

A Study to Evaluate the Effectiveness of Green Tea in Reducing Weight among Obese Women in Urban Area, Dehradun

Anshu Tomar¹, Ravi Kulal²

¹Lecturer, Holy Family College of Nursing , New Delhi

²Associate Professor, Maharaja Agrasena Nursing College, Bahadurgarh, Haryana

Email - kulal4u@gmail.com

Abstract: *Obesity is defined as abnormal or excessive fat accumulation that presents a risk to health. A crude population measure of obesity is the body mass index (BMI), a person's weight (in kg) divided by the square of his or her height (in meters). A person with a BMI of 30 or more is generally considered obese. A person with a BMI of 25 is considered overweight. The nature of the study was pre experimental. The study was conducted in urban area Banjarawala Dehradun. The research design used for this study was one group pre-test post-test design. Data collected using Non-Probability Purposive sampling. The data was collected to assess the effectiveness of 40 obese women. The data collected were analyzed and interpreted by using descriptive and inferential statistics. Major- findings of the study- Revealed that after implementation of green tea the weight loss is between 0 to 2.5 kg. While pre-test mean weight score is 31.47 and post test mean weight score is 29.26 Significant difference ($p < 0.05$) is found between pre-test and post-test score. It can be concluded that pre-test weight score in obese women is much regarding green tea. After implementation of (green tea) the post test weight among obese women is reduced.*

Key Words: Obesity , Green tea ,Body Mass Index(BMI).

1. INTRODUCTION:

Obesity is a serious health problem worldwide. In the United States, the number of obese people (defined as BMI > 30) has reached epidemic proportions, affecting approximately one-quarter of the American population. The prevalence of obesity is increasing worldwide, and the percentage of people who are overweight has steeply risen more than 30% since 1980 (Bray, 1998). Data from the National Center for Health Statistics indicate an uneven distribution of obesity, with African-American and Mexican-American females most affected. Green tea is a product made from the *Camellia sinensis* plant. It can be prepared as a beverage, which can have some health effects. Or an "extract" can be made from the leaves to use as medicine. Green tea is used to improve mental alertness and thinking. The useful parts of green tea are the leaf bud, leaf, and stem. Green tea is not fermented and is produced by steaming fresh leaves at high temperatures. During this process, it is able to maintain important molecules called polyphenols, which seem to be responsible for many of the parts. Green tea is one of the most widely consumed beverages in the world. Dietary supplements that concentrate the active components of green tea offer consumers a novel tool to assist multiple aspects of metabolism. Combining green tea with appropriate diet and exercise yields the best results, which is true for any dietary supplement. Green tea is synergistic with many other nutrients and is a worthy candidate for any person seeking to manage his or her weight.

2. OBJECTIVES:

- To measure the pre test body weight among the obese women.
- To determine the effectiveness of green tea among the obese women.
- To compare pre test and post test body weight among the obese women.
- To find out association between the post test body weight with their demographic variables (such as age, sex, occupation, income, education status, duration of illness) among obese women..

3. ASSUMPTIONS:

- Effectiveness of green tea will be reduce obesity.
- There will be a significant improvement in the post intervention score.
- Due to irregular dietary pattern weight will be increased in women.

4. HYPOTHESES

H₁ - There will be the significant difference between pretest weight and post test weight among obese women.

H₂. There will be a significant association between the post test weight with their selected demographic variables (such as age, sex, occupation, income, education status, monthly income of family).

5. RESEARCH APPROACH:

A quantitative research approach is used for this study. A quantitative research is an applied form of research that involves finding out how well a programme, procedure or policy is working.” The main goal is to evaluate the effectiveness of intervention (Green tea).

Research Design

Pre experimental design (one group pre-test- post test design was adopted for the study)

Setting of the study

The study was conducted in urban area in Banjarawala Dehradun. These area were selected because of easy access to the population under study and availability of obese women’s around the area.

Population

In the present study, the population is the obese women.

Sample

In this study the sample comprised of 40 obese women between the ages 18 to more than 35 of age in the selected urban area of Dehradun.

Sample size

In this study, the sample size is 40 obese women between the ages 18 to more than 35 of age in the selected urban area of Dehradun.

Sampling technique

A Non –Probability Purposive sampling technique was used to select 40 obese women.

Data collection Instrument

Section A: Demographic variables.

