

Healthy Lifestyle Program in Malaysian National Service Camp

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Abstract

National Service Training Program is a characters development platform for the Malaysian teenagers. This program indirectly promote healthy lifestyle to create a better trainees quality. Healthy Lifestyle Program implementation among obese adolescents whom followed the training program are expected to address the issue of healthy lifestyles among Malaysian and helps to boost the country's economic and social performance. The implementation of Healthy Lifestyle Program involves obese trainees with Body Fat Percentage (male=24 and above; female=36 and above), measured using Omron Krada Scan HBF 375 with Height Scale. The physical training program consist of 18 Low Intensity Activities, 40 Moderate Intensity Activities, 14 High Intensity Activities Training sessions and eight relaxation therapy sessions continuously for eight weeks. The Heart Rate Monitor i-Sport Model W118 HRM watch with chest strap is used to monitor the heart rate before and after exercise and calories burned off during the intervention period. The study conducted among 2445 obese trainees and the result showed decrease of Body Fat Percentage (BFP) in 425 trainees (22.91%). The continuous implementation of this program is expected to reduce the weight, BFP and BMI of 31680 obese trainees in 10 years and to give knowledge to 792 000 Malaysians. The 22% result impact involves a total of 174240 people who lose weight and BFP successfully, which involves 0.62% of the population of Malaysians. Based on the findings, the National Service Healthy Lifestyle Program successfully helps the obese trainees to lose weight and Body Fat Percentage. The implementation of National Service Healthy Lifestyle Program among the obese adolescents is expected to solve the healthy lifestyles issues among Malaysians as well as to improve the economic performance and social development in our country.

Keywords: Physical training; Obese; Body fat percentage; Body mass index

Introduction

Healthy lifestyle is defined as a living practice which brings positive impact to the individual, the family and the community. Healthy lifestyle is needed in this challenging modern era because everyone suffers with major diseases and stress. There are many actions can be taken to achieve this goal. The failure to adopt a healthy lifestyle will result obesity problems in community. Obesity is rapidly becoming the leading cause of preventable death in Malaysia. Diabetes and cardiovascular disease are increasing day by day due to this phenomenon. Obesity as a phenomenon or excessive weight among children and teenagers keeps on increasing around the world at three folds in the course of 30 years ago [1].

Ministry of Health, Malaysia [2], based on National Health and Morbidity Survey shows that the rate of obesity among aged people has increased sharply from 4.40% in 1996 to 12.30% in 2006. In 2011, there are 15.10% of Malaysians aged 18 and above suffers with obesity. This amount shows an increase of 14% from 2006 with a total of 2.6 million adults and 477,000 children. According to National and Health Morbidity Survey year 2011, 33% (5.4 Million) Malaysian adults are pre obese and 27.2% (4.4 Million) are obese. Children below 18 years, 3.4% (0.3 Million) are obese. This indicates that unfortunately Malaysia now has a "sick population" [3].

Based on data from National Health and Morbidity Survey has demonstrated that at least 63% of adults age 18 years and above have at

least one non communicable disease risk factors such as overweight, obesity, high blood pressure, high blood sugar or high blood cholesterol [4]. most of the people in the world, including Malaysia, adopt a sedentary lifestyle due to the rapid development and the increasing usage of equipment that limits the manpower and become a global health issue which affects more than 1.3 billion adults in developed and developing nations [5].

Increase in the number of obese children and teenagers each years is alarming among Malaysians and it becomes a hot issue which gains attention from all around the world. One of the factors that contribute to obesity is not living a healthy lifestyle especially in controlling one's diet and the absence of involvement in physical activities and job stress [6]. Ministry of Health, Malaysia [2], lack of physical activity contributes to an increase in body fat which eventually leads to obesity. The lack of physical activities can lower the lungs' performance and causes arterilleries to be clogged due to high level of cholesterol.

Obesity is considered as an issue which affects one's health and appearance. World Health Organization [7], states that children who were obese as early as two years old were more prone to end up being obese when they became adults. This involved more than one third of teenagers who were obese. Obesity among children and teenagers today is considered as an epidemic and doubled in the past three decades. Worldwide, approximately 180 million children and teenagers, below 18 years were obese. Obesity directly linked to chronic diseases such as depression, high blood pressure, diabetes, breast cancer, osteoporosis, coronary heart disease, stroke, colon cancer and restlessness which require serious attention [8].

Sedentary lifestyles contribute many chronic diseases that cause the loss of productivity in the country. Williams states that modern world teenagers are expected to have a shorter life span because their lifestyles and the development had catalyse the obesity problem worldwide [9]. Hassan et al. [10], states that healthy communities can produce a viable country in terms of productivity and produce calm individuals physically, psychologically and mentally.

