

Original Research Article

Measures adopted for weight reduction among overweight and obese adults: a community based cross sectional study

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ABSTRACT

Background: Worldwide obesity prevalence has nearly doubled since 1980. Current guidelines recommend that “overweight” and “obese” individuals lose weight through engaging in lifestyle modification involving diet, exercise and other behaviour changes. It is necessary to prevent obesity so that the subsequent complications can be prevented.

Methods: This community based cross sectional study was conducted in the field practice area of tertiary medical college from June 2019 to August 2019. Totally 154 participants enrolled in the study. Only those individuals who had body mass index (BMI) of more than 23 kg/m² were included in the study.

Results: Majority of the study subjects 57.1% (88) belonged to the age group of 21-40 years. We included only overweight and obese adults in the present study. In this study, 61% (94) of the study population belonged to obese- I category while 33.8% (52) belonged to obese- II and only 5.2% (3) of study population were overweight. Only 43% (66) of the study population had adopted some measures to reduce their weight. Out of these majority 69.7% (46) preferred walking while 12.1% (8) preferred jogging for reducing weight. Mean days of walking adopted was 3.7 days and mean minutes per day was 29.67 minutes.

Conclusions: As seen in this study more than half of the study population had not taken any measures for weight reduction. Increased health awareness will improve their level of active participation in the weight reduction program such as diet modification and physical exercise promotes weight loss and weight maintenance.

Keywords: Overweight, BMI, Walking, Obesity, Weight reduction

INTRODUCTION

Obesity is a multi-factorial disorder, overweight or obesity is the leading cause of hypertension, diabetes, osteoarthritis, various types of cancers in women like breast cancer and uterus cancer, menstrual disorder and infertility and many more diseases. Demographic transition combined with modernisation and industrialisation has resulted in extreme changes in lifestyles internationally which leads to increase prevalence of obesity.^{1,2}

A rapid increase in obesity over the last three decades has been caused primarily by cultural and environmental factors. Overweight and obesity was once considered a high-income-country problem, However, it is now on the rise in low and middle-income countries, particularly in urban settings.³ With urbanization and a busy lifestyle the general population is not able to allot enough time for daily physical activity. High calorie diets, heavy meals, low level of physical activity and sedentary lifestyles and nutritional disturbances are major risk factors in development of obesity.^{4,5}

According to a WHO report, obesity has been identified as a major cause of disability and premature deaths in less developed countries. It has been estimated that obesity accounts for 2% to 7% of total healthcare costs. There are also other costs to consider such as reduced quality of life and productivity loss attributed to medical leave.⁶

Current guidelines recommend that “overweight” and “obese” individuals lose weight through engaging in lifestyle modification involving diet, exercise and other behaviour changes.⁷ Studies have shown that the global increase in the prevalence of obesity has led to an increased need for measurement tools for research, management and treatment of the obese person.⁸

Physical exercise is an important component in the treatment of obesity. Little information is available about the best and safety form of physical exercise concerning the type and volume-intensity to be prescribed for individuals with morbid obesity.⁹ Studies have shown changes in physical activity is independently associated with change in physical, mental, and obesity-specific quality of life and life satisfaction in severely obese adults participating in a lifestyle intervention.¹⁰ So it is necessary to prevent obesity so that its subsequent complications can be prevented.

Objectives

The objectives of the study were to determine the prevalence of weight loss practices among overweight and obese adults and to enumerate the various measures adapted for weight reduction.

METHODS

This was a community based cross sectional study conducted in the field practice area of a tertiary medical college in Tamil Nadu for a period of 2 months (June to August 2019).

Operational definitions

Overweight was defined as a BMI ≥ 23 kg/m² but < 25 kg/m² for both genders (based on the World Health Organization Asia Pacific Guidelines) with or without abdominal obesity.

Generalized obesity was defined as a BMI ≥ 25 kg/m² for both genders (based on the World Health Organization Asia Pacific Guidelines) with or without abdominal obesity.¹¹

Sample size

With the available literature, the prevalence of overweight and obesity in Tamil Nadu is 38% and with absolute precision of 8% and z value of 1.96, the sample size calculated was 141.¹² Assuming 10% non-response rate, sample size was calculated to be 154.