Section B: Standard tool

6. FINDINGS AND ANALYSIS:

SECTION:-I

Table (1): FREQUENCY AND PERCENTAGE WISE DISTRIBUTION OF DEMOGRAPHIC CHARACTERISTIC OF SAMPLE.

N=40

S.NO	DEMOGRAPHIC VARIABLES	FREQUENCY (f)	PERCENTAGE (%)
1.	Age		
	a) 20-25	06	15%
	b) 26-30	16	40%
	c) 31-35	10	25%
	d) More than 35	08	20%
2.	Educational status		
	a) Illiterate	0	0%
	b)Primary education	04	10%
	c)Secondary education	11	27.5%
	d)Graduation	17	42.5%
e)Post Graduation	08	20%	
3.	Occupational status		
	a) Home maker	21	52.5%
	b) Self employee/Business	04	10%
	c) Government employee	05	12.5%
d) Professional	10	25%	
4.	Monthly income of family		
	a) Less than 10,000/-	0	0%
	b) Rs.10,001/to Rs.15,000/-	5	12.5%
	c) Rs.15,001/-Rs.20,000/-	18	45%
d) More than Rs. 20,001/-	17	42.5%	
5.	Type of family		
	a) Joint	07	17.5%
	b) Nuclear	19	47.5%
	c) Extended	12	30%
d) Broken / Divorced family	02	05%	

6.	The reason for weight gain a) by birth b) due to any illness c) lack of physical work heredity	06	15%
		05	12.5%
		17	42.5%
		12	30%
7.	Dietary pattern a) vegetarian b) non-vegetarian	24	60%
		16	40%
8.	Any previous knowledge regarding green tea. (a)yes (b)No	29%	60%
		11%	40%

From the findings of the study it can be calculated that highest percentage of women in the age group of 25-30 and most of women were from urban areas .Most of the women had graduation and family income group were 15001-20000Rs /Month, Mostly women had nuclear family and the reason for weight gain shows the highest percentage of lack of physical work. Highest percentage of women had vegetarian dietary pattern .The mostly women had previous information regarding green tea. During pre test overall percentage of obese women were much and weight of the women were much.

SECTION: - II Mean value of pre test and post test level of obesity in samples.

Table (2) Mean and SD of pretest and post test of score weight reduction among the obese women.

N=40

Obese women	Mean	SD	t-value	df	Level of significance
Pre-test	31.47	1.96	4.25	39	Significant
Post-test	29.26	2.66	4.25	39	Significant

Table (2) Revealed that the mean post test weight reductions of the obese women were significantly lower than the mean pre test score. The calculated 't' value (4.25) was more than the table value at 5% level of significance .Therefore, 't' value is found significant. That means it can be said that the effectiveness of green tea was effective to reducing the weight of obese women. So Research hypothesis (H1) was accepted

SECTION III:-FREQUENCY AND PERCENTAGE DISTRIBUTION OF LEVEL OF OBESITY AMONG SAMPLES.

Fig (1) Revealed that the effectiveness of Green tea among by comparing Frequency and Percentage distribution among obese women.

