shown that obesity contributes to the escalating sedentary lifestyle diseases such as diabetes, coronary disease and high blood pressure. If obesity is left unchecked it will lead our country to shoulder high medical costs, reduced productivity and employment rates.

Willians (2013) stated “today teenagers are expected to have a shorter life expectancy than their parents and this is very worrying”. This is not surprising because of the lifestyle and the rates of developments make them the catalysts to the increase of obesity worldwide. Denielsen et al., (2010) noted that the tendency of interest such as watching television, using the computer or playing digital games on a computer or smart gadgets led to a sharp rise in the amount of obesity in the world.

Hasan, Yusof and Alavi (2012) stated that healthy communities produce a viable country in terms of productivity and produce calm individuals physically, psychologically and mentally. State of harmony, calm and high competitiveness in individuals can also be formed with the birth of healthy individuals thus creating a great community that is free from negative symptoms. Major health problems among Malaysians are caused by lifestyle such as obesity, cardiovascular diseases and diabetes. National Health and Morbidity (2006) in adults (including those who are aged fifteen years and above) showed that the rate of obesity among people aged was significantly increased from 4.40 per cent in 1996 to 12.30 per cent in 2006.

According to the Malaysian Health Minister, Liow Tiong Lai (2013), Malaysia is a country that have an obesity problem which is higher compared to many other southeast Asian countries and this number is still growing. According to him, the findings from the National Health and Morbidity in

2011, 15.10 per cent of Malaysians aged 18 and above are obese. This amount represents an increase of 14.0 percent from 2006 to 2.6 million total adult population who suffer from obesity and 477,000 children under the age of 18 suffer from overweight. Most of the world's population including Malaysia lead a sedentary lifestyle (Poh et al., 2008) due to rapid developments and increasing use of gadgets that restrict the use of human energy.

In order to meet this challenge, the National Service Programme Department would like to contribute towards the creation of a healthy and prosperous Malaysians. The problem of obesity, especially among teenagers can lead to heart disease and various cardiovascular system related diseases. Realizing this, Healthy Lifestyle Program (PGHS) was carried out as a pilot project in two camps of the NSTP, the Geo Kosmo Camp and Camp Pelangi Hill. The purpose of this study was to ascertain the effectiveness of a healthy lifestyle module for the selected National service trainees. National Service Training Program as a development platform for the Malaysian teen characters is the appropriate platform for running programs and indirectly PGHS will create a better quality of trainees. PGHS implementation in obese adolescents, who followed the training program, are expected to address the issue of healthy lifestyles among people in Malaysia and helps to boost the country's economic and social performance.

Based on the problem statement, this study is to find answers to the following questions:

1. The extent of difference in body fat percentage (BFP) among the treatment group compare to the control group among the obese trainees in NSTP Camps during pre-test and post-test.

2. The level of the weight difference compare to the treatment group and the control group among the obese trainees in NSTP Camps during pre-test and post-test.

### **Literature Review**

Nowadays, the health problems that popular among Malaysian is a disease of the "Iron Triangle" that is diabetes, hypertension and heart attack. A consultant at Darul Ehsan Medical Centre, Abdul Rahman (2009), stated that obesity is a major cause of these three diseases. The increase in obesity is directly proportional to the number of cardiovascular patients. He suggested this problem can only be overcome with continued education and raising awareness as these diseases are caused by lifestyle and behavior problems of each individual.

Statistics from Nutrition Society of Malaysia (2010), stated that thirty percent of Malaysians are overweight and thirty percent are obese. This means that sixty percent of Malaysians consisting of all ages are at risk of various diseases. He stressed again that children who suffer from this disorder are on the rise and the rate of increase is very disturbing. This phenomenon has become a global issue because of the drastic development of modern technologies in developing countries such as in Malaysia. Habsah (2009) states that heart attack has become the number one killer of people in Malaysia. She pointed out that unhealthy eating habit of most Malaysians who are fond of enjoying fast food and soft drinks are major contributors to obesity and heart disease. Obesity is caused by consuming high-calorie foods and laziness in exercising.

