



# An Examination Of The Impact Of Garlic Pill Supplements As Additional Therapy For Individuals With Hyperlipedemia.

Dr. Vasudevan N J<sup>1\*</sup>, Dr. Velmurugan.A<sup>2</sup>, Dr. Siva Jeya Anand T<sup>3</sup>, Dr. Baskar T<sup>4</sup>

<sup>1\*</sup>Associate Professor, SUM Nursing College, SOA Deemed to be University, Odhisha

<sup>2</sup>Professor, St. John's Nursing College, Kattapana, Idukki District, Kerala

<sup>3</sup>Professor, Chitra College of Nursing, Pathanamthitta District, Kerala.

<sup>4</sup>Professor, SUM Nursing College, SOA Deemed to be University, Odhisha

**\*Corresponding Author:** Dr. Vasudevan N J

\*Associate Professor, SUM Nursing College, SOA Deemed to be University, Odhisha

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## ARTICLE INFO

## ABSTRACT

Cardiovascular disease (CVD) refers to a class of disorders that affect the heart and blood vessels, and it represents a leading cause of morbidity and mortality worldwide. These diseases encompass a range of conditions, including coronary artery disease, heart failure, valvular heart diseases, and disorders of the blood vessels (such as atherosclerosis and peripheral artery disease). Cardiovascular diseases can manifest as acute events, such as heart attacks and strokes, or as chronic conditions that progressively impact the heart's ability to function.

The prevalence of cardiovascular diseases is a global health concern, affecting individuals across diverse demographic and socio-economic groups. While age is a significant risk factor, CVD can also affect younger populations, highlighting the importance of preventive measures and early detection.

The current study is aimed to assess the effectiveness of a garlic pills (**Allium Sativum**) among hyper lipedemic hospital employees in selected hospitals at Pathanamthitta Dist, Kerala.

### Objectives:

- ✓ To evaluate the hospital staff's baseline data for hyperlipidemia.
- ✓ To assess the efficacy of additional therapy for garlic pills in hyperlipidemic hospital staff.
- ✓ Discover the relationship between the posttest and chosen demographic factors.

### Hypotheses:

These hypotheses was tested at the 0.05 level of significance

- **H1:** The mean post interventional clinical variables were significantly lower than the mean pre intervention among hyperlipidemic hospital employees.
- **H2:** There was a significant association between the post test and selected demographic variables.

Conceptual framework: Von Bertalanffy's General System Theory

Research design: Pre Experimental one group Pretest- Posttest design

Population: Hospital employees with prehypertension who were aged between 25-65 years

Sample size: The sample size were 100

Sampling: Convenience Sampling Technique

Setting: Selected Hospitals at Patahanamthitta district, Kerala

Tool: Demographic variables and clinical parameters

**Data collection:** They were instructed to take 500mg of garlic pills once a day before breakfast for three months after being identified as hypertensive hospital staff by screening utilizing a sphygmomanometer and clinical criteria, primarily the Lipid Profile. The entire data collection process took six months to complete.

**Data analysis:** Descriptive statistics such as mean, mean percentage and standard

deviation were used to describe demographic characteristics. Inferential statistics used were Paired test for comparing the pre and post test of blood pressure level. Chi-square test was adapted to find the association between pre and post test blood pressure level after the intervention of garlic pills.

**Major findings of the study:** The study identified that the mean difference in systolic BP was 13.69, diastolic pressure was 10.96 & VLDL is 18.63 and Triglycerides was 28.14. The mean difference was increased with 16.85. The difference was statistically significant at  $P < 0.05$ . So the study suggests that there was an association of post test scores with selected demographic variables like gender, marital status, education, type of work, working hours per day, height, weight, BMI, dietary pattern, salt intake, life style practices, exercise and leisure time activity. The study proved that garlic pill was effective and maintains the blood pressure among employees with hypertension.

**Keywords:** Garlic pills, Hypertension, Triglycerides, cardiovascular disease.

## INTRODUCTION:

Hyperlipidemia is a medical condition characterized by elevated levels of lipids (fats) in the blood, including cholesterol and triglycerides. It represents a significant risk factor for the development of cardiovascular diseases, such as atherosclerosis, coronary artery disease, and stroke. The intricate interplay of genetic, environmental, and lifestyle factors contributes to the dysregulation of lipid metabolism, leading to the accumulation of lipids in the bloodstream<sup>1</sup>.

The prevalence of hyperlipidemia is substantial and continues to be a global health concern. Elevated levels of low-density lipoprotein cholesterol (LDL-C), often referred to as "bad cholesterol," are particularly associated with an increased risk of atherosclerotic cardiovascular events. High levels of triglycerides, another type of blood lipid, also contribute to this risk. As highlighted by a comprehensive review in the "Journal of Clinical Lipidology" by Chapman et al. (2018), hyperlipidemia is a complex disorder influenced by both genetic and environmental factors. The review emphasizes the need for personalized approaches to managing lipid levels, taking into account an individual's unique risk profile<sup>2</sup>.

