

The Effect of the Weight Watchers Diet on the Body Composition and Blood Parameters in Obese Men.

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Abstract:

The purpose of this study is to determine how a short-term diet program altered body shape and blood variables in obese men in Garmian-Kurdistan (Iraq). A total of 40 obese men were the sample of this investigation. The diet program is the sole focus of weight loss. Body fat, Basel metabolic rate (BMR), and body mass index (BMI) were all calculated to assess body composition. Blood variables comprising total cholesterol, triglycerides (TG), systolic and diastolic respiratory rate were assessed prior to and following the short-term weight loss. Weight, body fat, BMR, and BMI all reduced considerably in the post-test ($t = 3.978$ P value 0.07, $t = 4.895$ P value 0.02, $t = 3.202$ P value 0.003, and $t = 1.182$ P value 0.02, respectively). The last test revealed a significant reduction in the levels of total cholesterol ($t = 9.711$ P value 0.002), TG ($t = 6.579$ P value 0.06), systolic ($t = 1.099$ P value 0.01), and diastolic ($t = 1.297$ P value 0.01) blood pressure. As the detrimental effects of total cholesterol and TG on blood pressure gradually increase patient's health, conclusion during a month, both low-carbohydrate and low-fat dietary regimens shown more prominent weight loss results compared to people who did not experience any dietary mediation. In spite of the fact that there were slight varieties in weight loss among individuals, these disparities are unlikely to hold significant importance for people looking for to shed pounds. Consequently, this finding fortifies the recommendation of endorsing a diet program to patients pointing to achieve weight loss. It is anticipated that recommendations for a diet program without health risks would be necessary.

Introduction:

Obesity is becoming a more common health problem in society today (1). Obesity is linked to an increased risk of gallbladder disease (2), hypertension (3, 4), diabetes (5, 6), coronary heart disease (CHD), osteoarthritis, cancer death (7), and a shorter life expectancy (8, 9). Obesity has been linked to negative social and psychological repercussions such as

bias (10), discrimination (11), and a lower quality of life (12, 13). Obesity control requires more effective treatment strategies immediately (14). Obesity appears to be linked to total caloric intake (15) or energy density of one's diet and a diet that generates a negative energy balance remains an important aspect of obesity management (16, 17). Reducing the caloric density of meals while increasing food volume are two strategies for achieving the challenging task of eating less than desired by adding fluids (18, 19), bulk (20, 21) or their combination (22) or by enhancing satiety with various anorectic medications or high-satiety macronutrient combinations. Satiety is linked to the amount of protein, fiber, and water in diets, as well as the amount of fat and palatability (23, 24). However, there may be a twofold difference in satiety ratings within food groups, implying that certain meals promote greater satiety regardless of macronutrient amount or energy density (25, 26). Obesity affects people all over the world, with 10.8% of men and 14.9% of women having a BMI of less than 30 kg/m² (27). Dietary changes, a sedentary lifestyle, stunting, the promotion of high-fat foods, and a negative body image are all possible risk factors for obesity in the Eastern Mediterranean region (28). Moreover, the likelihood of experiencing overweight or obesity escalates as individuals grow older (29, 30) and older age (31, 32). As a result, the purpose of this study was to (a) determine the effects of short-term weight loss on body composition and blood variables in obese males. (b) To look into any issues that may arise throughout those weight-loss periods, and (c) to recommend the most successful and non-harmful weight-loss technique.

Method

Participants

A group of 60 males were enlisted from the obese population. Nevertheless, 20 individuals had to be excluded from the sample due to medical conditions such as COVID-19, heart disease, kidney illness, and diabetes. Consequently, the final group consisted of 40 obese men. Healthy volunteers, with an average age (mean SD: age = 33.75 4.74years) were invited to partake in the dietary intervention program. This study incorporated existing knowledge and general test results, along with the laboratory facilities offered by Jihan Clinical & Lab in Kalar (Garmian).