According to Tee, (2008) the population of Malaysia is facing a serious problem of obesity in which 16 percent of them have excess weight and six per cent were obese. Overweight and obesity were largely in urban than rural areas. Both of

these problems are the 'mother' of all diseases. Two major diseases due to obesity are heart disease and diabetes. Heart disease, which is one of the major diseases causing death in this country not only strikes individuals aged 60 years and above, but also at the age of 20 years. According to the records of the National Heart Institute (IJN) it was found that patients aged 21 years received surgical treatment of coronary transfer. Ministry of Health study also found that the age rate for the heart patients' in the country is younger than the other countries.

According Norhakimi, (2007) over eating cause four out of ten adults suffered from obesity in Malaysia. This problem is also widespread among children in this country. Based on the Asian Food Information Centre (AFIC) which is located in Bangkok, developmental progress in children showed that overweight children continue to remain obese or overweight into their adulthood. The earlier symptom of overweight occurs, the higher the risk and worsening of cardiovascular disease. The level of obesity or body fat content are measured using a number of tests such as the Body Mass Index test or "Body Mass Index" (BMI) and "Skin Fold callipers" test. Most health agencies and researchers in the health are using the body mass index test to interpret the level of obesity and predict the risks of cardiovascular disease (Freedman et al., 2008). In Malaysia, the Ministry of Health and Ministry of Education use these tests based on procedure and standards issued by the World Health Organization (WHO).

Azhari, (2009) Consultant Cardiology National Heart Institute (IJN) stated that individuals approaching their 40s, should strive to improve the health of their hearts for Asian population die 10 years early from heart disease caused by obesity compared to the western population. More alarming is the rate of death from heart disease is the

highest recorded occurrence in the Asia-Pacific population led by India (1.53 billion), China (702,925) and Russia (674 881). Heart disease has become number one killer in Malaysia, Singapore, Indonesia and South Korea.

Deborah, (2010) has reviewed various studies on obesity. Her record clearly demonstrated that the phenomenon of obesity is increasing worldwide. In the U.S., an increase of up to 17 per cent among children aged 6 to 11 years, 18 per cent among adolescents aged 12 to 19 years were recorded in the last 20 years. The main cause of this phenomenon is the lack of physical activity, nutrition and attitude. Most studies suggest that long-term actions are necessary to bring about a change in attitude towards sedentary lifestyle that leads to various diseases and early death.

Frank and Michelle, (2010) states that the obesity problem is becoming increasingly serious because of genetic factors, nutrition, physical activity and the environment. Clinical studies conducted in the U.S. shows the number of cardiovascular patients is increasing because of changing environmental factors towards modernization, unhealthy eating patterns and lack of participation in physical activity at the levels of children and adolescents to be the main cause of this phenomenon than genetic factors. The researchers also noted that the problem of obesity is becoming increasingly serious because calorie intake through a variety of foods every day is higher than the daily energy consumption.

To overcome this problem, Malaysian Ministry of Health has done various programs such as telematch, sports, fitness instruction, forums on healthy lifestyle, regular inspection by the school unit and frequent campaigns on the risks of obesity and awareness of cardiovascular disease but these efforts still fail to achieve success. This is because of Malaysian negative

societal attitudes that prefer to follow a sedentary lifestyle than to adopt a healthy lifestyle.

### **Methodology**

This quasi-experimental study was conducted at two camps of the National Service Training Program (NSTP). The purposive sampling consists of 219 trainees from the group 10, series 1, 2013, elected to participate in the study and divided into two groups, program group (n = 110) and control group (n = 109). Sample aged 18 were selected based on body fat percentage (BFP) at level of obese - male (24% and above) and females (36% and above) (Gallagher, et al., 2000). Participants are required to undergo a pre-test during the report to the NSTP camp, mid test and post-test is given after eight-week intervention sessions.

During the pre-test, data such as height, weight, age, Body Fat Percentage (BFP) and Body Mass Index (BMI) were recorded using Omron Krada scan HBF 375 with Height Scale. The program group will undergo intervention based on a Healthy Lifestyle Programme manual, special module built by researcher to reduce the weight and BFP among trainees. Activities in the form of physical exercise consist of 18 sessions of Low Intensity Activities, 40 Moderate Intensity Activities sessions, 14 sessions of High Intensity Activities and eight relaxation therapy sessions conducted on the continuous treatment for eight weeks. Heart Rate Monitor i-Sport Model W118 watch with chest strap HRM module is used to monitor heart rate before exercise and after exercise and calories burned during the intervention phase. The control group will perform physical activity within the module as determined by the National Service Training Department.