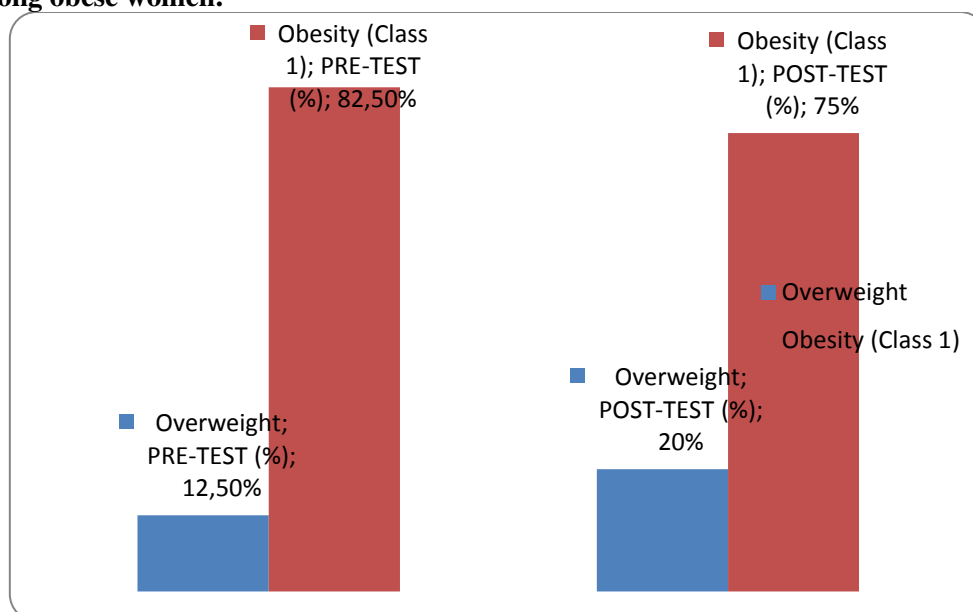


Fig (1) depicts the majority 82.5% of the subjects had obesity (class 1) and 12.5% had overweight and 5% of them had obesity (class 2) in the pre test. After giving the intervention (Green tea) only 77.5% of subjects had (obesity class 1) and remaining 15% of subjects had overweight and 5% had normal weight, 2.5% of subjects had obesity (class 2) in the post test.

SECTION –IV:-ASSOCIATION BETWEEN THE POST TEST LEVEL OF OBESITY WITH THEIR SELECTED DEMOGRAPHIC VARIABLES

The calculated chi-square value 12.19 is greater than the table value at the 0.05 of significant. Therefore there is a significant association between the post test levels of obesity with their dietary pattern. Therefore statistical hypothesis is accepted and null hypothesis is rejected.

7. RECOMMENDATIONS:

On the basis of present study, the following recommendations are formed for future study:

- A study can be conducted to find out the effectiveness of green tea on reducing weight among urban and rural can be compared.
- A future study can be conducted in rural setting.
- A comparative study can be carried out to effectiveness of green tea on reducing weight among obese women having control group and experimental group.
- A study can be conducted to find out the obese person among working people,.
- A similar study can be undertaken on large scale.
- Effects of green tea on reducing weight among obese women and men can be compared.
- Effect of green tea on reducing weight among urban and rural can be compared.

8. CONCLUSION:

Green tea helps to ameliorate obesity, which is a common risk factor for both diabetes and cardiovascular problems. Green tea can be used as a strategy for weight loss and maintenance. Green tea extract boosts metabolism and helps to burn fat. The combination of green tea and caffeine improves weight loss and maintenance in people who are overweight and moderately obese. The data suggests that more than half of the people find green tea beneficial for their health and are aware of its uses and effects. More research is required to throw light on the beneficial effects of green tea in health and disease

REFERENCES:

1. Wolfram S¹, Wang Y, Thielecke F. : Anti-obesity effects of green tea: from bedside to bench. *Mol Nutr Food Res* Feb;50(2):176-87, (2006)
Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/16470636>
2. Makimura M¹, Hirasawa M, Kobayashi K, Indo J, Sakanaka S, Taguchi T, Otake S. : Inhibitory effect of tea catechins on collagenase activity. *J Periodontol.* ;64(7):630-6, (Jul, 1993)
Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/8396176>
3. Toda M, Okubo S, Ohnishi R, Shimamura T: [Antibacterial and bactericidal activities of Japanese green tea]. *Nihon Saikingaku Zasshi.* 44(4):669-72. (1989)
Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/2677434>
4. Chantre P¹, Lairon D. : Recent findings of green tea extract AR25 (Exolise) and its activity for the treatment of obesity. *Phytomedicine.* 9(1):3-8. (Jan ,2002)
Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/11924761>
5. Sturm R¹: Increases in clinically severe obesity in the United States, 1986-2000. *Arch Intern Med.* 13;163(18):2146-8. .(Oct, 2003)
Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/1455721>
6. Mokdad AH¹, Ford ES, Bowman BA, Dietz WH, Vinicor F, Bales VS, Marks JS.(2003) Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001. *JAMA.* Jan 1;289(1):76-9.
Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/12503980>
7. Flegal KM¹, Carroll MD, Ogden CL, Johnson CL.(2002) Prevalence and trends in obesity among US adults, 1999-2000. *JAMA.* Oct 9;288(14):1723-7
Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/12365955>
8. Jeukendrup AE¹, Randell R. : Fat burners: nutrition supplements that increase fat metabolism. *Obes Rev.* 12(10):841-51. (Oct;2011)
Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/21951331>