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Study on weight loss strategies followed by women in fitness centres

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Abstract

Introduction: Obesity and overweight leads to a number of serious health problems, including heart disease, diabetes, stroke, sleep apnea, osteoarthritis, gout, gall bladder disorder and some types of cancer. Nowadays, people are aware of such serious health problems due to increase in weight hence; they are trying to lose weight by going to gymnasiums. This study is based on the women going to gymnasium for weight loss and adapting several techniques to reduce their weight rapidly.

Aim: Study on weight loss strategies followed by women in fitness centres.

Methodology: A study was conducted on women who were going to fitness centres particularly for weight loss. The study was carried out with a total sample size of 100 participants in Mumbai city of which some were suffering from PCOD, diabetes, hypothyroidism, obesity, overweight and some were menopausal women. Women who were coming to these fitness centres to gain weight and suffering from chronic diseases were excluded. A self-administered questionnaire consisting of open and close ended questions was administered to women going to these fitness centres for weight loss. The questionnaire contained the client's personal information, anthropometric measurements, medical history, personal habits, lifestyle pattern, physical activity and exercise pattern, nutrition and fitness goals & weight loss strategies. The strategies used by them in these fitness centres were nutritional supplements, weight loss pills, crash diets, meal replacers and fat burning techniques. Dietary recall of 3 days was taken. The data analysis was done using statistical package of social sciences (SPSS, version 16). ($P < 0.05$) was considered to be statistically significant & Chi square test was used to analyse the representation of cases.

Results: It was observed that mostly these women going to fitness centres were of 30-50 years of age and smoked hookah and drank alcohol daily and on weekly basis respectively. These women suffered from obesity, PCOD, thyroid and were in menopause phase ($p < 0.05$). It was also observed that these women went to fitness centres less than thrice a week ($p < 0.05$) and consumed mostly junk and food from outside or skipped meal ($p = 0.45$) or food item to lose weight rapidly ($p < 0.05$). They also practiced different methods of weight loss like taking nutritional supplements, weight loss pills, crash diets, fat burning techniques and meal replacers ($p < 0.05$) which were recommended by gym trainers mostly or by themselves, which lead them to several negative health effects ($p < 0.05$) like, bowel and/or psychological disorders, insomnia, dehydration, etc. The mean energy was 1969.12kcal ($p < 0.05$), mean Protein was 37.7g ($p < 0.05$), the mean Carbohydrate intake was around 99.8g ($p < 0.05$) for carbohydrate intake when compared with RDA.

Conclusion: It can be concluded from the study that calories, macronutrient and fibre consumption were found to be low. It was also observed that women in these fitness centres practiced wrong ways of losing weight, either by skipping meals or taking different nutritional supplements, weight loss pills, fat burning techniques, crash diets and meal replacers to decrease weight rapidly which may lead to several negative effects on their health. Nutrition and exercise along with good lifestyle habits and sufficient amount of additional nutrient intake according to their health status may be beneficial to lose weight.

Keywords: nutritional supplements, weight loss pills, meal replacers, crash diets, fat burning techniques.

Introduction

Obesity and overweight leads to a number of serious health problems, including heart disease, diabetes, stroke, sleep apnea, osteoarthritis, gout, gall bladder disorder and some types of cancer. Nowadays, people are aware of such serious health problems due to increase in weight hence; they are trying to lose weight by going to gymnasiums it's seen that women goes to gymnasium for weight loss and adapts several techniques to reduce their weight as soon as possible (KE. Foster-S, 2012) [13, 17]. Physical inactivity also has a dose-related, temporally consistent, and biologically plausible relationship to the same health outcomes as those as for