## Results

Table 1 shows a comparison of the entire Body Fat Percentages (BFP) for both groups at both camps. Data show the mean percentage decrease from BFP (M = 30.56, SD = 5.66, n = 110), BFP 2 (M = 30.14, SD = 5.54, n = 110) and BFP 3 (M = 29.21, SD = 5.86, n = 110). Overall mean difference was -1.44 %.

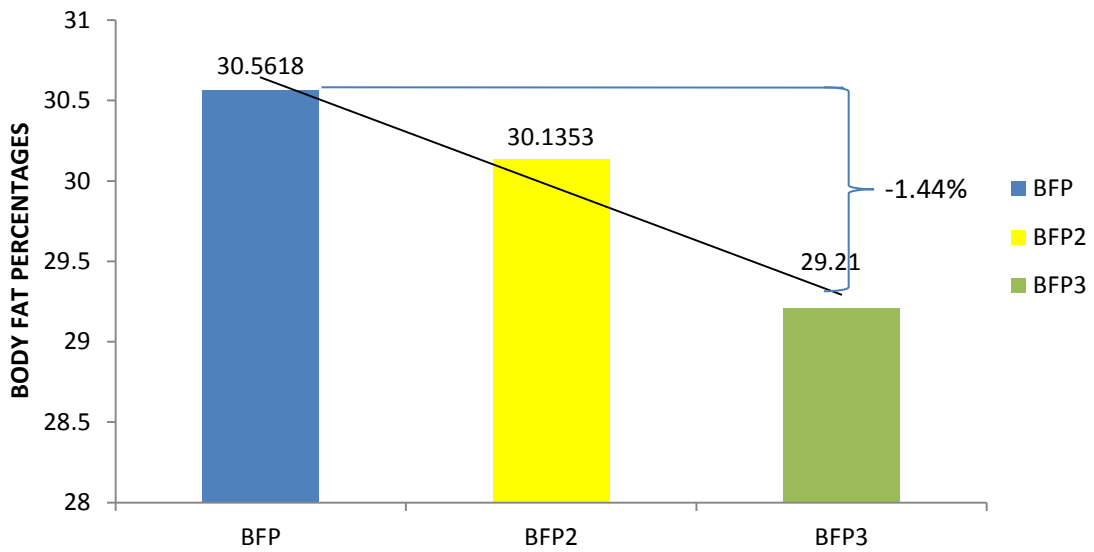
Table 2 shows the overall comparison of BFP for the control group for both the NS camps. The data showed an increase in the mean of the three tests of BFP (M = 20.32, SD = 6.50, n = 109), BFP 2 (M = 20.76, SD = 6.32, n = 109) and BFP3 (M = 23.28, SD = 7.68, n = 109). The increase in the difference in the three trials was 2.97 per cent. The findings show that there are differences between program group's BFP decrease compared with the control group's. This shows the Healthy Lifestyle

Programme has succeeded in reducing the program group's BFP.