Diet

We have incorporated meal plans that provide daily macronutrient and calorie intake recommendations for a specific duration of 4 weeks, following the WW (Weight Watchers) diet. The WW diet is recognized as one of the few effective weight-loss plans that align with the U.S. Dietary Guidelines (33). It also adheres to the weight-loss behavioral lifestyle interventions standards set by the Food and Drug Administration. Expert panels such as the obesity society (TOS), the American college of

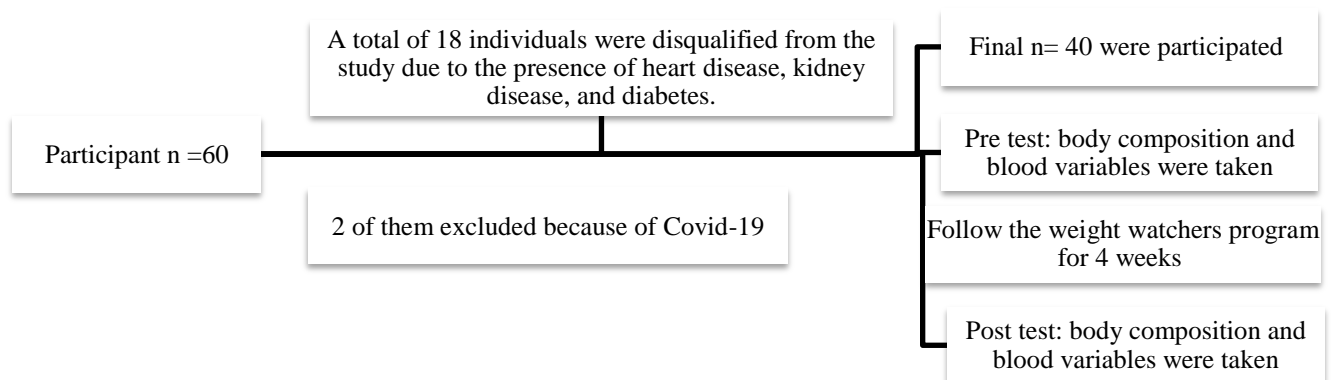
Cardiology (ACC), the American Heart Association (AHA), the United Kingdom's National Institute for Health and Care Excellence, and the Australian government's National Health and Medical Research Council have endorsed this approach. In this program, participants are required to track their daily points, with each point equivalent to approximately 50 calories, based on their current weight and weight loss goals (34). Although there is no specific recommendation for macronutrient intake, this program largely aligns with the acceptable macronutrient distribution ranges for adults outlined by the National Academy of Sciences, which suggest 45-65% carbohydrates, 10-35% protein, and 20-35% fats. While meal replacement options are allowed, they must primarily consist of natural foods and should not contain any pharmacological substances.

Criteria for Eligibility

In order to investigate the effects of a popular brand diet on obese men, we conducted a randomized clinical trial (RCT). The participants in this study were obese men aged 22-39 years, with a body mass index (BMI) of 30 or higher. The RCT involved assigning these individuals to follow the popular brand diet, as outlined in our study protocol (35). We specifically included RCTs with a follow-up period of at least 4 weeks, which demonstrated either weight loss or a reduction in BMI.

For our study, we selected a sample of 40 men from Garmian-Kurdistan/Iraq. It is worth noting that the majority of these participants were physically inactive. The main focus of our diet program was to assess changes in body composition.

Table 1: Time line for the tests



The experimental design

The purpose of this study was to see how an obese man would respond to a four-week diet program, and all came to the lab on two separate occasions, one for pre-test and the other for post-test.