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obesity, and both obesity and inactivity have similar patterns of association with clinical risk indicators such as blood pressure, fasting plasma glucose, and inflammatory markers (Steven N. B, *et al*, 2004) [20]. In gymnasium they carry out different weight loss methods to lose weight by taking either balanced diet & physical activity or by taking weight loss drugs/pills & physical activity or weight loss supplements & physical activity or solely through exercise only. A few recent studies also claim that because of these rigorous weight loss methods women follow, there is a growing threat of Polycystic Ovarian Disorder and post-menopausal problem. A genetic predisposition toward obesity will only come into play only when the environment is right (Silver. S, 2012) [12]. Exercise can prevent or even reverse the effects of such serious diseases as mentioned above. Exercise lowers blood pressure and cholesterol, which may prevent a heart attack. Exercise is also known to help contribute to a sense of confidence and well-being, thus possibly lowering rates of anxiety and depression. Exercise is said to be helpful for weight loss and maintaining weight loss (Berryman, *et al*, 2010) [3]. A well-balanced diet includes low-calorie, nutrient dense foods such as fruits, vegetables, whole grains and lean proteins. These foods satisfy hunger while meeting nutrient needs in fewer calories to help maintain a healthy weight. The right foods reduce the risk for chronic disease; People who eat diets high in fats are at an increased risk for developing heart disease, diabetes and cancer (Jill C, *et al*, 2017) [15]. Diet supplements for many different reasons are used: to lose or gain weight, to restore lost nutrients, to build muscle tissue, to support physical functions like eyesight, to improve sleep or to boost energy (FDA & DSHE, 2005) [8]. Weight loss pills are used by those who do not want to sweat it out in gyms or have little time in hectic schedules. Ayurvedic and synthetic weight loss pills are being used to lose weight. Weight loss pills also have side effects which can vary from being mild to extremely dangerous. The most common side effect of weight loss pill is gastric complaints (Laura C, *et al*, 2013) [18]. Losing weight fast is what these diets aim at. Crash diets slow down body's metabolic rate. (Sandhya G, *et al*, 2017) [19]. There are different methods and machines for weight loss. The Gym and fitness centres now are using for rapid weight loss of the clients, these techniques used has many pros and cons which hampers the client's health (Rhian, 2010). Vibration plate machines may help overweight or obese people trim their belly fat and achieve long-term weight loss (Jennifer. W, 2009) [14].

Methodology

A study was conducted on women who were going to fitness centres particularly for weight loss. The study was carried out with a total sample size of 100 participants in Mumbai city. A self-administered questionnaire consisting of open and close ended questions was administered to women. The target group for the study was only women who were going for weight loss and didn't have any chronic disorders. The survey

information was gathered using a questionnaire. The data analysis was done using statistical package of social sciences (SPSS, version 16). ($P < 0.05$) was considered to be statistically significant & Chi square test was used to analyse the representation of cases.

Results & Discussion

Age of Study Group

The mean value of the study group on the basis of their age was 33.69. The standard deviation of the same group was 12.734 ($X^2=49.240, p=0.018$)

Anthropometric Measurements

Height & Weight of Study Group

The mean height was 159.96 and the standard deviation was 5.118 ($Z=88.880, p < 0.05$). The mean weight was 66.25 and the standard deviation was 13.351 ($Z=54.560, p=0.025$).