Sampling method and technique

The study population was selected by Multi stage random sampling method. The rural field practice area of the tertiary medical college and hospital in Chennai covers a population of 28494 which includes 3 villages. Stratified random sampling was used to determine the number of participants from each village. Individuals from the community, fulfilling the eligibility criteria and willing to participate in the study, were included by simple random sampling. We calculated the BMI of each participant with the standard method and classified as per Asian standards. We included only overweight and obese adults in this study

Inclusion criteria

Individuals between 18 to 60 years of both groups (male and female) who had BMI of more than 23 kg/m² were included in the study, individuals willing to participate in the study with the above criteria were included.¹¹

Exclusion criteria

Pregnant women and lactating mother, physically challenged, individuals not willing to participate in the study, individuals who had BMI less than 23 kg/m² were excluded from the study.¹¹

Study instruments

The study tool was a pre validated structured questionnaire containing demographic profile of the study population, awareness about obesity and its complication, measures adopted for weight reduction.

Data collection

Individuals who have given consent to participate in the study been assessed by the interview method with the help of a structured questionnaire.

Statistical analysis

It was done by using SPSS version 21 software. Statistical tools used were frequencies and proportions.

RESULTS

The majority of the study subjects 57.1% (88) belonged to the age group of 21-40 years, followed by 37.7% (58) of study subjects in the age group of 41-60 years. The study population comprised of almost equal proportion of males and females with males comprising 51% (78) and females 49% (76).

According to modified B. G. Prasad classification, 31% of the population belonged to the upper class and 32% belonged to the upper middle and 26% belonged to

middle and 10% belonged to the lower middle and 1% to class lower class.

Table 1: Socio-demographic profile of study subjects.

Characteristics	Frequency (N=154)	Percentage (%)
Age (in years)		
<20	6	3.8
21-40	88	57.1
41-60	58	37.7
>60	2	1.3
Gender		
Male	76	49
Female	78	51
Socioeconomic status		
Upper	47	31
Upper middle	50	32
Lower middle	40	26
Upper lower	15	10
Lower	2	1
Religion		
Hindu	130	84.4
Christian	15	9.7
Muslim	9	5.9
Marital status		
Married	112	72.7
Unmarried	36	23.4
Widowed	6	3.9

Table 2: Classification of study subjects based on BMI.

Obesity (BMI)	Frequency	Percentage
Overweight (23-24.9)	3	5.2
Obese-I (25-29.9)	94	61
Obese-II (>30)	52	33.8
Total	154	100

In this study 61% (94) of the study population are obese-I followed by 33.8% (52) are obese- II and only 5.2% (3) of the study population are overweight (Table 2).

Table 3: Awareness regarding overweight or obesity and associated health problems.

Awareness	Frequency (N=154)	Percentage
Overweight/obese	103	66.9
Chronic health problem	103	66.9
Lifestyle disease	122	79.2
Controlled by lifestyle modification	128	83.2

Table 3 shows that 66.9% (103) of the study population were aware that they are overweight/obesity and it is a chronic health problem.79.2% (122) of study population

aware that it is a lifestyle disease and 83.2% study subjects aware that it can controlled by lifestyle modification.

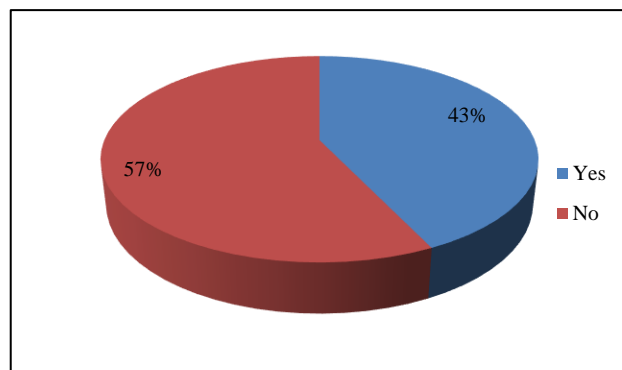


Figure 1: Prevalence of weight reduction practices among study subjects.

Figure 1 shows that among the study subjects 43% (66) of population adopted some measures to reduce their weight. Whereas 57% (88) of the study subjects had not adopted any measures to reduce weight.