Table 2: Physical characteristics of the subjects (n=40)

Characteristic	Mean, SD
Age (yr)	33.75 ± 4.74
Height (cm)	172.9 ± 4.36
Weight (kg) ²	94.6 ± 5.97
Body mass index (kg/m ²)	31.62 ± 1.23

A total of 60 male participants hailing from Garmian-Iraq were recruited for this research endeavor. However, a subset of 20 individuals had to be excluded from the study due to health concerns. The age range of the remaining participants spanned from 22 to 39 years, with a notable proportion of them leading sedentary lifestyles. The dietary intervention implemented aimed at enhancing both body composition and blood parameters.

Experimental procedures

The data collection involved various measurements pertaining to body composition and blood variables. Specifically, weight, body fat, Basel metabolic rate (BMR), and body mass index (BMI) were determined using a body analysis technique known as GS6.5 B. S161118S1544, manufactured conducted in Guangdong-China. Blood samples were obtained from the antecubital vein both before and after the test. The levels of TG and cholesterol in the blood, as well as systolic and diastolic blood pressure, were measured using the Cobas e 411 analyzer, manufactured by Roche Diagnostics GmbH in Germany. To facilitate the weight loss process over a 3-day period, a nutritionist provided guidance in implementing the Weight Watchers (WW) diet program. During this time, participants consumed only half of their usual calorie intake, with their diets consisting of 55% carbohydrates, 35% fat, and 10% protein.

Analytical statistics

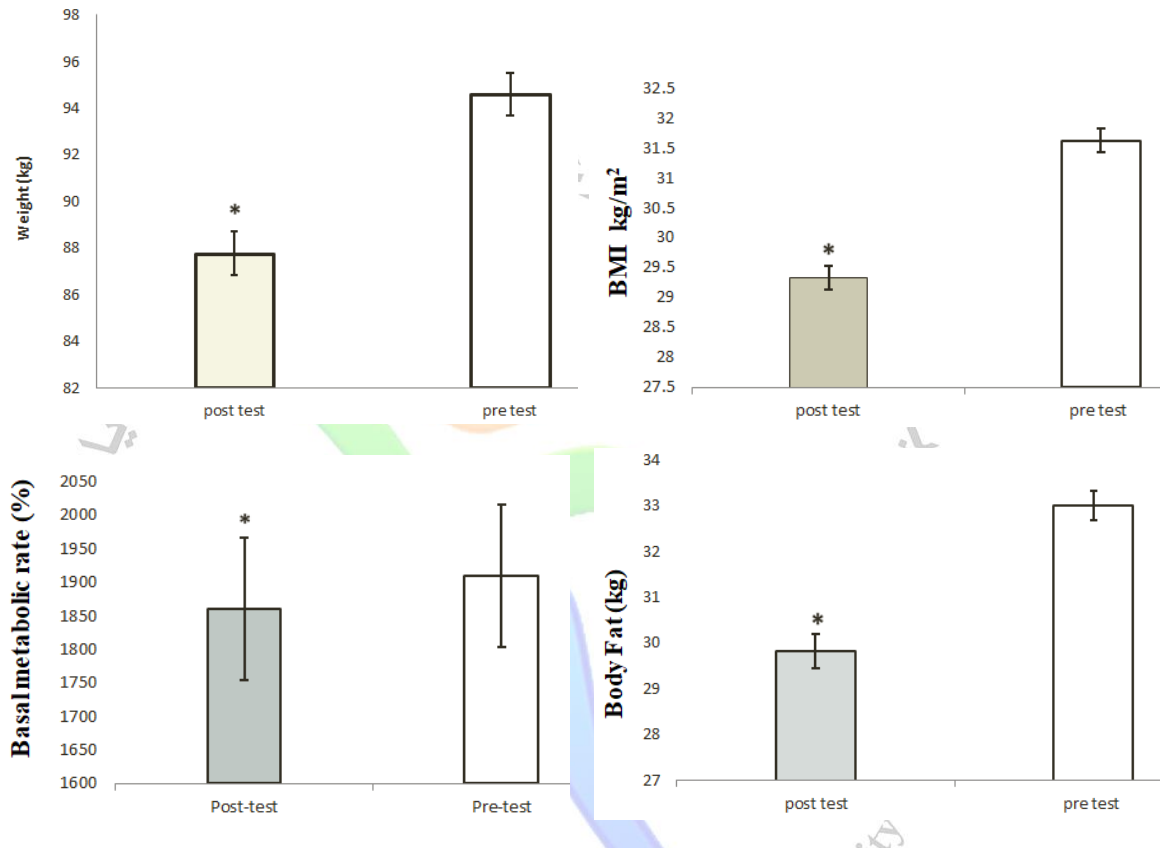
To identify differences in body composition and blood variables before and after the 4-weeks, data were analyzed using IBM SPSS Statistics ver. 25.0 (IBM Co., Armonk, NY, USA) Paired Sample T-Test for Means. Statistical significance was set at P 0.05 for all tests.

