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THE EFFECTIVENESS OF 8 WEEKS PHYSICAL TRAINING PROGRAM AMONG OBESE AND OVERWEIGHT NATIONAL SERVICE TRAINEES BY GENDER

GUNATHEVAN ELUMALAI, NORKHALID SALIMIN, YUSOP AHMAD, MD AMIN MD TAFF & NUZEP ALMIGO

Faculty of Sports Science and Coaching, University Pendidikan Sultan Idris, Tanjung Malim, Perak, Malaysia

ABSTRACT

Obesity becoming a serious health phenomena among Malaysians. Prevent obesity is better than cure the illness caused by this life style disease. This quasi experimental study is aimed to determine the effectiveness of 8 weeks physical training program among 116 obese and overweight National Service Trainees by gender. The intervention program conducted in Geo Kosmo National service Camp. 30 male and 28 female trainees selected as experimental group (n=58) and 29 male and 29 female trainees were in control group (n=58). Body fat percentage (BFP) and weight measured using Omron Krada Scan HBF 375.

The experimental group underwent 8 weeks physical exercise program using a specific National service module. The module contains 18 low intensity, 40 moderate intensity 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 by gender. There was a greater decrease in BFP (2.02%) and weight (3.28 kg) among male trainees and BFP (1.89%) and weight (3.75 kg) among female trainees. The male trainees in control group showed greater increase in BFP (13.89%) and weight (0.66 kg). Surprisingly, the female trainees showed slightly decrease in BFP (0.23%) and weight (0.39 kg).

The independent t-test also showed significant differences among treatment group male and female trainees ($p<0.05$) in both elements. As a conclusion, the 80 sessions intervention program is very effective and able to reduce the BFP and weight among 18 years old obese and overweight National Service Trainees in this camp, even though there were significant differences between gender. The female trainees showed greater decrease in weight, but not in BFP compare to the males.

KEYWORDS: Obesity, Overweight, Life Style Disease, Gender, National Service Trainees

INTRODUCTION

The phenomenon of obesity and body fat content is a key factor affecting various cardiovascular diseases. World obesity rate has increased drastically in developed and developing countries (Chiu, Austin, Manual, Shah, and Tu, 2011). Based on the World Health Organization-WHO (2010), three million premature deaths occur each year due to diseases caused by obesity. WHO statistics (2008) show that one out of the seven women and one out of ten men are obese.

Since the 1970s, the incidence of overweight in childhood increased and turns them obese into their adulthood. This increase has an impact on health status and causes them to run the risks of various diseases such as heart disease, diabetes, hypertension, stroke and subsequent failure of other organs such as the liver and kidneys (Gabbard, 2008; Salim Yusuf & Sonia Anand, 2008).

Overweight and obesity in children is caused by various factors such as unbalanced eating habits, lack of physical activity, genetics, and a sedentary lifestyle (De Onis and Blassner, 2008). Progress in technology and industry as well as the massive migration to cities also influence lifestyle and dietary patterns of people of developing countries such as Malaysia (Azhari Rosman, 2009).

In Malaysia, the problem of obesity has reached epidemic levels and is increasing every year. National Health Morbidity Survey (NHMS III) 2006, reports a relatively high level of obesity in women than in men. Incidence among Malay and Indian communities are potentially higher than the Chinese. Percentage of children and teenagers who are overweight and obese is increasing and alarming. It is estimated that nearly 30 percent of high school students are overweight.

Apart from the fat under the skin, abdominal fat is also a major cause of many diseases associated with cardiovascular system. Accumulation of fat around the internal organs can reduce cardiovascular fitness. (Chrostowska, Szyndler, Paczwa & Narkiewicz, 2011; Morrell & Fox, 2009; Zaher, Zambari, Pheng, Muruga, Ng, Appannah & Onn, 2010; Zaki, Robaayah, Chan, Vadivale and Lim, 2010). All these researchers point out, that the calculation of abdominal fat in children and teenagers must be carried out to predict the risk of cardiovascular disease.

According to Lauren and Eric (2011), many educators are aware that the level of obesity among students aged 12 to 19 years is increasing drastically. Recent studies in the U.S. prove almost 16% of them are overweight and 18% are obese. One of every three students is expected to be above-normal weight. In Malaysia, a similar situation exists because of genetic factors, environment, attitudes and nutrition (NHMS III, 2006).

Effectiveness of physical activity on cardiovascular disease has been identified since the 1980's (Kevin, Lisa, Michael and Jennifer, 2009). Physical activity is a behavior that occurs in many different forms and contexts, including free style games, everyday work, exercise, school physical education, and sport management. This refers to any body movement produced by skeletal muscles that result in a small increase in energy consumption. Regular physical activity is important for the coordination of body weight and accumulation of mineral in bones during childhood and teenage. Increased use of energy needed during physical activity will contribute to the efficient functioning of the various systems, maintaining your weight, reduce the risk of degenerative disease, reduce the risk of premature death and improve the overall quality of life (Pickup & Price, 2007; Schmidt & Lee, 2005).

