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ROLE OF EXERCISES AND DIETARY INTAKE AS AN INTERVENTION IN WEIGHT REDUCTION

[1]Mohammad Sarfaraz khan
[2]Rubina Kanwal
[3]Erum Naz
[4]Umesh kumar
[5]Saadia Pervaiz
[6]Saifullah Khalid
[7]Neelam Noor Gichki
[8]Shireen khanzada

ABSTRACT

Background: Obesity is now so common within the world's population that it is beginning to replace under nutrition and infectious disease as the most significant contributor to ill health. Exercise plays significance role with dietary control in weight reduction. The aim of our study is to find out the efficacy of weight reduction interventions and role of exercise.

Methods: The study was conducted on 60 participants, subjects or participants were randomly divided. It is an experimental study which was completed in the duration of about six months. The study was based on two groups that are group A (exercise plus dietary) and group B (only dietary) consisting of sixty participants after filling the consent form.

Result: Result shows out of these sixty only fifty eight participants completed the study and were observed for four months. Is has been found comparable weight loss relatively fewer in the dietary group Body weight before (80.1±2.7) after (78.1±2.5)and BMI before (32±2) after (30±2) it shows significant results but less significant than group A body weight which was before(78.6±2.6) after(64.0±2.3) and BMI before (33±1) after (39±1). Therefore the results shows that the group A shows more significant outcomes as compare to the other group included in the study.

Conclusion: The results shows that (exercise plus dietary) more significant outcomes as compare to the other group included in the study

Keywords: Anne Collins, weight reduction, exercises plus dietary, dietary, BMI and body weight.

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[2]In charge Healing System,
Healing System Hospital, Karachi, Pakistan
[3]Senior lecturer IPM&R,
Dow University, Karachi 74200, Pakistan.
[4]Physiotherapists IPM&R
Dow University, Karachi 74200, Pakistan.
[5]Assistant manager Tabba Heart Hospital,
Karachi, Pakistan.
[6]Lecturer IPM&R, Dow University,
Karachi 74200, Pakistan.
7Senior Coordinator, Cardiac Rehabilitation
Program, Aga Khan University Hospital,
Karachi, Pakistan.
[8]Physiotherapist, IPM&R
Dow University, Karachi 74200, Pakistan.

CORRESPONDING AUTHOR

[1]Mohammad Sarfaraz khan

Assistant professor IPM&R
Dow University,
Karachi 74200,
Pakistan.

