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IMPACT OF OBESITY AND WEIGHT MANAGEMENT ON WOMEN IN CHENNAI

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Abstract Obesity is a multifaceted health condition characterized by excessive body fat accumulation, posing significant risks for various chronic diseases such as diabetes, cardiovascular diseases, and certain cancers. Its prevalence has surged globally, driven by complex interactions between genetic, environmental, and behavioural factors. Effective weight management strategies are critical in addressing this public health challenge. These strategies encompass dietary modifications, increased physical activity, behaviour therapy, pharmacotherapy, and, in severe cases, bariatric surgery. Integrative approaches that combine multiple interventions often yield the most sustainable outcomes. Moreover, addressing socioeconomic disparities and implementing community-based initiatives are essential for fostering healthier environments conducive to long-term weight management. Continuous research and innovation in understanding obesity's etiology and refining treatment modalities are imperative for mitigating its health and economic impacts.

Key Words: Obesity, Weight management, Chronic diseases, Dietary modifications

1.1 INTRODUCTION

Obesity is a major public health challenge affecting individuals globally, with significant implications for women's health. Women, particularly, face unique biological, socio-cultural, and economic factors that contribute to obesity, making it a critical area of concern. Overweight and obesity are defined as abnormal

or excessive fat accumulation that may impair health. They are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and cancer. Once considered a problem only in high-income countries, overweight and obesity are now dramatically on the rise in low- and middle-income countries.

Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m2). The World Health Organisation (WHO) definition is:

- BMI greater than or equal to 25 is overweight
- BMI greater than or equal to 30 is obesity.
- BMI of 30-34.9kg/m^2 is obese (Grade I).
- BMI of 35-39.9kg/m^2 is obese (Grade II).
- BMI of ≥40 kg/m^2 is obese (Grade III).

In India, more than 135 million individuals were affected by obesity. According to ICMR-INDIAB study 2015, prevalence rate of obesity and central obesity are varying from 11.8 per centage to 31.3per centage and 16.9per centage - 36.3 per centage respectively. In India, abdominal obesity is one of the major risk factors for cardiovascular disease (CVDs).

TABLE 1.1 TOP FIVE OBESE COUNTRY IN THE WORLD

Global Rank	Country	per cent of adult population That Is Obese
1	Nauru	61.0per cent
2	Cook Islands	55.9per cent
3	Palau	55.3per cent
4	Marshall Islands	52.9per cent
5	Tuvalu	51.6per cent

Source of data: Britannica procon.org

1.1 OBJECTIVES OF THE STUDY

- To study the impact on obesity among women's.
- To trace the fitness level and health condition of women.
- To identify the contributing factors of overweight and obesity.
- To understand the socio-economic health status of women in chennai.
- To analyse the various measures undertaken by women's in managing weight.

1.3 METHODOLOGY OF THE STUDY

PRIMARY DATA:

Primary data was collected from 100 respondents with a self-administrative questionnaire prepared by the researcher, the researcher carried out personal survey using random sampling method. The analysis is based on random sampling method and it is interpreted by means of Bar Chart, Column Chart and Pie Chart.

SECONDARY DATA:

The secondary data was collected from the findings stated in published documents like books journals, newspapers, magazine, reports related to research problems.

1.4 LIMITATIONS OF THE STUDY

- The study is confined to Chennai city only.
- The time period of the study is limited.
- The Sample size of study is 100.

2.1 REVIEW OF LITERATURE

Wright et al (1997) reported that Childhood obesity increases the risk of obesity in adulthood, but how parental obesity affects the chances of a child's becoming an obese adult is unknown. the risk of obesity in young adulthood associated with both obesity in childhood and obesity in one or both parents.