Table 4: Physical activities adopted by study subjects.

Measures adopted	Frequency	%	Mean days/week	Mean minutes/day
Walking	46	69.7	3.7	29.67
Jogging	8	12.1	3.75	21.43
Skipping	3	4.5	5.33	25
Swimming	3	4.5	3.5	25
Yoga	6	9.09	5.8	25.83
Total	66	100	22.08	126.93

Table 4 shows that only 43% (66) of the study population had adopted some measures to reduce their weight. Majority 69.7% (46) of study population adopted walking followed by 12.1% (8) of study subjects adopted jogging. Mean days of walking adopted is 3.7 days and mean minutes per day is 29.67 minutes.

Table 5: Diet modifications adopted by study subjects.

Measures adopted	Frequency (N=66)	Percentage
Skipping Meals	27	40.9
Increased consumption of fruits and vegetables	36	54.5
Avoid junk foods	39	59.0
Consuming green tea	13	19.6
Consuming oats	7	10.6
Consuming horse gram	8	12.1

Table 5 shows that 43% (66) of the study population had adopted some measures to reduce their weight. 54.5%

(36) of study population increased consumption of fruits and vegetables, 59% (39) of study subjects avoid junk foods, 40.9% (27) skipping meals, 19.6% (13) consuming green tea, 10.6% (7) consuming oats and 12.1% (8) consuming horse gram.

Only 3.0% (2) of study population adopted diet plans to reduce weight.

Drugs used by the study population for weight reduction are about 7.5% (5) used metformin for weight reduction.

DISCUSSION

In our study population about 66.9% (103) participants knew that they were overweight/obese and they had knowledge that excessive weight gain leads to chronic health problems. A similar study done by Kansra et al reported that 31% of study subjects were aware that it is a chronic health problem.¹³ Another study done by Bolarinde et al reported that 76.64% of the study subjects had good knowledge about obesity, its associated complications and weight reduction program.¹⁴

Knowing about obesity ill effects about 43% (66) members had adopted measures to reduce weight in that they followed many range of physical activities. A similar study conducted by Thakkar et al observed that 52.75% adopted some kind of physical activity.¹⁵ Similar results were reported in another study done by Bolarinde et al where 39.1% of the study subjects were involved in some weight reduction exercise program.¹⁴

In this study we observed that 43% of the study population adopted some kind of physical activities, 43% adopted diet modifications and 3.2% took drugs for weight reduction. Lowry et al observed 53.6% adopted exercises, 30.8% adopted diet modifications and 4.3% took drugs for weight reduction.¹⁶

In present study, we observed walking was adopted by 69.7% of the study population, jogging by 12.1% and swimming by 4.5% in the various methods of weight reduction. Chen et al in their research reported that among various physical activities, 80.2% of the study population adopted walking followed by jogging (6.1%) and swimming (0.9%). In both these studies, walking was the most commonly practiced method of weight reduction.¹⁷ In another study done by Thakkar et al more than half (52.7%) of the study subjects were resorting to physical activity to lose weight.¹⁵

The weight loss measures adopted by our study population were 25.3% (39) avoided eating junk foods, 17.5% (27) skipping meals, 8.4% (13) consuming green tea and 5.2% (8) consuming horse gram. Srinivas et al observed in his study 31.5% skip meals as a weight control measure.¹⁸ With same method of consuming green tea for weight reduction practices a study done by Pawar

et al showed positive result in weight reduction and weight maintenance.¹⁹

A similar study done by Thakkar et al reported that among dieting practices, taking more fruits/vegetables (44.7%) was the most common healthy weight loss measure observed among the study subjects. Among unhealthy behaviour, fasting was the most common (15.3%). Next to it was skipping either breakfast or meals (14.5% and 12%, respectively).¹⁵

CONCLUSION

The problem of obesity/overweight is on the rise, and there is a definite need to inculcate good habits of healthy eating and regular physical activity. Though overweight/obese individuals have awareness about chronic health problems related to obesity and the importance of weight reduction they have low level of participation in weight reduction program. Simple yet innovative, cost effective lifestyle changes like yoga, meditation, brisk walking, jogging, and cycling can be used to maintain optimal weight.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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