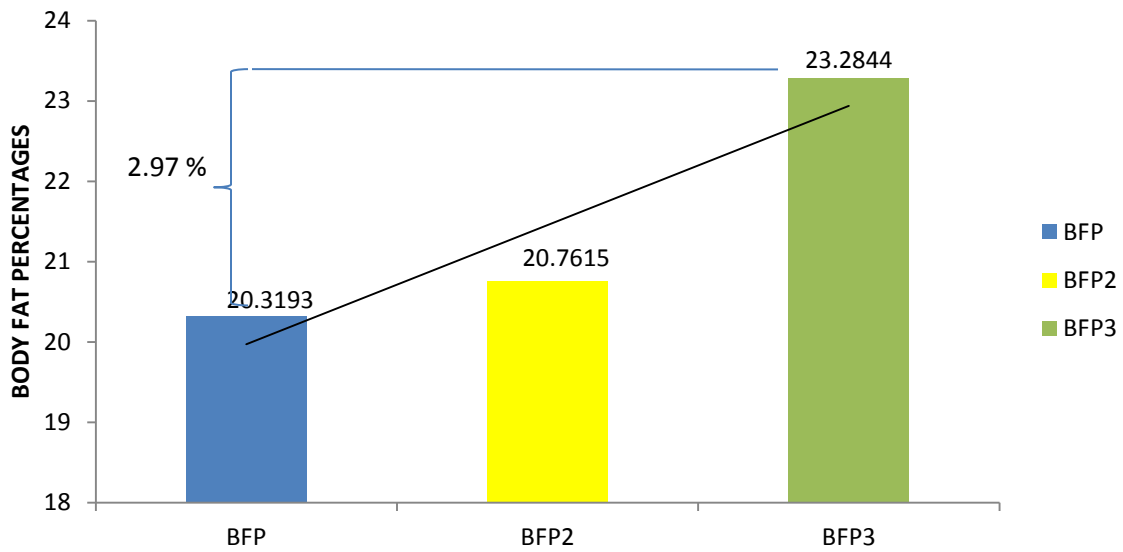
Table 3 shows a comparison of the total weight of the program group. Data measured in two tests of heavy (M = 83.04, SD = 20.70, n = 110) and Weight 2 (M = 81.02, SD = 14.64, n = 110). Data analysis showed the mean weight reduction of 2.03 kg.

Table 4 shows a comparison of the total weight of the control group. Data measured in two tests of Weight (M = 60.69, SD = 10.16, n = 109) and Weight 2 (M = 60.41, SD = 9.68, n = 109). Data analysis showed the mean weight reduction of 0.28 kg. The findings show there is a difference in weight of the program group compared with the control group. This shows the Healthy Lifestyle Programme has been successful.

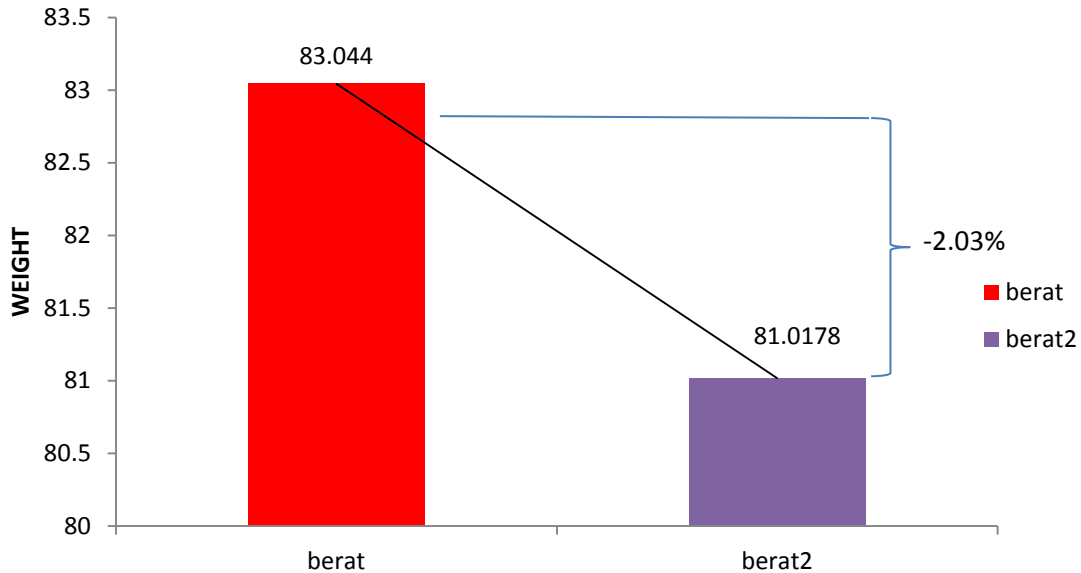
**TABLE 1 :** Comparison of Total Body Fat Percentages (BFP) for the Program Groups ( $n = 110$ )



