

A Study to Assess the Effectiveness of Green Tea on Reduction of Body Weight among Obese Young Adult Girls Residing at Selected Girl's Hostel of Sharda University, Greater Noida

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Abstract

Obesity considered as a medical problem in many under developing and developed countries across the world. Many researchers are working towards reduction of obesity because it leads to many life threatening diseases like coronary heart diseases hypertension, non-insulin dependent diabetes, pulmonary dysfunctions, osteoarthritis and certain types of cancers.

Obesity is a growing health issue worldwide specifically in India there is growing prevalence of obesity and India is the third most obese country in the world, just behind US and China. In such scenario the rise in obesity and obesity related disorders focuses on the increasing effect of lifestyle changes specifically eating habits i.e. misconception of junk food. The solution to this problem is to have healthy lifestyle speaking of which opens a lot of doors from exercise to food. Reduction of the weight among obese is beneficial which helps to reduce the risk for mortality and morbidity.

All the health care professionals especially in the field of Community Health Nursing must take an extensive effort to educate the people to follow healthy life style practices in reduction of weight and make efforts to reduce the obesity. Hence the researcher felt need of conducting the research on reduction of weight among obese young adult girls as it is a major modifiable risk factors disease in the world.

The aim of the study was to assess the effectiveness of green tea in reduction of body weight among obese young adult girls.

Objectives:

1. To assess the obesity among young adult girls by using BMI calculation.
2. To assess the effectiveness of Green tea on weight reduction among obese young adult girls.
3. To find out the association between the post test weight of obese young adult girls with their selected demographic variables.

Keywords: Assess, Green tea, Obese, BMI Young adult girls

Introduction

Obesity affects every aspect of a people's lives, from health to relationships."

-Jane Velez Mitchell

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Obesity is considered as a medical problem in many under developing and developed countries across the world. And the scientists are working towards reduction of obesity because it leads to many life threatening diseases like coronary heart diseases, hypertension, non-

insulin dependent diabetes, pulmonary dysfunctions, osteoarthritis and certain types of cancers.¹

One of the major factors which causes obesity are decreased physical activity and increased energy intake i.e. in another words increased carbohydrate intake.²

Tea is the most widely consumed beverage in the world, second only to water. The three kinds of true tea—green, black, and oolong—are all derived from the *Camellia sinensis* plant. At harvest tea leaves contain high levels of catechins, a particular class of polyphenols. After harvest catechins may be rapidly converted by enzymatic oxidation to a complex mixture of other derivatives, thearubigins and theaflavins, responsible for the characteristic color of oolong and black tea. Green tea (GT), however, is produced by heat-treating leaves soon after harvest, thereby preserving the catechins from oxidation.³

Treatment of obesity is beneficial because weight loss reduces the risk of mortality and morbidity. Even modest level of weight loss i.e. 5%-10% of initial body fat loss has also marked health advantages. Modest weight loss is suitable, acceptable and realistic goals towards many.⁴

However, it is really difficult to maintain weight loss for long term and found unsuccessful at many cases. Most studies reveal that maintenance of weight loss has undesired weight regain because of the fact that subjects did not change their feeding habit adequately.⁴

To overcome the traditional treatment of obesity, rapidly growing therapeutic era is use of natural herbal supplements for weight loss. Green tea is one of them which have great therapeutic effect on weight loss.⁴

Methodology

Research Approach: In this study Quantitative research approach is used. It is a method in which the study variables are pre selected and defined by the investigator and the data are collected and quantified, then statistically analyzed, often with a view to establishing the cause and effect of relationship among the variables.

Research Design: The design spells out the basic strategies which the researchers adopt to develop information that is accurate and interpretable, (Polit and Beck 2011).

In this study Quasi experimental pre-test, post-test control group research design was used. The study has fulfilled the criteria of manipulation and control group.

Table 1: Tabular presentation of the research design

Group	Pre-test	Intervention	Post-test
Experimental group (obese young adult girls)	O ₁	X	O ₂
Control group (obese young adult girls)	O ₃	-	O ₄

O₁-Pre-test body weight assessment among the Experimental group

O₂-Post-test body weight assessment among the Experimental group

X-Administration of Green tea to the Experimental group

O₃-Pre-test body weight assessment among the Control group.

O₄- Post-test body weight assessment among the Control group

Independent Variables: Independent variable is the variable that stands alone and does not depend on any other.

In this study researcher independent variable was Green tea.

Dependent Variable: Dependent variable is the variable the researcher is interested in understanding explaining or predicting.