Kushner et al (2000) revealed that impact of obesity and weight loss on quality of life. A focus on quality of life broadens the scope of treatment efficacy beyond weight loss and provides a patient-centred perspective. The concept of quality of life is defined, and both general and obesity-specific measures are reviewed. The effects of weight loss appear to be favourable, although few studies have examined non-surgical interventions. Future studies would be enhanced by assessing a variety of approaches to weight loss by using both general and obesity-specific measures of quality of life and conducting follow-up studies to assess the effects of weight regain on quality of life.

Strasburger et al (2011) This research shows that obesity has become a worldwide public health problem. Considerable research has shown that the media contribute to the development of child and adolescent obesity, although the exact mechanism remains unclear. Screen time may displace more active pursuits, advertising of junk food and fast-food increases children's requests for those particular foods and products, snacking increases while watching TV or movies, and late-night screen time may interfere with getting adequate amounts of sleep, which is a known risk factor for obesity.

3.1 PHYSICAL HEALTH

Health is the level of functional or metabolic efficiency of a living organism. In humans, it is the ability of individuals or communities to adapt and self-manage when facing physical, mental, or social

challenges. World Health Organization (WHO) states that "health is a state of complete physical, mental and social well-being and is not merely the absence of disease or infirmity".

3.2 DEFINITION OF OBESITY

Obesity is a medical condition characterized by an excessive accumulation of body fat to the extent that it may have a negative impact on health. It is typically measured using the Body Mass Index (BMI), which is a simple index of weight-for-height commonly used to classify overweight and obesity in adults.

3.3 OVERVIEW OF OBESITY AT WORLDWIDE

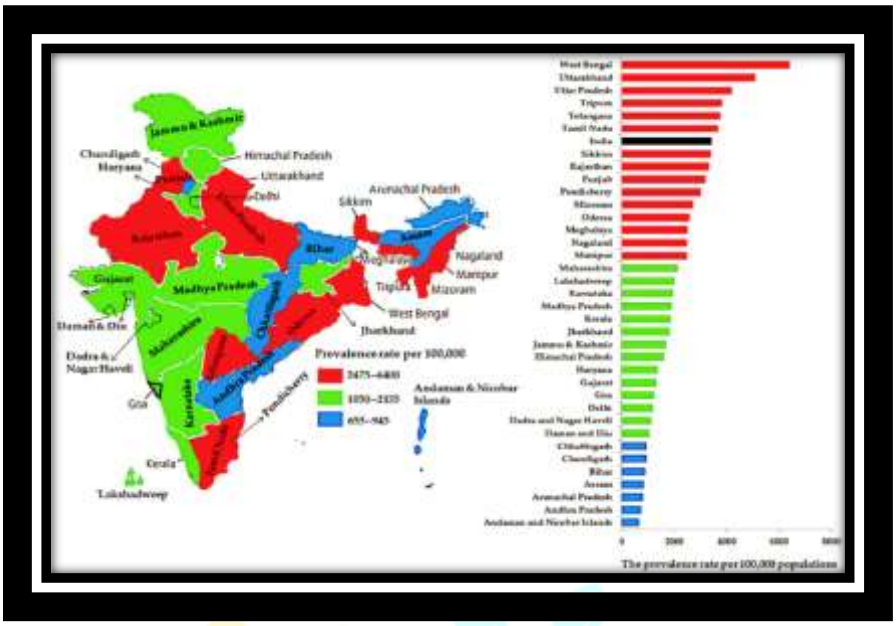
Obesity is defined as an abnormal or excessive fat accumulation that presents a risk to health. The most common metric for measuring obesity is the Body Mass Index (BMI), with a BMI of 30 or higher considered obese.

- Worldwide obesity has nearly tripled since 1975.
- In 2016, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 650 million were obese.
- 39per cent of adults aged 18 years and over were overweight in 2016, and 13per cent were obese.
- Most of the world's population live in countries where overweight and obesity kills more people than underweight.
- 39 million children under the age of 5 were overweight or obese in 2020.
- Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016.
- Obesity is preventable.

