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## A comparative study of different strategies employed by obese adult males for weight loss

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### Abstract

Objective of the study was to compare the different strategies of weight loss employed by obese adult males for weight loss. 30 obese adult male clients from regular commercial centers were randomly selected for this study. Age of the subjects were ranging from 30 years to 40 years and the average age was 35 years. The collected data was analyzed through one-way Anova to compare the effectiveness of three treatment i.e., electronic muscular stimulation programme, massage application programme and exercise programme for body weight loss among obese male adults and the significance level was set at 0.05. Statistically no significant differences were founded in this study among electronic muscular stimulation programme, massage application programme and exercise programme on body weight in kilograms of obese adult male participants group. On the basis of the results and findings it was concluded that 12 weeks programme of three different strategies i.e. electronic muscular stimulation programme, massage application programme alone and exercise programme; alone were not an effective intervention for weight loss among obese adult males respectively.

**Keywords:** Electronic muscular stimulation, weight loss, obesity

### Introduction

In the beginning of the third millennium, the obesity and overweight were become the most frequent global metabolic disease (McLellan 2002) [2] and increasing prevalence of this disease has been shown not only in the industrially developed countries, but also in the developing countries. This has concerns with all the age categories and the prevalence of obesity varies remarkably across the countries with different socioeconomic development levels (Popkin 2006; Vijayalakshmi *et al.* 2002; Wang 2001) [3, 4, 5]. Indeed, World Health Organization (WHO 2002, 2000, 1998) [8, 9, 10] data from the “Global Database on Obesity and Body Mass Index (BMI)” showed that global obesity (BMI > 30 kg m<sup>-2</sup>) was 8.7% among adults in 84 countries from 1999 to 2000 in the world.

Worldwide, the occurrence of obesity and overweight has accelerated rapidly and tripled since 1975 and, further, it had reached to more than 1.9 billion overweight and 650 million obese adults respectively in 2014. And, the WHO has already estimated as well as predicted that more than two thirds of global burden of diseases i.e., chronic NCD's will be associated with diet and physical activity (WHO, 2002) [8]. Further, for this epidemic situation, the WHO had adopted the “WHO Global Strategy on Diets, Regular Physical Activity and Health” in the “World Health Assembly 2004” to illuminates the actions which were needed to support healthy diets and regular physical activity to prevent overweight and obesity at the population level (WHO, 2004) [7].

But in fact, the fundamental causes of obesity and overweight is an energy imbalance between calories consumed and calories expended and a decrease in physical activity due to the increasingly sedentary persons. Now the days, adult obese males were embarking to different commercial weight management physique correction treatments due to their lifestyle modification failures and these programmes were offering machine treatments involving electronic stimulation, manual therapies involving deep tissue massage techniques,

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surgical procedures, pharmacotherapy solutions and exercise interventions etc. to meet their desired body composition for better appearance as per these commercial centers guaranteed claims. Hence, the above facts were leads the investigator to compare the effectiveness of these different strategies i.e., electronic muscular stimulation programme, massage application programme, and exercise programme undertaken by obese adult males for weight loss.

**Purpose**

The purpose of the study was to compare the effectiveness of different strategies i.e., electronic muscular stimulation programme, massage application programme, and exercise programme employed by obese adult males for body weight loss.

**Methodology**

**Selection of Subjects:** Regular commercial center’s 30 obese adult male clients were selected randomly for this study. Further, the subjects were divided into three treatment groups for weight loss i.e., electronic muscular stimulation programme group (EMSPG), massage application programme group (MAPG) and exercise programme group (EPG) containing 10 subjects in each group. Age of the subjects were ranging from 30 years to 40 years of age and average age was being 35 years.

**Selection of Variables:** Body weight was selected as a dependent variable and 12 weeks of electronic muscular stimulation programme, massage application programme and exercise programme were selected as independent variables

respectively.

**Test and Criterion Measure:** Anthropometric measurement i.e., body weight was recorded in kilograms to nearest 0.01 grams by using electronic digital portable weighing machine.

**Different Strategies Procedure:** The electronic muscular stimulation programme and massage application programme two times a week for 45 minutes per day treatment sessions were given to these selected groups obese adult males respectively. And, for exercise programme selected subjects were practiced four times a week for 45 minutes per day involving in cardio, calisthenics, and strength combination exercises as suggested and supervised by their respective commercial centers for a period of 12 weeks.

**Collection of Data:** Pre and post data before the commencement and after the completion of the above mentioned programmes were obtained respectively from their respective joined centers with permission and with the concert of the selected subjects for the present study.