In this study researcher independent variable was Body weight

Extraneous Variable: A variable that confounds the relationship between the independent and the dependent variable, that needs to be controlled either in the research design or through statistical procedure.

In this study the extraneous variables were age, religion, education, family monthly income, dietary pattern, times of food eaten, source of information on green tea effect, previous regimen followed to reduce weight.

Setting: Setting refers to the area where the study is conducted. It may be natural setting of laboratory setting depending upon the study topic and researcher's choice.

This study has been conducted in was Mandela, Sarojini, Kasturba, Mother Teresa and Indira girls hostels of Sharda University.

Population: The entire set of individuals or objects having some common characteristics, **(Polit and Beck, 2011)**.

The populations of the present study were the obese young adult girls of age between 20 to 35 years.

Target Population: The target population consist of obese young adult girls those who are residing in different girls hostel of Greater Noida

Accessible Population: The accessible population consist of obese young adult girls those who are residing at selected girls hostel of Sharda University.

Sample: A set of a population selected to participate in a study, **(Polit and Beck 2011)**.

The sample selected for the present study were obese young adult girls those who are residing at different girls hostel of Sharda University who are willing to participate and present during the time of data collection.

Sampling Technique: Sampling technique refers to the process of selecting the population to represent the entire population, **(Polit and Beck, 2011)**.

Purposive sampling technique, it is a type of non-probability sampling approach was found to be appropriate for the present study.

Sample Size: It consists of total 60 obese young adult girls. i.e 30 obese young adult girls in Experimental group and 30 obese young adult girls in Control group

Criteria for Sample Selection

Inclusion Criteria

- Young adult girls who are in the age group of 20-35 years.
- Young adult girls who are under the category of obesity by BMI assessment according to WHO.
- Obese Young adult girls who are residing in girls hostels of Sharda University.

Exclusion Criteria

- Obese young adult girls who were suffering from any disease condition.
- Obese young adult girls who were doing physical exercise and taking medicine to reduce weight.
- Obese Young adult girls who were below 20 years and above 35 years of age are not included in the study

Development of Tool: The research instrument was developed by doing study from the literature review. The primary and secondary sources of literature were reviewed to develop at the appropriate tool. Validity was obtained from the 5 experts from different department of nursing, Statistician, Ayurvedic doctor. Their opinions and valuable suggestion were incorporated in the tool and it was finalized by the guide.

Description of the Tool

Section A: Demographic data was collected from the sample which include Age, Religion, Educational status, monthly family income, dietary pattern, times of food eaten, source of information of green tea effect, previous any regimen followed to reduce weight.

Section B: Measurement of the BMI was assessed by measuring the weight in kg with the help of weighing scale and the measurement of height in m² with the help of stadiometer.

$$\text{BMI} = \text{weight in kg} / \text{height in m}^2$$

Discussion

A study to assess the effectiveness of Green tea on reduction of body weight among obese young adult girls at Selected girls hostel of Sharda University.

The Findings Regarding Sample Characteristics: On demographic variables the results of the study shows that in the experimental group majority of the obese young adult girls 24 (80%) of them belongs to the age group of 20-23 years, In Control group majority of the obese young adult girls were 25 (83.3%) of them belongs to the age group of 20-23 years. In the experimental group majority of the obese young adult girls 21 (70%) of them were Hindus. In Control group majority of the obese young adult girls, 27 (90%) of them were Hindus. In the experimental group majority of the obese young adult

girls were 20 (66.7%) of them were in Medical course. In Control group majority of the obese young adult girls were 25 (83.3%) of them were in Medical course. In the experimental group majority of the obese young adult girls 18 (60%) of them had income of above Rs 25000. In Control group majority of the obese young adult girls 23 (76.7%) of them had income of above Rs 25000. In the experimental group majority of the obese young adult girls were 23 (76.7%) of them were in Mixed diet. In Control group majority of the obese young adult girls were 26 (86.7%) of them were in mixed diet. In the experimental group majority of the obese young adult girls 20 (66.7%) of them used to eat 3 times a day. In Control group majority of the obese young adult girls, 24 (80%) of them used to eat 3 times a day. In the experimental group majority of the obese young adult girls 22 (73.3%) of them got information from friends/relatives. In Control group majority of the obese young adult girls 16 (53.3%) of them got information from friends/relatives. In the experimental group majority of the obese young adult girls 14 (46.7%) of them didn't followed any regimen. In Control group majority of the obese young adult girls 19 (63.3%) of them didn't followed any regimen.

Objectives of the Study Were

1. To assess the obesity among young adult girls by using BMI calculation.
2. To assess the effectiveness of Green tea on weight reduction among obese young adult girls.
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Objective 1: To assess the obesity among young adult girls by using BMI calculation.