Result

Table 3 presents the alterations in body composition following a four-week period of short-term weight loss. The results indicate notable discrepancies between the pre and post-tests. Specifically, the weight exhibited a significant change ($t = 3.978$, $P = 0.07$), as did the BMI ($t = 4.895$, $P = 0.02$), body fat ($t = 3.202$, $P = 0.003$), and BMR ($t = 1.182$, $P = 0.02$).

Table 3: illustrates the alterations in body composition.

Variable	Pre-test	Post-test	<i>t</i>	P value
Weight (kg) ²	94.6 ± 5.97	87.75 ± 5.71	3.978	0.07
BMI (kg/m ²) ²	31.62 ± 1.23	29.33 ± 1.24	4.895	0.02
Body fat (kg)	33 ± 2.06	29.82 ± 2.28	3.202	0.003
Basal metabolic rate (%)	1910.3 ± 673.76	1860.2 ± 642.2	1.182	0.02

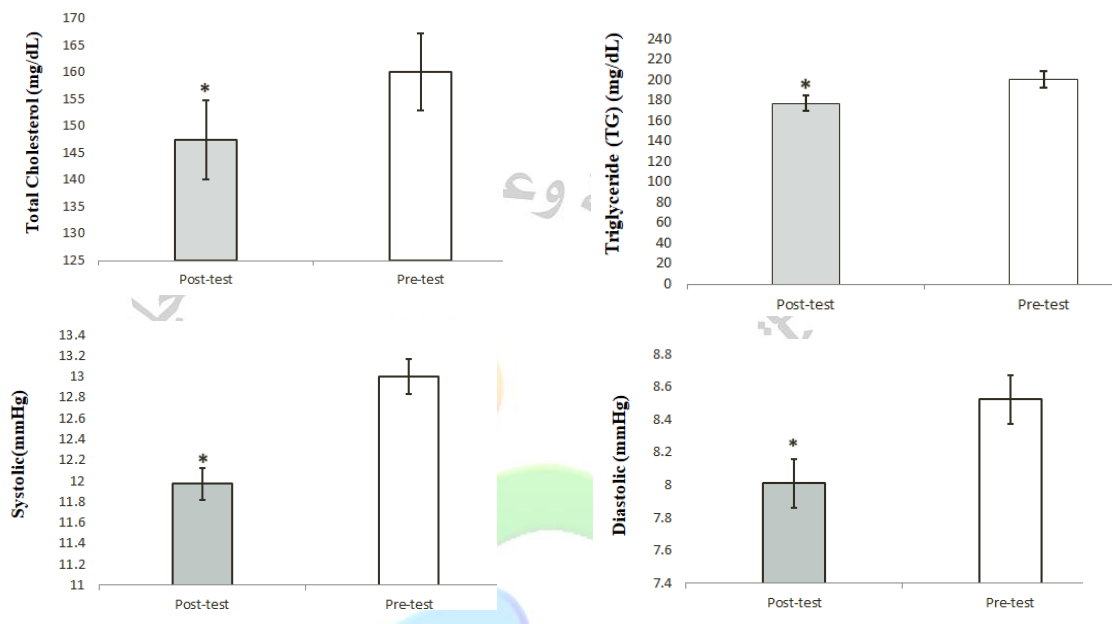


The Graphs presented depict the variances observed in body composition before and after conducting the tests.