3.4 OVERVIEW OF WOMEN'S OBESITY IN INDIA

Women's obesity in India is a complex public health issue influenced by a combination of dietary, physical, socio-cultural, reproductive, and economic factors. Addressing this issue requires comprehensive and targeted strategies, including government policies, public health campaigns, community initiatives, and individual efforts. By promoting healthy lifestyles, improving access to healthcare, and addressing socio-cultural norms.

According to data presented by Nadda men and women in Punjab followed by Kerala and Delhi are the most obese people with 22.2per cent, 17.8per cent and 16.8per cent of men and 29.9per cent, 28.1per cent and 26.4per cent of women from the respective states reporting a Body Mass Index (BMI) of more than 25. Data also show women everywhere except Bihar and Meghalaya are more overweight than men. In Tripura only 4.8per cent of men and 7.1per cent of women are obese comparing to Meghalaya, only 5.9per cent of men and 5.3per cent of women are weighted.



Source of data:2015-2016 national family health family survey

3.5 OVERVIEW OF WOMEN OBESITY IN CHENNAI

Chennai, like many urban centres in India, has witnessed a rising trend in obesity among women. Studies and surveys have shown that the prevalence of obesity among women in Chennai is higher compared to rural areas and is on the rise due to urbanization and lifestyle changes.

3.6 CAUSES OF OVER WEIGHT AND OBESITY

- **Genetics** may play a role in conversion of food into energy and how body burns calories during exercise. Genes may affect the amount of fat storage and distribution of fat in body.
- **Sedentary life style** with a sedentary lifestyle such as sedentary occupation and inactive recreation (watching television) more calories are stored in the body every day than used through exercise. sedentary lifestyle promotes weight gain. If there is any associated medical problems such as arthritis can lead to decreased activity; that contributes to weight gain.
- **Health conditions** Some medical conditions may cause over weight and obesity because of hormonal disturbances such as hypothyroidism, Cushing's syndrome and poly cystic ovarian syndrome (PCOS).
- **Medicines**-Certain medicines such as corticosteroids, antidepressants and medicines used for seizure control may cause weight gain.
- **Emotional factors**- For some people, eating habits are influenced by emotions such as sadness, stress, boredom or anger and they react by eating excessively.
- **Age**- Obesity can occur at any age, even in young children. Infants with excessive weight have increased chances of obesity in later life. As age increases, muscle mass tends to decrease and some hormonal changes also occur; these factors along with less active lifestyle increase the risk of obesity in later age.
- **Pregnancy**- Woman gain weight during pregnancy and, some women find it difficult to lose weight after child birth. This weight gain may contribute to the development of obesity in women.

- **Lack of sleep**- Not having enough sleep or getting too much sleep can cause changes in hormones that may increase appetite and craving for foods high in calories and carbohydrates, which can contribute to weight gain.

3.7.1 METHODS TO ESTIMATE COST OF OBESITY

The method most commonly used to calculate the economic cost of obesity is Cost of illness (COI). the total economic cost of obesity is divided into three they are Direct, Indirect, and Intangible cost. Direct cost is divided into medical and non-medical cost.

3.7.2 DIRECT MEDICAL COST

Medical costs include with treating obesity itself and the medical cost for treating obesity relevant diseases such as type-2 diabetes and hypertension are included in the direct medical cost of obesity.

3.7.3 DIRECT NON-MEDICAL COST

The cost of health education efforts intended to help people maintaining healthy life style and the cost of preventing treating obesity, but not covered by health care system are included in direct non-medical cost, cost associated on purchasing exercising equipment for losing weight, travel for health care providers and time involved in the treatment of the patient. Mostly non-medical cost is paid by individuals. Sum of COI studies on obesity include the component in deriving estimate of total direct cost of obesity.

3.7.4 INDIRECT AND INTANGIABLE COST

Where the indirect cost includes the value of time lost from employment are other productive activities due to an obese person. But not all estimates include as indirect cost. The value attribute to loss of time from housekeeping by family members or friends who provides transportation and care for those who being treated for obesity and its related diseases.