Genetic predisposition plays a crucial role in the development of hyperlipidemia, with certain genetic variations affecting lipid metabolism and transport. However, lifestyle factors such as diet, physical activity, and smoking also significantly contribute to the progression of this condition. The landmark Framingham Heart Study (Dawber et al., 1951) has been instrumental in establishing the association between elevated cholesterol levels and cardiovascular risk, providing a foundational understanding of the link between hyperlipidemia and heart disease<sup>3</sup>.

Effective management of hyperlipidemia involves lifestyle modifications, including a heart-healthy diet, regular exercise, and smoking cessation. Pharmacological interventions, such as statins and other lipid-lowering medications, are often prescribed to control lipid levels and reduce cardiovascular risk. In conclusion, hyperlipidemia represents a critical modifiable risk factor for cardiovascular diseases. Understanding its multifaceted nature, incorporating genetic insights, and implementing evidence-based interventions are crucial in the global effort to mitigate the impact of hyperlipidemia on public health<sup>4</sup>.

## STATEMENT OF THE PROBLEM

An examination of the impact of garlic pill supplements as additional therapy for individuals with hyperlipidemia.

### Objectives:

- ✓ To evaluate the hospital staff's baseline data for hyperlipidemia.
- ✓ To assess the efficacy of additional therapy for garlic pills in hyperlipidemic hospital staff.
- ✓ Discover the relationship between the posttest and chosen demographic factors.

### Hypotheses:

These hypotheses were tested at the 0.05 level of significance

- **H1:** The mean post interventional clinical variables were significantly lower than the mean pre intervention among hyperlipidemic employees.
- **H2:** There was a significant association between the post test and selected demographic variables.

### Assumptions:

- Their enthusiasm in the profession will be further increased through nursing interventions tailored to the needs of the patients.
- Hypertensive hospital workers wouldn't have any trouble taking garlic pills at home.

- Regular intake of garlic pills (500 mg) lowers blood pressure and guards against the development of hypertension in cardiovascular disease patients.
- Garlic supplements have no negative side effects.
- It is believed that participants in this study will do so voluntarily.

#### **Delimitations of the study:**

- The study only includes participants with hypertension who works in the predetermined hospital settings.
- A total of 6 months are allotted for the investigation.
- There is a maximum sample size of 100 people.

### **RESEARCH APPROACH**

Planning an action for the intervention of objectives is done using the research design. This study adapts the Pre Experimental one group Pretest- Post-test design.

O1	X	O2
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O1: Before giving out garlic tablets, clinical factors including lipid profile level and blood pressure should be checked.

X: Consumption of garlic pills (500 mg), which includes directions and recommendations for doing so.

O2: Assessing the post interventional blood pressure level after the initial intake of garlic pills.

### **VARIABLES:**

#### **Independent Variable:**

Garlic Pill has been used here as independent variable.

#### **DEPENDENT VARIABLE:**

In this research the dependent variables are hypertensive hospital employees.

#### **ANALYSIS:**

All of the data were gathered and brought to the master coding sheet, and facts were constructed to pursue them. Using the proper picturesque and derivable statistics, these data were examined, tabulated, and evaluated.

#### **ORGANIZATION OF THE DATA:**

The gathered information was tallied, examined, and then interpreted. The results were then presented in the form of tables and diagrams under the sections that follow.

- Information on hypertensive individuals' demographic characteristics in Section A:
- Data on the impact of garlic supplements on clinical characteristics among hypertensive hospital staff are presented in Section B.
- Information on the correlation between the post-test and a particular demographic factor which has been mentioned in section c.

#### **THE FREQUENCY DISTRIBUTION OF DEMOGRAPHIC FACTORS AMONG HYPERTENSIVE HOSPITAL STAFF IS SHOWN IN TABLE 1**

**N= 100**

S.NO	DEMOGRAPHIC VARIABLE	FREQUENCY	PERCENTAGE
1	<b>SECTION –A</b> <b>IDENTIFICATION OF DATA</b> 1. ge (years) a. 5-35 b. 6-45 c. 6-55 d. 56-65		
		34	34
		46	46
		7	7
		3	3
2	Gender a) Male b) Female	67 33	67 33
3	Marital status a.	65	65

	married b. unmarried c. widow/Widower d. Separated	14 8 3	14 8 3
4	Religion a. Hindu b. Muslim c. Christian	48 34 18	48 34 18
5	Type of family a. Nuclear Family b. Joint family c. Extended family	35 60 05	35 60 05
6.	Educational status a. Primary b. Secondary c. Higher Secondary d. Collegiate	07 22 36 35	07 22 36 35

Table 1 depicts the illustrative percentage of clients with in the age group 46% of the people were in the age group of 45-65 years of age and 67% of them were female and 48% were considered to be Hindu and predominance of the clients were married which is about 65%. Most of the clients were considered as joint family which is about 60% and most of them qualified up to higher secondary which is 36%.

