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Effect of speed and duration of walking on body weight and cholesterol level: A pilot study

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Abstract

The main aim of this study was to find out what kind of walking is best suitable for the people with overweight and high level of cholesterol. There were two types of walking used in this study. In type-I, 40 minutes duration was fixed for 12 weeks and after every four weeks intensity was increased. Type-II walking was started with 30 minutes duration and after every four weeks duration and intensity both have increased simultaneously. At the starting of walking, Intensity of was 120 steps/minutes for both the groups and it's increased 130 steps/minutes after 4 weeks and last four weeks it's 140 steps/minutes. There were two groups in this study, Experimental group-I and Experimental group-II. Total 10 subjects were selected for the study. There were 5 subjects in each group. Bodyweight and cholesterol level of all the subjects were measured at the time of pre-test and post-test. After completing the schedule of 12 weeks walking, significant mean difference found between pre-test and post-test at both the groups. The mean value of bodyweight and cholesterol level at the time of post-test (77.64 kg and 171.9) is lower than the value of pre-test (81.02 kg and 182.2) were found at Experimental group-I. The mean value of bodyweight and cholesterol level at the time of post-test (75.14 kg and 198.4) is lower than the value of pre-test (78.72 kg and 230.2) were found at Experimental group-II. From this study the conclusion may be drawn that both types of walking is very helpful for the people with overweight and high level of cholesterol. Experimental group-II is showing better result than Experimental group-I. But it is not sure that type-II walking is more effective for the people with overweight and high level of cholesterol as because the sample size is too small. To establish the theory that type-II walking is more effective than type-I, a larger sample is required.

Keywords: Bodyweight, cholesterol, pedometer, walking.

Introduction

Walking is a very easy exercise to reduce fat. We just need to walk faster than we walk normally. We can burn excess body fat accumulated in the body and if we can decrease our excess weight it will help us to decrease the level of cholesterol. Walking not only decrease our weight and triglycerides but also keeps our heart and lungs strong. It can be a great way to lose weight and increase physical fitness. There are many benefits to incorporating such an exercise routine into everyday life. Speed walking can be a great exercise for people of all ages. There are a few different ways for individuals to tell if they are walking quickly enough for physical benefits; these are perceived exertion, heart rate, and a measure of distance versus time. The perceived exertion when walking briskly should cause the walker to begin to sweat and to breathe slightly more heavily, but he or she should still be able to talk easily. In this study two types of walking were used. The main aim of the researcher just to find out what type of walking is more effective for the overweight people.

Objectives of the study

1. To find out correct speed of walking to control overweight.
2. To find out correct duration of waking for controlling high cholesterol level.
3. To find out how much distance we should walk to control our weight and high cholesterol level.
4. To find out what types of walking is more effective for overweight people.

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Methodology

Subjects- There are 10 male subjects were selected from Bolpur Santiniketan area and they were coming under overweight category. Only men subjects were selected for the study.

Tools of the study- The tools which were used for the study are Yamax cw-701 pedometer, a stop watch, weighing machine.

Procedure- At the starting of the study the weight of each subject were measured by a standard weighing machine. Blood sample also collected from all the subjects to measure blood cholesterol level. The researcher told to the Experimental group-I to walk 40 minutes at the morning. Recommended speed was 120 steps/minutes for the first 4 weeks. After 4 weeks speed increased up to 130 steps/min. Last 4 weeks the speed increased up to 140 steps/minute. For the Experimental group-I duration of walking was 40 minutes and it was fixed for 12 weeks. Experimental group-II started with 30 minutes duration and the intensity was same like Ex. Group-I, 120 steps/min. After 4 weeks duration increased up to 40 minutes and intensity increased 130steps/minutes. At the last four weeks duration increased up to 50 minutes and the intensity become 140 steps/minutes. Yamax cw-701 pedometer was used to find out the number of steps and distance covered by each subject. The subjects walked 6 days in a week. Height of the subjects were also measured to find out the B.M.I. The weight of the subjects and cholesterol level were measured once again after completing the schedule of 12 weeks.

Findings- After completing the study the researcher found that there is a significant mean difference between pre-test and post-test value in both the groups. At the time of pre-test the mean value of weight was 81.02 kg and mean value of cholesterol level was 182.2 found in Experimental group-I. At the time of post-test, mean value of weight was 77.64 kg and mean value of cholesterol was 171.9 found in this group. This is showing that there is a significant difference in pre-test and post-test. The mean value of weight and cholesterol at the time of pre-test is 78.72 kg and 230.2 found in Experimental group-II. At the time of post-test the values were 75.14 kg and 198.4 found in this group.

Statistical calculation of Experimental group-I

Table 1: t-test for significance of difference in weight between pre-test and post-test

	Mean	Mean Difference	Std Error of Difference	t-value
Pre test	81.02	3.38	0.32	10.46*
Post test	77.64			
t ₀₅ (df=4) = 2.77 *. significant at 0.05 level				

From table -1 it was observed that the t-value 10.46 was significant at 0.05 level as the mean value of weight at the time of post-test (77.64) is lower than the mean value of pre-test (81.02) and the difference was found significant statistically, therefore, it may be interrupted that walking is very helpful for overweight and obese people.

Table -2: t-test for significance of difference in cholesterol level between pre-test and post-test

	Mean	Mean Difference	Std Error of Difference	t-value
Pre test	182.2	10.3	11.07	0.93*
Post test	171.9			
t ₀₅ (df=4)=2.77 *. significant at 0.05 level				

From table -2 it was observed that the t-value 0.93 was significant at 0.05 level as the mean value of cholesterol at the time of post-test (171.9) is lower than the mean value of pre-test (182.2) and the difference was found significant statistically, therefore, it may be interrupted that walking is very helpful for the people with high level of cholesterol.

Statistical calculation of Experimental group-II

Table -1: t-test for significance of difference in weight between pre-test and post-test

	Mean	Mean Difference	Std Error of Difference	t-value
Pre test	78.72	3.58	0.23	14.21*
Post test	75.14			
t ₀₅ (df=4)=2.77 *. significant at 0.05 level				

From table -1 it was observed that the t-value 14.21 was significant at 0.05 level.as the mean value of weight at the time of post-test (75.14) is lower than the mean value of pre-test (78.72) and the difference was found significant statistically, therefore, it may be interrupted that walking is very helpful for overweight and obese people.

Table -2: t-test for significance of difference in cholesterol level between pre-test and post-test

	Mean	Mean Difference	Std Error of Difference	t-value
Pre test	230.2	31.8	9.69	3.28*
Post test	198.4			
t ₀₅ (df=4)=2.77 *. significant at 0.05 level				

From table -2 it was observed that the t-value 3.28 was significant at 0.05 level.as the mean value of weight at the time of post-test (230.2) is lower than the mean value of pre-test (198.4) and the difference was found significant statistically, therefore, it may be interrupted that walking is very helpful for people with high level of cholesterol.

Conclusions-

Within the limitations of the present study, the following conclusions may be drawn.

1. Experimental group-II is showing better result than Experimental group-I in both parameters.
2. Both types of walking is effective for the people with overweight and high level of cholesterol.
3. Both types of walking is beneficial for health but type-II walking is looking more effective.

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