Frequency and percentage distribution of the obese young adult girls in experimental and control group

In Experimental Group: The study result have shown that majority of the obese young adult girls 28(93.33%) of them are in class I categories of obesity,2(6.66%) of them are in class II categories of obesity and none of them were found in class III categories of obesity.

In Control Group: The study result have shown that majority of the obese young adult girls 26(86.66%) of them are in class I categories of obesity, 4(13.33%) of them are in class II and none of them were in class III categories of obesity.

This study was supported by T. lobstein, L Baur and R Uauy(2017) who conducted a study on worldwide trends in body mass index, underweight, overweight, and obesity from 1975 to 2016: a pooled analysis of 2416 population- based measurement studies in 128.9 million children, adolescents and adults The study had shown that Global age-standardized prevalence of obesity increased from 0.7% (0.4–1.2) in 1975 to 5.6% (4.8–6.5) in 2016 in girls, and from 0.9% (0.5–1.3) in 1975 to 7.8% (6.7–9.1) in 2016 in boys, In the same year, 50 (24–89) million girls and 74 (39–125) million boys worldwide were obese.

Objective 2: To assess the effectiveness of Green tea on body weight reduction among young adult girls in experimental group.

Compare the pre-test and post-test body weight of the Obese young adult girls in experimental group:

The study result shows that the mean percentage of body weight during pre-test was 80.7% with standard deviation 8.6 and the post test mean was 79.0% with standard deviation 8.5. In this it was clear that post test mean % was less as compared to mean % of pre-test and t calculated value was more than t- table value. Hence it was found that Green tea is effective in reducing the body weight among obese young adult girls in the experimental group.

Compare the pre-test and post-test body weight of the obese young adult girls in control group:

The study result shows that the mean percentage of body weight during pre-test was 82% with standard deviation 7.13 and the post test mean was 82.20% with standard deviation 7.03. In this the pre-test and post- test mean% score were almost same with only mean difference is 0.20. It was found that there was no significant difference between pre-test and post-test mean % score clearly indicating that there is no impact of any other factor causing in reducing the weight among obese young adult girls in control group.

Compare the post-test body weight of the obese young adult girls in experimental and control group:

The study result shows that the post test mean % of experimental group is 79.03 with standard deviation 8.5 and post-test mean % of control group was 82.20 with standard deviation 7.03 which had shown that there had no significant difference between mean percentage of body weight level in experimental and control group but still it

may required more duration for administration of Green tea to show the impact of Green tea on weight reduction.

This study was supported by a single blinded clinical trial on Effects of green tea on the body weight of malaysian young obese females by Redhwan Ahmed Al-Naggar, Muhamed, T. Osman, Mahfoudh Abdulghani. In the study rresearcher concluded that daily consumption of green tea beverage in amount of 1.5 litres per day for up to consecutively 25 days is affectively way to reduce body weight.

Objective 3: To find out the association between the post-test body weight among obese young adult girls with their selected demographic variables in experimental and control group.

Association between the post-test body weight among obese young adult girls with their selected demographic variables in experimental group: Chi- square values were calculated to find out the association between post test scores on the body weight in experimental group among obese young adult girls with their demographic variables. It was revealed that there was no significant association between post- test body weight of Experimental group when associated with demographic variables of Age, Religion, Education, Monthly family income, dietary pattern, times of food eaten, source of information of green tea, previous regimen followed to reduce weight ($P < 0.05$). It seems that Green tea on body weight was effective to the experimental group irrespective of their demographic variables.

This study was supported by a randomized placebo controlled double blind trial on body weight loss and weight maintenance in relation to habitual caffeine intake and green tea supplementation by Westerterp-PM S, lejeunem P.G.M, and. Kovacs E M. R. High caffeine intake was associated with weight loss through thermo genesis and fat oxidation and with suppressed leptin in women. In habitual low caffeine consumers, the green tea-caffeine mixture improved WM, partly through thermo genesis and fat oxidation.

Conclusion

The present study was to assess the effectiveness of green tea on weight reduction among young obese adult girls. The results of the results have revealed that the mean percentage of body weight during pre-test was 80.7% with standard deviation 8.6 and the post test mean was 79.0% with standard deviation 8.5.. Hence it was found that Green tea is effective in reducing

the body weight among obese young adult girls in the experimental group. There was no significant association was found with the weight of adult girls and their socio demographic variables.

Conflict of Interest: There is no conflict.

Source of Funding: Sharda University

Ethical Clearance: Taken

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