

## Effective of Multicomponent Intervention on Visceral Adiposity

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### ABSTRACT

**Background:** Visceral adipose tissue is a hormonally active component of total body fat. Abnormally high deposition of visceral adipose tissue is known as visceral obesity. Various physiological, psychosocial and clinical factors influence the amount and distribution of the adipose tissue throughout the human body. Much research has reveals that stress can affect lifestyle choices and health behavior leading to overweight and obesity.

**Aim:** The main aim of the current study was to assess the effectiveness of Multicomponent Intervention on Visceral Adiposity (BMI, Hip Waist Ratio) among employees with Hypertension in NLC India Hospital, Neyveli, Tamil Nadu.

**Materials and methods:** Quantitative research approach was used for this study. The experimental study design was used for this study. Total 25 samples were selected using Simple random Sampling Technique.

**Conclusion:** The effectiveness of multicomponent intervention was implicated with findings of body weight which was 71.1 with the standard deviation of 11.8, body mass index was 30.6 with the standard deviation of 2.4 and the waist hip ratio was 0.81 with the standard deviation of 0.06 and the improvement was statistically tested by “z” test. The result found to be significant at  $P < 0.0001$ , because of intervention.

**Keywords:** Multicomponent, Intervention, Visceral adiposity, BMI

### INTRODUCTION

Adipose tissue is loose connective tissue composed of adipocytes and originally derived from lipoblasts. Visceral adipose tissue is a hormonally active component of total body fat, which possesses unique biochemical characteristics that influence several normal and pathological processes in the human body. Abnormally high deposition of visceral adipose tissue is known as visceral obesity. Various physiological, psychosocial and clinical factors influence the amount and distribution of the adipose tissue throughout the human body [1]. Much research has shown that stress can affect lifestyle choices and health behaviors such as food consumption and physical activity leading to overweight and obesity.

### OBJECTIVES OF THE STUDY

- To assess the effectiveness of multicomponent intervention on visceral adiposity (BMI, Hip Waist Ratio) among employees with hypertension.
- To evaluate the effectiveness of administration of cherry juice, stress management and Sleep hygiene among employees with hypertension.
- To find out the association between BMI and Hip Waist Ratio with multicomponent intervention.

### METHODOLOGY

#### Research approach

Quantitative approach was adopted for the study.

#### Research design

The design used was experimental research design.

#### Study setting

The study was conducted in General Hospital of NLC, Tamil Nadu.

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### Study population

The population of the study includes employees with hypertension in General Hospital of NLC Ltd., who met the inclusion criteria.

### Sample and sample size

Patient admitted in General Hospital of NLC Ltd. and those who fulfill the criteria, where selected as sample. The Sample Size was 25.

### Sampling technique

The samples who met the inclusion criteria during the data collection were selected Simple Random Sampling Technique.

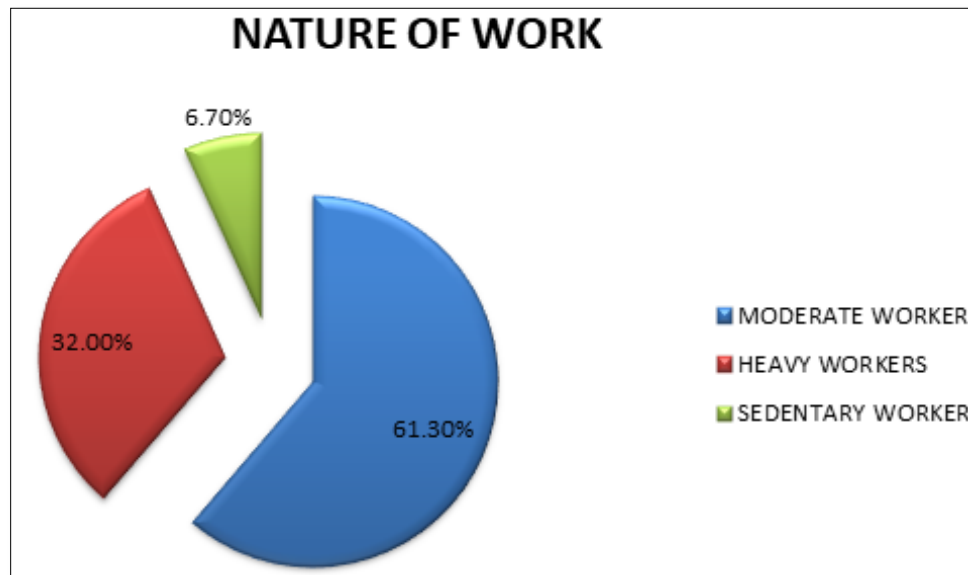
### Data collection procedure

The permission was obtained from the concerned authorities conduct the study. Complete information regarding the study was explained to the Subjects and consent form was

obtained. The sample was selected according to inclusion and exclusion criteria. The personal data was collected from the sample and the pretest value was obtained from control and experimental group, which includes (BMI, Hip Waist Ratio). Multi component intervention included the following: Administration of cherry juice, stress management and Sleep hygiene. MCI was carried out for 3 month in experimental group. During this period the investigator in person was constantly monitoring the participants for following of the intervention. After 3 month the post-test values was obtained from control and experimental group. The investigator will use descriptive and inferential statistics to analyze the data.