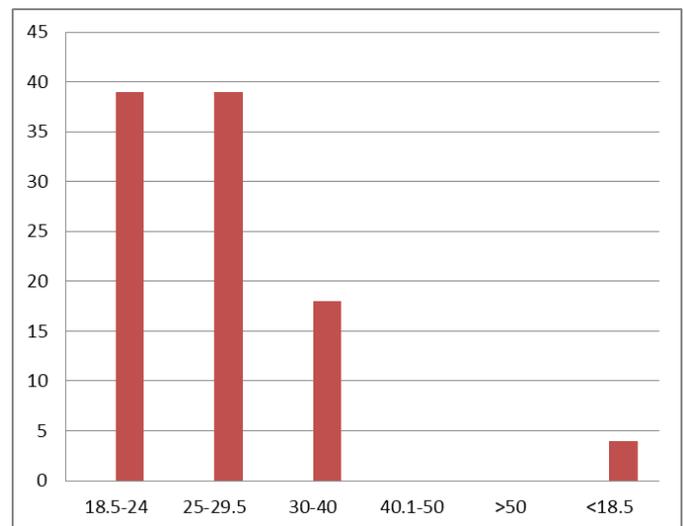


Fig 1: Basal Metabolic Index of Study Group

Figure No. 1 describes the BMI value of the study group. 39% of the participants had a normal body weight. Similarly, 39% of the participants were found to be over-weight, whereas 18% of the participants were obese and hardly 4% were underweight and none of them were in obese type 2 and type 3 category ($X^2=35.360, p < 0.001$).

In a study it was found that ghrelin levels are abnormally low after gastric bypass, raising the possibility that this operation reduces weight in part by suppressing ghrelin production. These data suggest that ghrelin antagonists may someday be considered in the treatment of obesity (David E.C, *et al*, 2002) [5].

In a study it was found that dietary weight loss, with or without exercise, significantly improved insulin resistance. Older women derived as much benefit as did the younger postmenopausal women (Caitilin. M, *et al*, 2011) [4].

Table 1: Lifestyle Pattern of Study Group

Habits	Options	Per cent	Chi square	P value
Smoking	Yes	54.0	70.560	0.000*
	No	46.0		
Alcohol consumption	Yes	54.0		
	No	46.0		
Consumption of caffeinated beverages per day	Tea	31.0	68.960	0.000*
	Coffee	10.0		
	Soda	12.0		

	Energy drinks	4.0		
	Lemon water	20.0		
	Green tea	11.0		
	Black coffee	6.0		
	All of the above	6.0		

Table 1. describes the lifestyle pattern of the study group. It was observed that 54% women smoked hookah ($X^2= 70.560, p<0.05$). 54% of the participants consumed alcohol & the consumption of the tea was the highest i.e. 31% ($X^2=68.960, p<0.05$).

Hookah smoking has increased worldwide, especially among youth, and has been identified as an emerging threat to public health. This study estimated the prevalence and transition rates in hookah smoking statuses and predictors of transitions

among a representative sample of Iranian high school students. Factors like, being male, regular cigarette smoking and positive attitude toward smoking were factors associated with students' transition to hookah smoking status. The incidence rate of hookah smoking in adolescents was notable. The findings identified the co-occurrence of risky behaviours that support programs aimed at reducing or preventing high-risk behaviours simultaneously (Ali Fakhri et. al 2014) [1].

Table 2: Physical Activity and Exercise Pattern of Study Group'

Physical Activities	Options	Per cent	Chi square	P value
No. of times going to gym per week	1-3 times	58.0	155.960	0.000*
	More than 3 times	42.0		
Types of gym training	Cardio	59	232.640	0.000*
	Zumba	12		
	Weight lifting	20		
	Above mentioned	9		
Any extracurricular activity	Yes	31.0	14.440	0.000*
	No	69.0		
Nature of the activity	Aerobic	55	582.360	0.000*
	Anaerobic	45		

Table no. 2- describes the physical activity and exercise pattern of the study group. 58% of the participants went to the gym more than 3 times per week ($X^2=155.960, p<0.05$). Majority of the participants engaged themselves in the cardio rather than weight lifting($X^2=232.640, p<0.05$). Only 31% were engaged in extracurricular activity apart from gymming ($X^2=14.440, p<0.05$). 55% of the participants were involved themselves in aerobic activities like walking, jogging, zumba, brisk walking etc., whereas 45% were involved in anaerobic activities like swimming, weight training, etc($X^2=582.360, p<0.05$).