**Statistical Technique:** Further, the one way analysis of variance (Anova) was applied to compare the effectiveness of three treatment i.e., electronic muscular stimulation programme, massage application programme and exercise programme for body weight loss among obese male adults and the significance level was set at 0.05.

**Findings:** The findings of this study are as follows:

**Table 1:** One Way analysis of 12 weeks of treatment by three groups obese adult males exposed to electronic muscular stimulation programme group, massage application programme group and exercise programme group on body weight in kilograms

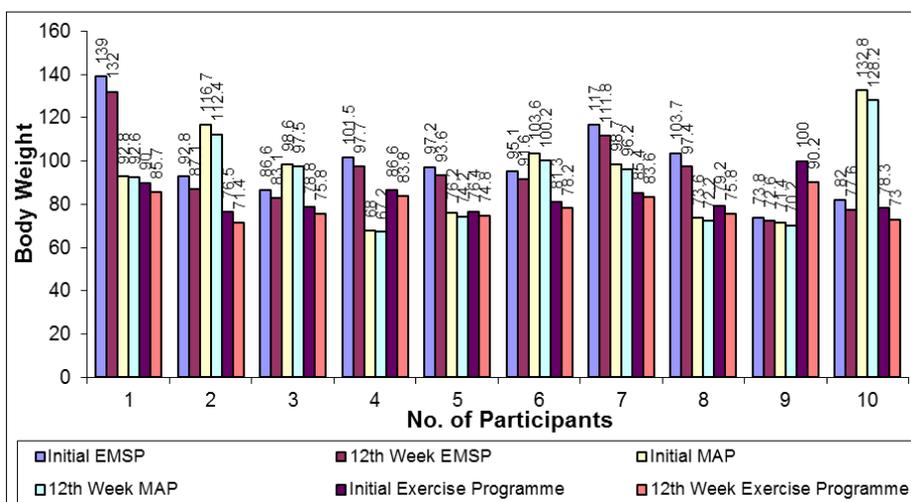
	Sum of Squares	Df	Mean Square	F
Between Groups	1292.003	2	646.001	2.592
Within Groups	6729.927	27	249.257	
Total	8021.930	29		

N = 30

\* Significant at .05 level. F .05 (3,36)= 2.87

Table no. 1 exhibited the one-way anova analysis of variance of final scores after 12 weeks of treatment by three groups exposed to electronic muscular stimulation programme, massage application programme and exercise programme on

body weight in kilograms of obese adult male participants group differs insignificantly, as the obtained F value of 2.592 was slightly lesser than the required value of 2.87 at 0.05 level of confidence.



**Fig 1:** Graph represents one way analysis of final scores after 12 weeks of training by three groups exposed to electronic muscular stimulation programme (EMSP), massage application programme (map), and exercise programme on body weight of male participants (in kg)

## Discussion

Findings of this study indicated the comparative effectiveness of 12 weeks of selected different strategies i.e., electronic muscular stimulation programme, massage application programme and exercise programme were founded statistically insignificant group differences among selected obese adult males subjects on body weight variable. This insignificant group differences were due to the fact that electronic muscular stimulation programme alone and massage application programme alone and exercise programme alone were not an effective intervention for weight loss among obese adult males respectively. Young *et al.* (2012) <sup>[11]</sup> reviewed and compared the success of body weight loss and body weight loss maintenance interventions and the findings of the present study suggested that limited calorie diets per day combining with exercise were better operational strategy linked with body weight loss significant results in males. Additionally, Williams *et al.* (2015) <sup>[6]</sup> also reviewed and compared the effectiveness of weight loss interventions and reported the similar findings that lifestyle modifications i.e., restricted diet and prescribed exercise routine more effective intervention for body weight loss. Further, Kemmler *et al.*, (2016) <sup>[1]</sup> concluded the compared the effectiveness of 16 weeks of whole-body electro mayo stimulation and high-intensity (resistance) exercise practice among males and reported statistically no significant group differences between selected middle-aged male subjects on body composition.

## Conclusion

The findings of this study revealed statistically no significant difference in comparison of 12 weeks programme of three different type of strategies i.e. electronic muscular stimulation programme, massage application programme and exercise programme on the for weight loss in obese adult males. Based on the present study results and findings, it is concluded that electronic muscular stimulation programme, massage application programme alone and exercise programme; alone were not an effective intervention for weight loss among obese adult males respectively.

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