In order to face these challenges, the National Service Training Department would like to contribute to build a healthy and prosperous nation. Obese teenagers with body fat problems are increasing and this cause the rising of heart and cardiovascular diseases. National Service Training Program, which a mean to develop youth characters, is a suitable platform to carry out National Service Healthy Lifestyle Program (NSHLP) so that trainees with better character qualities are formed. The implementation of NSHLP among the obese adolescents is expected to solve the healthy lifestyles issues among Malaysians as well as to improve the economic performance and social development of our country.

Methods

National Service Healthy Lifestyle Program is implemented during the registration of trainees at the National Service Camp. Pre-tests such as height, weight, age, BFP and Body Mass Index (BMI) were recorded using Omron Krada Scan HBF 375 with Height Scale. The trainees will follow the interventional program of NSHLP to reduce body weight and the Body Fat Percentage. The physical training activities consist of 18 Low Intensity Activities Training sessions, 40 Moderate Intensity Activities, 14 High Intensity Activities and eight relaxation therapy sessions. These activities conducted continuously to the treatment group for eight weeks. The Heart Rate Monitor i-Sport Model W118 HRM watch with chest strap was used to monitor the heart rate before and after exercise and calories burned off during the intervention period.

Results and Discussion

A pilot study to assess the effectiveness of the Healthy Lifestyle Program using the quasi experimental design is conducted at two selected National Service camps. The sample consisted of 219 chosen trainees and divided into two groups, that are the program group (n=110) and the control group (n=109) based on their Body Fat Percentage (BFP), which are at obese level, shows male (24% and above) and female (36% and above) [11]. Subjects are required to undergo pre-tests during their registration at the National Service camp, mid tests and post-tests are given after the trainees had finished their eight week intervention sessions. Data analysis showed that there is a change in BFP (-1.44%) and weight (-2.03%) among program group compared to the control group (BFP, +2.97%, Weight, -0.28%).

After the pilot study and improvement in some aspects, National Service Healthy Lifestyle Program was implemented in 81 National Service camps in the year 2013. The study samples consisted of 2445 obese trainees selected all over the country (Figure 1). Subjects' are required to undergo training Healthy Lifestyle Program for eight weeks. During the programme, food menu is controlled by the National Service Training Department in which the number of calories consumed is same for each camp.

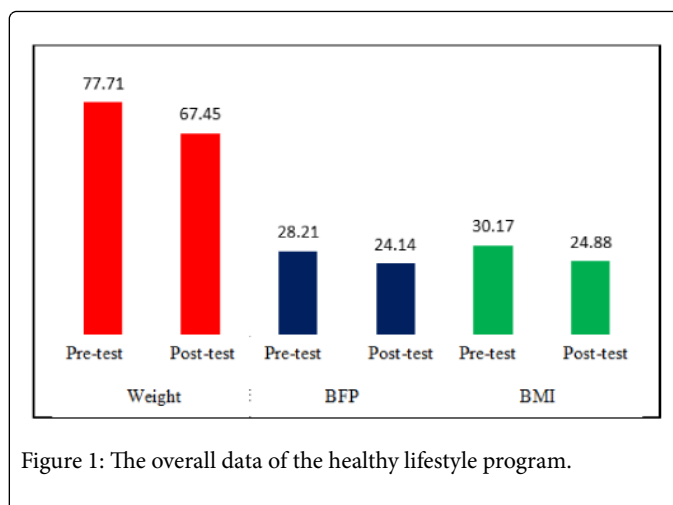


Figure 1: The overall data of the healthy lifestyle program.

Figure 1 shows the overall data of the Healthy Lifestyle Program. The results of the tests carried out show a decrease between pre-tests and post-tests. Pre-tests show the mean weight loss of the trainees (M=10.26 kg), that is from 77.71 kg (N=2445) to 67.45 kg (post-test, N=2093). Body Fat Percentages (BFP) data shows a decrease (M=4.07%) from 28.21 per cent (pre-test, N=2445) to 24.14 percent (post-test, N=2093), while the Body Mass Index (BMI) data shows a decrease (M=5.29) from 30.17 (pre-test, N=2445) to 24.88 (post-test, N=2093).

Table 1 shows the total number of trainees who successfully lose their Body Fat Percentage (BFP). In underfat category, there is a significant decline in which during the pre-test (42), while during the post-test (19). However, for the healthy category, there is an increase (52) from pre-test (249) to post-test (301). Similarly for overfat category, there is an increase 44 from pre-test (299) to post-test (343). For the obese category, there is a decrease of 425 from pre-test (1855) to post-test (1430).