A study there was significant weight loss and good health status with those without energy restriction and absence of a significant increase in weight loss between the 400 and 600 kcal/session groups suggests compensation in components of energy balance and warrants additional investigation that could lead to targeted interventions (Donnelly, 2012) [7]. The weight loss after therapy of overt hypothyroidism is caused by excretion of water bound in tissues (myxoedema). Many patients treated for hyperthyroidism experience a gain of more weight than they lost during the active phase of the disease (Eur T. J, & et.al, 2012) [11].

Table 3: Nutritional Supplements& Weight Loss Pills Used For Weight Loss By Study Group

Strategies	Options	Per cent	Chi square	P value
Nutritional supplements	Yes	46.0	7.840	0.003
	No	54.0		
Person recommended the nutritional supplements	Gym trainer	34.0	136.100	0.000*
	Nutritionist	3.0		
	Doctor	5.0		
	Self	4.0		
	None	54.0		
Weight loss pills	Yes	10.0	81.000	0.000*
	No	85.0		
Person recommended the weight loss pills	Gym trainer	4.0	351.6	0.000*
	Doctor	1.0		
	Online	2.0		
	Self	2.0		
	None	95.0		
Negative effects experienced during intake of weight loss pills	Gained 1.5 times weight	6.0	171.26	0.000*
	No negative effects	4.0		
Negative effects experienced during intake of nutritional supplements	Acidity	7.0	122.000	0.000*
	Weight gain	11.0		
	No effect	28.0		

Table no. 3- Nutritional supplements was used as one of the weight loss strategies by 46% of women ($X^2=7.840, p<0.05$). 34% of the nutritional supplements were recommended by the gym trainer($X^2=136.100, p<0.05$).28% had no effect after

consuming the nutritional supplements($X^2=122.000, p<0.05$).It was observed that 10% of women took weight loss pills ($X^2=81.000, p<0.05$). Mostly gym trainer recommended these women to consume weight loss pills ($X^2=351.6,$

$p < 0.05$). 6% of women gained 1.5 times their normal weight ($X^2 = 171.26$, $p < 0.05$).

Use of dietary supplements among gym trainees in Tanta city, Egypt was carried where considerable proportion of gym trainees used dietary supplements, mostly without professional consultation and frequently without any indication, such malpractices and harmful usage of supplements recommend for weight loss by the gym trainees

should be stopped (Ehab A. Ali, & *et al*, 2016) [10].

Energy drinks are marketed primarily to teens and young adults with the promise of increased energy, improved weight loss and even better athletic performance (Babita. H, 2012) [2]. Consumption of protein greater than two to three times the U.S Recommended Daily Allowance contributes to urinary calcium loss and may, in the long term, predispose to bone loss (Julie E, & *et.al*, 2014) [16].

Table 4: Meal Replacers, Fat Burning Techniques & Crash Diets Used For Weight Loss By Study Group

Strategies	Options	Per cent	Chi square	P value
Meal replacers	Yes	9.0	67.240	0.000*
	No	91.0		
Person recommending the use meal replacers	Friend	1.0	316	0.000*
	Online	1.0		
	Self	6.0		
	Trainer	1.0		
Fat burning techniques	Yes	40.0	4.000	0.000*
	No	60.0		
Person recommending the use of fat burning techniques	Doctor	3.0	96.24	0.000*
	Gym trainer	20.0		
	Online	7.0		
	Self	10.0		
Negative effects experienced during usage of fat burning techniques	Appetite decreased	5.0	53.66	0.000*
	Dehydration	15.0		
	No weight loss	20.0		
Crash diets	Yes	10.0	64.000	0.000*
	No	90.0		
Person recommending the crash diet	Ayurvedic Doctor.	1.0	549.44	0.000*
	Books/online	3.0		
	Nutritionist	1.0		
	Self	5.0		
Negative effects experienced during crash diets	Bowel disorders	2.0	630.44	0.000*
	Hair loss	3.0		
	Psychological issues	2.0		
	Insomnia	3.0		
Negative effects experienced during the intake of meal replacers	Hungry	5.0	188.18	0.000*
	No effects seen	4.0		