INTRODUCTION

Obesity is now so common within the world's population that it is beginning to replace under nutrition and infectious disease as the most significant contributor to ill health. In particular, obesity is associated with diabetes mellitus, coronary heart disease, certain forms of cancers and sleep disorders. Obesity is defined by a body-mass index (weight divided by square of the height) of 30 kg m -2 or greater, but this does not take into account the morbidity and mortality associated with more modest degrees of overweight, nor the detrimental effect of intra-abdominal fat. Obesity causes or exacerbates many health problems, both independently and in associated with other disease [1]. The basic necessity to sustain life after fulfillment of oxygen demand is food. Observant to diet can keep a person in healthy zone but problem starts when this balance is lost; resulting either in overweight, obesity or underweight [2]. Each of these having different devastating effects on generalized health of a person [3]. Nowadays obesity is becoming global epidemic as a result of amalgamation of genetic susceptibility, easily accessible high-energy foods and decreased requirement for physical activity in modern society [4]. Furthermore, it is beginning to replace under nutrition and infectious diseases which previously were assumed as the most significant contributor to ill health [5]. This rapid increase in the prevalence of overweight and obesity indicates social, environmental and behavioral changes rather than hereditary factor [6,7,8]. In addition, diabetes mellitus; obesity is linked with, certain forms of cancer, coronary heart disease and sleep-breathing disorders [9]. An individual can be assessed of his body shape by ratio of height and weight called body-mass index (weight divided by square of the height). The person is said to be overweight when have a BMI 25-29.9 kg m –2 and incase of obesity this ranges to 30 kg m –2 or greater [10]. It is also important to consider that obesity is no longer being regarded simply as a cosmetic problem affecting certain individuals, but an epidemic that threatens global well being [11] and according to WHO, nearly one in every three people worldwide is projected to be overweight and one in ten is expected to be obese [12]. Now, there are many ways to estimate body fat percentage like In clinical practice, body fat is most commonly and simply estimated by using a BMI formula and the underlying assumption is that most variation in weight for persons of the same height is due to fat mass [13]. Other methods available to calculate total body fat are bodpod, bioelectrical impedance analysis, skin fold measurement [14,15] etc. Reduction of body weight/fat is the hottest scoop of time where different people use different strategies, some people exercise, some do the crash diets, some follow combination of different diets and exercise plans but the goal remains the same that is weight reduction. A randomized controlled trial conducted on three groups byKatzel et al.revealed10% weight loss in diet induced group but, interestingly, there was no change in weight in aerobic group yet showed improvement in aerobic capacity where control group demonstrated no significant change [16,17,18]. Similarly Colak R, Ozcelik took two groups for intervention, one with diet-orlistate and second with diet-orlistate plus exercise group and concluded that exercise group caused significant decrease in total body weight as compared to diet-orlistate [19]. Another research conducted by Andrea R. Josse et al. showed that the diet and exercise induced weight loss with high protein and increased dairy products intakes promotes more favorable body composition changes in women characterized by greater total and visceral fat loss and lean mass gain[20]. To the best of our knowledge no such study in Pakistan has ever been conducted to see the Role of exercises and dietary intake as an intervention in weight reduction and most of the population is still confused in this regard. uncertainty to choose the ways that is to diet or exercise or do a combination to achieve weight loss that's still prevails highly in our society so that's the reason of conducting this research with the aim to find out the efficacy and better way of weight reduction intervention to benefit the society and to clear their visions and understanding.

METHODOLOGY

The study was conducted on 60 participants at the Aga khan university hospital and Shahab medical centre where subjects or participants were randomly divided. It is an experimental study which was completed in the duration of about six months. The whole study was conducted successfully without any kind of interruption or incontinence.

Sampling Techniques

It was a Simple random sampling technique through which participants are selected to precede the study further to minimize the biasness.

Inclusion criteria

Male and female overweight or obese patients between 20 to 35 years with BMI >25 kg/m^2 and <35 kg/m^2 were taken.

Exclusion criteria

Patients with recent history of Myocardial Infarction (MI), chronic infections, Central Nervous System (CNS) disorders, cardiopulmonary and orthopedic involvement and patients diagnosed with osteoporosis were excluded from this study. Patients with hepatic and metabolic insufficiency were excluded as well.

Demographic details

Total material is based on the demographic details include the age, sex, height, weight and BMI.

Data collection procedure

Clients coming to two tertiary care hospitals were included in this study. The subjects were randomly divided while collecting the data and fulfilling the requirements of the study.

Those who fulfilled the inclusion criteria were asked to sign the informed consent after being explained the objectives and duration of the study. On the choice of the participants they were assigned either to the exercise plus diet group (Ex. D) or diet group (D).All the participants were

interviewed and were asked to fill the questionnaire at the time of induction in the study. The questionnaire consisted of close ended questions. First part recorded the demographic and anthropometric profile of the patients and the second part of questionnaire was based on their own body type perception, eating habits, exercise habits and life style. The sample consisted of 60 participants, 30 participants each, coming to sports centre of Aga Khan University Hospital and Shahab Medical Centre respectively. Out of these 30 participants from each hospital 15 were added into Exercise plus diet group and other 15 were added into Diet group.

Exercise plus diet following group was given Anne Collins weight loss diet plan and an exercise plan,5 minutes warm up, 20 minutes treadmill (5 km/hour) and 25 minutes cross trainer (120 strides/minute), 5 min cool down and stretching routine whereas diet group was given Anne Collins weight loss diet plan only. Voluntary consent was taken from the clients and confidentiality assurance was provided to those who agreed to participate in the study.