Each study associated with obesity and cardiovascular endurance suggests the importance of physical activity for the prevention of risks of various diseases (Zaki, et.al, 2010). Regular participation in physical activity should be practiced from early childhood so that the present children become independent from the threats of obesity and abdominal fat phenomenon in their adulthood (Frank and Michelle, 2010).

A regular program of physical activity done periodically can reduce the level of fat in the body and help to have an ideal weight. Many clinical studies have shown the effects of physical activity and a balanced diet to control body weight and fat accumulation. In Malaysia, the awareness of the importance of physical activity was inadequate. Malaysian society usually does physical activity after a disease (Nor Azmi Kamaruddin, 2009).

Most of the long-term studies on the effectiveness of physical activity proves that participation in physical activities such as exercising, jogging and sports at least 3 times a week can reduce body weight and the risks of cardiovascular disease (Akbartabartoori, Maj. Lean & Hankey, 2008; Alysia, Edward & Peter, 2008; Azhari Rosman, 2009; Baumgartner & Jackson, 1999; David, 2011 & Raffaella Buzzetti, 2011). Obesity, abdominal fat and decreased physical activities proved to influence the level of cardiovascular fitness that forms the basis of each individual's health.

Statement of the Problem

National Health and Morbidity Survey (NHMS) III 2006, handled every ten years by the Ministry of Health reported a 43.7% or approximately 5.5 million Malaysians aged 18 years and above are not physically active. 60% or 7.4 million adults aged 18 years and above, have a BMI of more than 23. 14% or 1.7 million Malaysians are obese with a BMI over 30, with a relative increase of 200% compared to 10 years ago. 14.9% citizens over the age of 30 have diabetes. 42.6% (5.4 million) over the age of 30 suffer from hypertension.

Malaysia always needs people who are healthy and active. Sensitivity to physical fitness will contribute to increased productivity. Physical health can be maintained through the consumption of a healthy and balanced diet and physical activities such as sports and regular exercise. According to Tancred (1987), the manner of determining a lifelong good physical condition is by regular involvement in physical activity, a balanced diet, adequate rest and good health practices.

Given the current situation which is very worrying, the National Service Training Department in collaboration with the Faculty of Sports Science and Coaching, University Pendidikan Sultan Idris has done a form of experimental research on trainees of the National Service Training program. This study was conducted to test the effectiveness of a training program for 8 weeks on trainees of the National Service Training program who are obese and overweight based on gender.

Methodology

This research is a quasi-experimental among trainees of the National Service Training program that are obese and overweight at the Geo Kosmo National Service Camp. A total of 116 students were selected based on their percentage of body fat. They were divided into treatment and control groups. A total of 30 male and 28 female trainees are placed in the treatment group and 29 male and 29 female trainees in the control group. A training program that consists of 18 low-intensity activity, 40 moderate intensity activity, 14 high intensity with 8 psychological training session were conducted in the morning and evening every day for 8 weeks. Data on body fat percentage and weight of trainees were collected before and after the training program using measuring tools Krada Omron HBF 375 Body Fat Analyzer. All the data analyzed using descriptive and independent t-test to determine the differences.

Findings

The findings of the study after the intervention program for 8 weeks, indicates that there was a decrease in the percentage of body fat of about 2.02% and weight loss by 3.28 kg in the treatment group of male trainees. For the treatment of female trainees there was a decrease of 1.89% on the percentage of body fat and 3.75 kg of body weight. Male trainees control group showed an increase of 13.9% on the percentage of body fat and 0.66 kg of body weight. Meanwhile, female students from the control group showed a decrease in percentage of body fat by 0.23% and of 0.39 kg of body weight.

When the rate of decline is compared between the male and female treatment group trainees, the independent t-test analysis showed a significant difference in terms of percentage of body fat $p=0.000$ ($p<0.05$) whereby the rate of decline in male trainees is higher than females. Comparison of body weight also showed a significant difference $p= 0.002$ ($p<0.05$), in which female trainees showed a higher rate of decline rather than the males. This study also proves that the training program conducted for 8 weeks do give a positive impact. However, there are also other factors that affect the rate of decline in percentage of body fat and weight as the control group of female trainees showed a decrease in both elements.

CONCLUSIONS

In conclusion, the researcher is able to state that the training program developed by the researcher did give a positive impact. This means that use of this module can be used by all national service training program trainees who are obese and aim to lose weight and percentage of body fat. This study also showed that a regular program of physical exercise can reduce weight and percentage of body fat as well as reduce the risk of various cardiovascular diseases which is the number one killer in Malaysia.

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