Table no.4 It was observed that 9% of women took meal replacers ($X^2 = 67.240$, $p < 0.05$). Mostly they themselves i.e. 6% of women consumed these meal replacer without anyone's recommendations ($X^2 = 351.6$, $p < 0.05$). 5% of women felt hungry quite often ($X^2 = 188.18$, $p < 0.05$). 40% of women used fat burning techniques for weight loss ($X^2 = 4.000$, $p < 0.05$). 20% of women used these techniques by the recommendation of the gym trainer ($X^2 = 96.24$, $p < 0.05$). There was no weight loss observed of 20% women using these fat burning technique's in gym ($X^2 = 53.66$, $p < 0.05$). 10% of women took crash diets fat burning techniques for weight loss ($X^2 = 64.000$, $p < 0.05$). These crash diets were mostly recommended by themselves ($X^2 = 549.44$, $p < 0.05$). There were many complications seen with bowel disorders and hair loss, psychological issues like stress, depression, forgetfulness, etc. and insomnia among the women continuing crash diets ($X^2 = 630.44$, $p < 0.05$).

Evidence suggests that estrogen hormone therapy increases a woman's resting metabolic rate. This helps in slow weight

gain. Lack of estrogen may also cause the body to use starches and blood sugar less effectively, which would increase fat storage and make it harder to lose weight. (Traci C. J, 2017) [21]

Regular sauna therapy (either radiant heat or far-infrared units) appears to be safe and offers multiple health benefits to regular users. One potential area of concern is sauna use in early pregnancy because of evidence suggesting that hyperthermia might be teratogenic (Altern M. R, *et al*, 2011). Observational studies suggested that exercise is associated with greater weight loss following bariatric surgery (Egbert's, K, *et al*, 2012) [9].

A study on attendance was strongly associated with weight loss (0.2 kg per session attended). The diets improved lipid-related risk factors and fasting insulin levels. Reduced-calorie diets resulted in clinically meaningful weight loss regardless of which macronutrients they emphasized (Frank M. S, & *et.al*, 2009) [12].

Table 5: Nutrient Intake by Study Group

Nutrient	Mean	Mean Difference	Z Value	P Value	Rda
Energy (kcal)	1969.12	-260.87	-4.274	0.000*	2230
Protein (gms)	37.73	-17.26	-5.975	0.000*	55
CHO (gms)	99.87	-30.12	-7389	0.000*	130
Fibre (gms)	18.39	-6.60	-3.07	0.000*	25

It can be observed from Table no. 5 that the mean energy was 1969.12kcal and the participants were deficient by -260.87kcal ($Z = -4.274$, $p < 0.05$) when compared with the energy intake of RDA value, mean Protein was 37.7g and was deficient by -17.2g ($Z = -5.975$, $p < 0.05$) when compared with RDA. The mean Carbohydrate intake was around 99.8g and was deficient by -30.1g ($Z = -7389$, $p < 0.05$) for carbohydrate intake when compared with RDA. The mean fibre was 18.3g and was deficient by -6.6g ($Z = -3.077$, $p < 0.05$) for fibre intake when compared with RDA.

Conclusion

It can be concluded from the study that calories, macronutrient and fibre consumption were found to be low among women going to fitness centres. It was also observed that most of the participants were suffering from diabetes, depression, high cholesterol, eating disorders and PCOD. It was also observed that they practiced wrong ways of losing weight, either by skipping meals or taking different nutritional supplements, weight loss pills, fat burning techniques, crash diets and meal replacers to decrease weight rapidly. This may lead to several negative effects on their health. Nutrition and exercise along with good lifestyle habits and sufficient amount of additional nutrient intake according to their health and lifestyle activities may be beneficial to lose weight. Thus, it can be advised to women to avoid the short term strategies & achieve gradual weight loss without any health problems. This can be achieved by the guidance from a professional dietician's & fitness trainers.

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