Data was entered and analyzed on SPSS version 20

RESULT

Fifty eight participants completed the study and were observed for 4 months. Significant reductions in body weight were observed in both the groups however diet associated with exercise produced a greater initial weight loss than diet alone.

The descriptive statistics table1 provides useful statistics for groups exercise and

exercise plus diet.

Table 1: Pre and Post values of exercise and diet group

	Exercise plus Diet		Diet	
	Before	After	Before	After
Body weight	78.6±2.6	64.0±2.3	80.1±2.7	78.1±2.5
BMI	33±1	39±1	32±2	30±2

Before and after effects (table 1)

The difference observed before and after the intervention showed considerable results and decrease in body weight and BMI. The sample which we have chosen is 60 (exercise and Exercise plus diet) ranges from the age of 20 to 35. By aerobic exercise, mean things like cycling, walking, rowing or jogging usually performed for between 20 and 60 minutes in the so-called aerobic training zone. Despite what we are been told, aerobic exercise has very little effect on weight loss. There is been enough research over last 25 years to convince almost any one that aerobic exercise are not a very effective way to promote weight loss but when combined with dieting they give the best results.

DISCUSSION

This research was primarily on the two groups that is exercise plus diet group and only diet group, but after the study completed treatment seeking group to see the difference in the results that is weight reduction. The reality is one should stick to a well planned and well balance programme in which one can lose 1-2 pounds of weight in a week without losing the water component and muscle mass because this is the mass which is necessary for the daily activity livings. Group A (diet following group) showed better results in teams of weight reduction. A randomized controlled trial conducted by Katzel et al. on ""Effects of weight loss and aerobic exercise training on risk factors for coronary disease in healthy, obese person and middle-aged and older indivials, to evaluate the changes in body composition, maximal aerobic capacity, blood pressure, lipoprotein and glucose tolerance. 170 participants were taken and divided in three groups, one with diet-induced weight loss, second with aerobic exercise training and third was control group and results showed 10% weight loss in diet induced group. Interestingly there was no change in weight in aerobic group but did improve aerobic capacity where control group showed no significant change [21]. Colak R, Ozcelik conducted a research on Effects of short-period exercise training and orlistat therapy on body composition and maximal power production capacity in obese patients." He took two groups for intervention, one with diet –orlistateand second with diet-orlistate plus exercise group and concluded that exercise group caused significant decrease in total body weight as compared to diet-orlistateonly [22,23]. Another research conducted by Andrea R. Josse et al. on "Increased Consumption of Dairy Foods and Protein during Diet- and Exercise-Induced Weight Loss Promotes Fat Mass Loss and Lean Mass Gain in Overweight and Obese Premenopausal Women" concluded that the diet and exercise induced weight loss with high protein and increased dairy products intakes promotes more favorable body composition changes in women characterized by greater total and visceral fat loss and lean mass gain [24,25].

McTigueet al28 reported that counseling on diet or physical exercise and behavioral interventions resulted in small to moderate degree [26]. Most people begin an exercise programme designed for weight loss with the intention of sticking with it. Unfortunately, the majority of clients give up after the study completed, deciding they simply don't have the time to exercise regularly. For many people, the benefits of aerobic exercises are not enough to justify the time and effort you put in. however any good salesperson will tell you that we don't make decision based on intellectual reasoning. We base them on emotion. The problem comes when there is a conflict between the results you expect from aerobic exercise, and what you actually get. Many people starting an exercise programme are told they can expect to lose around two pounds of fat each lies with you mean the metabolism is slow or you are getting older or it's in the genetics. There are usually two reasons behind any decision, the real reason, and the one that sound good. The limitation of our study is time constraints. Research was based on self control so may be possible that participants do not follow diet plans as were suppose to follow. A bigger population would have given better results; funds

were not available for further investigation like body fat percentage analysis.

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