Table 4 displays the changes in blood parameters following a four-week period of short-term weight loss, as evidenced by the research findings. Notably, there were significant reductions in the levels of total cholesterol ($t = 9.711$, $P = 0.002$), TG ($t = 6.579$, $P = 0.06$), Systolic ($t = 1.099$, $P = 0.01$), and Diastolic ($t = 1.297$, $P = 0.01$). These findings emphasize the noteworthy disparities observed in the blood variables prior to and after the implementation of the weight loss intervention.

Table 4: Changes in blood variables

Variable	Pre	Post	<i>t</i>	<i>P</i> -value
Total cholesterol (mg/dL)	160 ± 45.51	147.42 ± 46.14	9.711	0.002
Triglyceride (TG) (mg/dL)	200.47 ± 49.88	176.87 ± 46.14	6.579	0.06
Systolic(mmHg)	13 ± 1.04	11.975 ± 0.96	1.099	0.01
Diastolic (mmHg)	8.52 ± 0.14	8.01 ± 0.12	1.297	0.01



The graphs presented depict the variances observed in body composition before and after conducting the tests.

Discussion

The results of this investigation revealed that alterations in body composition resulting from temporary weight reduction had minimal impact on body fat levels, in contrast to previous research that indicated notable reductions in body fluid, lean body mass, and overall body weight (36, 37, 38, and 39). In the realm of blood parameters, there was a notable reduction observed in total cholesterol, triglycerides, as well as systolic and diastolic blood pressure. A group of specialists have uncovered that temporary weight loss brings about modifications in the functioning of blood lipids and antioxidants, as per their findings. (40, 41, 42). These findings back up previous weight-reduction guidelines, indicating that most calorie-restricting diets result in clinically significant weight loss if followed for the duration of the plan (43). Based on the research findings, showed malnutrition resulting from weight loss and the loss of lean body mass due to a brief dietary regimen leads to a decline in body fat, basal metabolic rate, and cardiopulmonary function. Conversely, the Weight Watcher diet has shown potential in reducing short-term blood variables

including total cholesterol, triglycerides, and blood pressure. These conclusions align with previous studies conducted in this field. (44), we reported that weight loss slowed after 4 weeks, suggesting that future dietary program trials should concentrate on long-term weight maintenance (45). Our results suggest that patients should choose the diet program that has the fewest challenges to adherence among those associated with the greatest weight loss. Although our study focused on diet programs and strategies, patients may have more options as they try to stick to diet and lifestyle adjustments. Blood parameters play a vital role in assessing health status and physical performance, whether in obese individuals or athletes. In the case of obesity, changes in body composition and blood parameters, such as elevated triglyceride levels and decreased insulin sensitivity, negatively affect physical and health efficiency. In contrast, high athletic performance requires optimal levels of blood components, which enhance the blood's ability to carry oxygen. Therefore, regulating blood parameters through diet or natural supplements directly contributes to improving athletic performance by supporting physiological balance and increasing metabolic efficiency in athletes compared to non-athletes or obese individuals. (HAIDAR:2019: 765)

Conclusions

During a month, both low-carbohydrate and low-fat dietary regimens exhibited greater weight loss outcomes compared to individuals who did not undergo any dietary intervention. Although there were slight variations in weight loss among individuals, these disparities are unlikely to hold significant importance for individuals seeking to shed pounds. Moreover Obesity is a standalone risk element for the advancement and worsening of hypertension, cardiovascular disease, and chronic heart disease. Consequently, this finding reinforces the recommendation of prescribing a diet program to patients aiming to achieve weight loss.

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