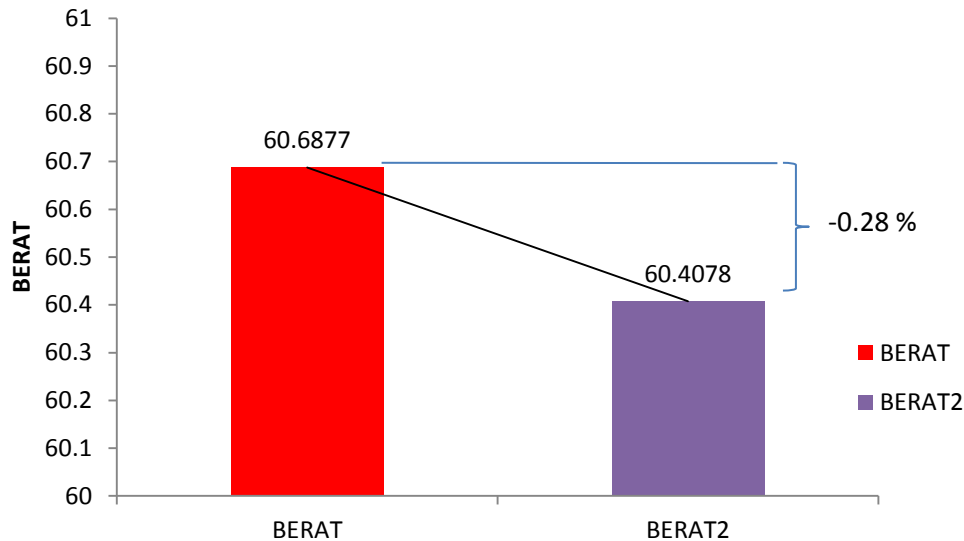
**Table 2 :** Comparison of Overall Body Fat Percentages (BFP) for the Control Group ( $n = 109$ )



**Table 3:** Overall comparison of the Weight for Program Group ( $n = 10$ )



**Table 4:** Overall comparison of Weight for the control group ( $n = 109$ )



### Discussion

Data analysis showed that there is a change in terms of BFP and sample weight among program group compared with the control group. Intervention sessions through Healthy Lifestyle Programme has managed to reduce the BFP and the subject's body weight due to the program group's

enthusiasm and active participation within the Healthy Lifestyle Programme that has been prepared and the determination to bring down the BFP and weight. According to Clark et al., (1996), self-efficacy is one of the important components in the treatment of obesity. Self-efficacy is the belief in you to control and perform an action required to

deal with various problems or situations that play an important role for the individual.

According to Van der Bijl and Shortridge-Bagget, (2002), an individual will be more likely to engage in pursuits that he or she thinks they can control and can do it better compared to other activities that they are less confident of. Yusop et al. (2013), emphasized that mental preparedness of an obese trainee especially in terms of self-efficacy should be taken seriously and given first priority before everything else so that those trainees can overcome all forms of challenges during the program.

Goran et al., (1999) found that the most effective strategy to lose weight is to engage communities and organizations concerned with the obesity while planning an appropriate program that takes into account race, gender, age, religion and others. This is due to the involvement of communities and organizations in the treatment of obesity that may help trainees to strive inculcating self-efficacy for physical activity, which has been provided thus, can lose weight. Nicolai et al., (2009) explains the coach plays an important role in the success to lose weight than done alone. With encouragement from coaches, obese trainees will also be able to raise their morale and motivation as well as the right combination of activities and organized in terms of workload and sufficient repetition.

### **Conclusions**

Based on the findings, Healthy Lifestyle Programme among trainees in the NSTP Camps has successfully reduced body fat and weight among the obese trainees. This study is a pilot study to see the effectiveness of the Healthy Lifestyle Programme among trainees in the NSTP. Some drawbacks such as intensity aspect and duration of training activities have been modified for the purpose of improvement. Based on these

findings, the National Healthy Lifestyle program among trainees will be extended to all 81 NSTP camps and used as a weight loss module specifically designed for trainees who are suffering from obesity. Implementation of the Healthy Lifestyle Programme in obese teenagers who followed the NSTP is expected to address the issue of healthy lifestyles among people in Malaysia which in turn will help to boost the country's economic and social performance.

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