Categories	Pre-test	Post-test	Changes
Under fat	42	19	+54.76% (n=23)
Healthy	249	301	+20.88% (n=52)
Over fat	299	343	+14.72% (n=44)
Obese	1855	1430	-22.91% (n=425)
Total	2445	2093	

Table 1: Frequency data on body fat percentage.

The findings of this study suggest that the National Service Healthy Lifestyle Program significantly reduces the Body Fat Percentage (BFP) of 425 trainees (22.91%), whom was originally obese to overfat category. The trainees of overfat category increases by 44 persons (14.72%), and the trainees of healthy category increases by 52 people (20.88%). These increases are the result of the decrease of students in Overfat and Obese categories.

The Healthy Lifestyle Program has been implemented across 81 National Service camps since 2014. 60 obese trainees selected to join the program for each of the series and 180 people per camp. The total number of trainees involved is 14,400 per year. The long-term effects of

10 years of implementation of the National Service Healthy Lifestyle Program are shown in Table 2 below. The number of trainees involved each year is 144000 and the expected impact of the 22% of trainees who successfully lose weight and BFP is 3168 people. The

implementation of this program for a continuous period of 10 years will involve a total of 144 000 pupils with the expected impact of 31 680 people who will lose weight and BFP. This figure involves the 0.52% of Malaysian population, which records 28 million people.

No.	Year	No. Involved	No. Accumulated	Impact (22%)	Impact Accumulated
1	2014	14400	14400	3168	3168
2	2015	14400	28800	3168	6336
3	2016	14400	43200	3168	9504
4	2017	14400	57600	3168	12672
5	2018	14400	72000	3168	15840
6	2019	14400	86400	3168	19008
7	2020	14400	100800	3168	22176
8	2021	14400	115200	3168	25344
9	2022	14400	129600	3168	28512
10	2023	14400	144000	3168	31680

Table 2: Projection of trainees involved in 10 years.

The National Service Healthy Lifestyle Program involves 14,400 trainees each year and at the end of the program, trainees will be provided with the National Service Healthy Lifestyle Programme Users' Manual. Trainees are taught to maintain their weight and BFP by doing exercises shown in the manual book. Trainees are also required to train at least one of their family member, good friends or

anyone. The impact of knowledge transfer is shown in Table 3. Every year the number of knowledge transfer are expected to be 144000 persons and the expected impact of 10 years are 792,000, represents 2.6% of Malaysian population. The result impact of 22% will involve a total of 174 240 people who will lose weight and BFP. This figure involves 0.62% of the total Malaysian population of 28 million people.

No	Year	No. Involved	10 Years Impact	Accumulated Impact	Impact (22%)	Effect	Impact Accumulated	Effect
1	2014	14400 × 1 person × 10 Years	144000	144000	31680		31680	
2	2015	14400 × 1 person × 9 Years	129600	237600	28512		60192	
3	2016	14400 × 1 person × 8 Years	115200	388800	25344		85536	
4	2017	14400 × 1 person × 7 Years	100800	489600	22176		107712	
5	2018	14400 × 1 person × 6 Years	86400	576000	19008		126720	
6	2019	14400 × 1 person × 5 Years	72000	648000	15840		142560	
7	2020	14400 × 1 person × 4 Years	57600	705600	12672		155232	
8	2021	14400 × 1 person × 3 Years	43200	748800	9504		164736	
9	2022	14400 × 1 person × 2 Years	28800	777600	6336		171072	
10	2023	14400 × 1 person × 1 Years	14400	792000	3168		174240	

Table 3: Projection of knowledge transfer in 10 years.

Based on the findings, Healthy Lifestyle Program significantly reduced 22% Body Fat Percentages and weight among obese trainees in the National Service Training Camp. According to Goran et al. [12] the most effective strategy to lose weight is to engage the communities and organizations with the obese groups and plan an appropriate program which accounts the differences by race, gender, age, religion and

others. This is because the involvement of communities and organizations to overcome obesity may help in the increase of self-efficacy among trainees to try to do activities that are provided in order to lose weight [13], explains that the coach plays an important role in losing weight compared to lone rangers. Encouragement from the coach, obese trainees will raise their spirits and gain their self-

motivation. Combination of appropriate activities, organized workload and enough repetitions are planned by the coach. The implementation of National Service Healthy Lifestyle Program among the obese adolescents is expected to solve the healthy lifestyles issues among Malaysians as well as to improve the economic performance and social development of the country.

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