The most common method used for estimating indirect cost of obesity is the human capital approach. This measures the indirect cost of illness in term of market valuation of lost wage earning from morbidity and mortality.

Intangible cost is those included with the pain and suffering from obesity itself and from obesity diseases is contributing factor. A monitory value to physical or emotional suffering, this component of costs has not been included in the total cost of obesity.

HYPOTHESIS TESTING

Null Hypothesis (Ho): There is no significant association between the income groups and expenditure groups.

Alternate Hypothesis (H1): There is a significant association between the income groups and expenditure groups.

ONE WAY ANOVA

ANOVA

Variable	Sum of Squares	df	Mean Square	F	Sig.
Between Income Groups	84.635	4	21.159	1.044E3	0
Within Expenditure Groups	1.925	95	0.02		
Total	86.560	99			

DATA INTEPRETATION

Since the P value is less than mean value.it can be interpreted than the null hypothesis is rejected and alternative hypothesis is accepted at 5per cent level of significance and it can be concluded that there is a significant group mean difference between the type of income and expenditure on weight management.

HYPOTHESIS TESTING

Null Hypothesis (Ho): There is no significant association between the age groups and expenditure groups.

Alternate Hypothesis (H1): There is a significant association between the age groups and expenditure groups.

Chi-Square Tests

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age * Expenditure	100	100.0per cent	0	.0per cent	100	100.0per cent

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Age * Expenditure Crosstabulation

			Expenditure of respondents				Total
			1	2	3	4	
Age of respondents	1	Count	9	0	0	0	9
		Expected Count	2.8	3.0	2.6	.6	9.0
	2	Count	22	25	0	0	47
		Expected Count	14.6	15.5	13.6	3.3	47.0
	3	Count	0	8	29	3	40
		Expected Count	12.4	13.2	11.6	2.8	40.0
	4	Count	0	0	0	2	2
		Expected Count	.6	.7	.6	.1	2.0
	5	Count	0	0	0	2	2
		Expected Count	.6	.7	.6	.1	2.0
Total		Count	31	33	29	7	100
		Expected Count	31.0	33.0	29.0	7.0	100.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.403E2[a]	12	.000
Likelihood Ratio	129.903	12	.000
Linear-by-Linear Association	68.604	1	.000
N of Valid Cases	100		

a. 14 cells (70.0per cent) have expected count less than 5. The minimum expected count is .14.

DATA INTERPRETATION

Since the P value (0.000) is less than the significance level (0.05), the null hypothesis is rejected. Thus, we conclude that there is an association between the age of the respondents and the expenditure on weight management. Thus, people tend to develop expenses with the increase in their age.

SUGGESTIONS:

- People can prevent obesity and manage weight by reducing the intake of high energy dense food.
- Consume less bad fat and more good fat.
- Engaged in regular workouts.

SUGGESTIONS TO GOVERNMENT:

- Maintain a nationwide database on secular trends in overweight and obesity among people.
- Creation of national task force for obesity prevention.
- Community awareness programmes on food, nutrition and health should be organized frequently.
- Encouraging companies to manufacture healthy snacks and food outlets/restaurants to serve healthy food choices.
- Consideration of tax on ‘fatty food’ or alternatively reduce tax and promote production and sale of fresh fruits and vegetables.
- To promote physical activity, provision of safe walk/ bicycle routes to schools and colleges.
- Conducting social events like healthy food festivals and harvest festivals.

CONCLUSION:

Major aim of this research to find the contributing factors on overweight and obesity and prevent obesity. Increasing in overweight and obesity is not only problem of individual but all society wide problem of population. Hormonal imbalance is one of the main reasons for overweight and obesity. Research into epigenetic influence on health is burgeoning and is likely to make a very significant contribution to our understanding of aetiologic in the year to come if so, it should also help clarify how existing treatments for both overweight and obesity or suggest new approach that would work more effectively.

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