#### Association of Type of work and the post test scores of Triglycerides

N=100

Type of work	Tri glycerides		Chi square	Df	P value
	Upto 170	Above 170			
Sedentary	14	4	5	2	.044
Moderate	35	23			
Heavy	17	2			

According to the table, the triglyceride levels in 14 (14%) and 4 (4%) were both up to 170 mg/dl. With moderate work, 35 (35%) samples had 170 mg/dl, and 23 (23%) had more than 170 mg/dl. With intensive work, 17 (17%) samples had 170 mg/dl and 2 (2%), more than 170 mg/dl. The calculated chi square value is 5, and the significance level is .044.

#### Association of Gender and the post test scores of Waist Circumference

N=100

GENDER	Waist Circumference		Chi square	Df	P value
	46-89 cm	Above 90 cm			
Male	28	29	9.3	1	.002
Female	34	9			

The above table reveals that in pretest regarding With regard to gender and waist circumference, 62(62%) were having waist circumference of 46-89 cm and 38(38%) had above 90 cm. The chi square value obtained is 9.3 since the p value is obtained is  $p < .002$ , so it is inferred that there is a significant association between gender and waist circumference among hyperlipidemic hospital employees.

**Association of Marital Status and the post test scores of Very low density Lipo Protein****N=100**

Marital Status	VLDL		Chi square	Df	P value
	46-99 mg/dl	Above 100 mg/dl			
Married	19	51	12.5	3	.006
Un Married	0	16			
Widow/widower	0	11			
Separated	2	1			

With regard to table Marital Status and very low density lipo protein, 21 (21%) were having very low density lipo protein of 46-99mg/dl and 79(79%) had above 100 mg/dl. The chi square value obtained is 12.5 since the p value is obtained is  $p < .006$ , so it is inferred that there is a significant association between marital status and very low density lipo protein among prehypertensive hospital employees.

**Association of working hours per day and the posttest scores of waist circumference****N=100**

Working hours Per day	Waist circumference		Chi square	Df	P value
	46-89 cm	Above 90 cm			
< 6 hours	2	4	7.8	3	.049
6-8 hours	39	15			
9-11 hours	17	18			
> 11 hours	4	1			

With regard to table, working hours Per day and waist circumference, the samples with waist circumference value between 46-89 cm included 2(2%) working <6 hours, 39 (39%) working 6-8 hours, 17(17%) working 9-11 hours and 4(4%) working above 11 hours. The samples with waist circumference value between above 90 cm included 4(4%) working <6 hours, 15 (15%) working 6-8 hours, 18(18%) working 9-11 hours and 1(1%) working above 11 hours. The chi square value obtained is 7.8 since the p value is obtained is  $p < .049$ . So it is inferred that there is a significant association between working hours Per and waist circumference among prehypertensive hospital employees.

**Association of Salt Intake and the post test scores of HDL****N=100**

Habit of salt Intake	HDL		Chi square	Df	P value
	Up to 40mg/dl	Above 40mg/dl			
During cooking	36	56	3.8	1	.049
During eating	6	2			

With regard to Table, the samples with HDL, up to 40mg/dl, 36(36%) were having the habit of salt intake during cooking and 6(6%) were having the habit of salt intake during eating. The samples with HDL, above 40mg/dl, 56(56%) were having the habit of salt intake during cooking and 2(2%) were having the habit of salt intake during eating. The chi square value obtained is 3.8. Since the p value is obtained is  $p < .049$ . So it is inferred that there is a significant association between Habit of salt Intake and HDL among prehypertensive hospital employees.

**DISCUSSION:**

Study has been rightly classified and dividing up results which has been given below,

- The percentage distribution between the experimental and control groups in hyperlipidemic hospital employees and the consistency of clinical parameters.
- The study's conclusions shed light on the possibility of using garlic tablet therapy to help hyperlipidemic individuals maintain a healthy blood pressure level.
- The research findings help nursing staff to manage patients with hyperlipidemic clients by incorporating garlic therapy as a complementary nursing intervention.
- Garlic therapy to be administered to all hyperlipidemic patients.
- Relationship between the intake of garlic pills perception during the hyperlipidemic clients among the control and experimental groups
- Regularity and percentage distribution of garlic pills in the experimental group of hyperlipidemic hospital employees.

### CONCLUSION:

The conclusion drawn from this present study was that in post test most of the samples had 52% mild hypertension and 47% had moderate hypertension. The mean difference in systolic BP is 13.69, diastolic pressure is 10.96, LDL is 20.49 VLDL is 17.64 and Triglycerides is 39.23 the mean difference is increased with 16.85. It also implicates that there is reduced in waist circumference and Neck Circumference after the correct usage of Garlic Pills. Subsequently the administration of garlic pill, the clients become familiar and found themselves comfortable and expressed satisfaction and they shared their experiences with the family members and others. They recommended others to follow the same. This ensures that administration of 500 mg of garlic pill every day helps to reduce the clinical profiles on BP among hyperlipidemic hospital employees and also it will help to reduce morbidity and mortality rate of employees with high blood pressure to live a healthy life.

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