### RESULTS

The distribution of nature of work among employees with hypertension is shown elaborately via a pie-chart in **Figure 1**. And, **Table 1** shows the frequency and percentage wise distribution of the demographic variables among obese employees.



**Figure 1.** Shows that distribution of nature of work among employees with hypertension.

**Table 1.** Frequency and percentage wise distribution of selected demographic variables among obese employee (n=25).

S. No.	Demographic Variables	Frequency	Percentage
1	<b>Age</b>		
	26-36 years	14	56.0%
	37-47 years	9	36.0%
	48-58 years	2	8.0%
2	<b>Gender</b>		
	Male	14	56.0%
	Female	11	44.0%
3	<b>Religion</b>		
	Hindu	23	94.7%
	Christian	1	4.0%
	Muslim	0	0.0%
	Others	1	1.3%
4	<b>Educational Qualification</b>		
	No formal education	0	0.0%
	Primary	1	2.7%
	Higher secondary	1	4.0%
	Degree and above	23	93.3%
5	<b>Types of Family</b>		
	Nuclear	15	61.3%
	Joint	10	38.7%
	Extended	0	0.0%
6	<b>Family Income</b>		
	<10000 Rs	10	41.3%
	10001-20000 Rs	12	48.0%
	20001-30000 Rs	2	9.3%
	>30000 Rs	1	1.3%
7	<b>Working Hours</b>		
	8 h	25	100%
8	<b>Dietary Pattern</b>		
	Vegetarian	8	32.0%
	Non-vegetarian	17	68.0%
9	<b>Do You Consume Junk Food</b>		
	Yes	24	97.3%
	No	1	2.7%

**Table 2** reveals that average score of weight is 75.9 with the standard deviation of 11.9, were as in body mass index score is 32.2 with the standard deviation of 1.8, were as in waist hip ratio score is 0.84 with the standard deviation of 0.05, after implementation of focused dietary patten and stress management training was improved with the weight is 71.1

with the standard deviation of 11.8, were as in body mass index is 30.6 with the standard deviation of 2.4, were as in waist hip ratio is 0.81 with the standard deviation of 0.06 and the improvement was statistically tested by “Z” test. The result found to be significant at  $P < 0.0001$ , because of intervention [2].

**Table 2.** Mean and standard deviation of pre-test and post-test level of reducing weight loss among obese employees.

S. No.	Weight Loss Assessment	Mean		Standard Deviation		Z-test	P Value
		Pre-test	Post-test	Pre-test	Post-test		
1	Weight	75.9	71.7	11.9	11.8	25.507*	<0.0001
2	Body Mass Index	32.3	30.6	1.8	2.4	9.389*	
3	Waist Hip Ratio	0.84	0.81	0.05	0.06	12.730*	

*P < 0.0001 is significant*

## DISCUSSION

The results revealed that the average score of weight was 75.9 with the standard deviation of 11.9 and BMI average score was 32.2 with the standard deviation of 1.8. Regarding waist hip ratio the average score was 0.84 with the standard deviation of 0.05. The effectiveness of multicomponent intervention was implicated with findings of body weight which was 71.1 with the standard deviation of 11.8, BMI was 30.6 with the standard deviation of 2.4 and the waist hip ratio was 0.81 with the standard deviation of 0.06 and the improvement was statistically tested by “z” test. The result found to be significant at  $P < 0.0001$  because of intervention [3].

## CONCLUSION

Hence visceral obesity is associated with increased adipocytokine production, pro-inflammatory activity and deterioration of insulin sensitivity, increased risk of developing diabetes, hypertension, atherosclerosis and higher mortality rate. In India, World's obese population hits 640 million among 2.3% are men versus 5% are as severely obese (BMI-35 kg/m<sup>2</sup>). This places an individual at significantly increased risk of conditions such as diabetes, heart disease and cancer. Tart cherries are clearly a potent tool for inhibiting the chronic, often obesity-related, low-level inflammation that can lead to many disorders. Stress management can facilitate weight loss in overweight and obese women. With an 8 week stress management programme, this study implies that the multi component intervention which includes cherry juice, stress management, sleep hygiene was very effective in reducing the weight among obese hypertensive employees [4].

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