ASSESSMENT ON OUTCOME OF GARLIC MIXTURE ON BLOOD PRESSURE AMONG HYPERTENSIVE CLIENTS

DISSERTATION SUBMITTED TO

THE TAMIL NADU DR.M.G.R.MEDICAL UNIVERSITY

CHENNAI

IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE AWARD OF

DEGREE OF

MASTER OF SCIENCE IN NURSING

APRIL, 2012

A QUASI-EXPERIMENTAL STUDY TO ASSESS THE OUTCOME OF GARLIC MIXTURE ON BLOOD PRESSURE AMONG HYPERTENSIVE CLIENTS IN SELECTED VILLAGE, KOLLENCODE, 2011-2012

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ACKNOWLEDGEMENT

My sincere and heartfelt gratitude to **GOD ALMIGHTY** for his grace and mercy that sustains me throughout my life.

I wish to express my gratitude to the **Founder** and **Chairman, R. Rangarajan, Vice-Chairman, R. Sakunthala Rangarajan, Managing Directors** and **Trustees** of Vel Group of Educational Institutions, whose dynamic personality and charisma was an inspiration to many of us throughout our course in this esteemed institution.

I express my heartful thanks to our respected **M. Anuradha**, **R.N., R.M., M.Sc(N).,** Professor and Principal, Vel. R.S. Medical College-College of Nursing, whose guidance and support enabled me to do the work. I shall always be thankful to her constant encouragement, valuable- in – depth discussion and suggestions throughout the study.

I am privileged to express my sincere thanks to **K. Sudha Devi**, **R.N., R.M., M.Sc(N),** Professor and Vice Principal and H.O.D Medical Surgical Department, Vel.R.S. Medical College – College of Nursing Chennai, for her expert guidance and encouragement to carry out this dissertation.

I express my whole hearted thanks to **J. Darcus Deva Sinthiya**, **R.N., R.M., M.Sc(N),** Reader, Community Health Nursing Department, Vel.R.S. Medical College – College of Nursing Chennai, for her support, expert guidance and esteemed mentorship to carry out this dissertation.

I express my sincere thanks to **P. Uma Maheswari, R.N., R.M., M.Sc(N),** Lecturer, of Community Health Nursing Department, Vel.R.S. Medical College – College of Nursing Chennai, for her constant support and expert guidance throughout this dissertation.

I express my sincere thanks to **L. Mary Celma Usha, R.N., R.M., M.Sc(N),** Assistant Lecturer, of Community Health Nursing Department, Vel.R.S. Medical College – College of Nursing Chennai, for her support and guidance throughout this dissertation.

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ABSTRACT

Quality of life may be multidimensional incorporating individuals subjective perception physical, emotional and social well being including both cognitive (satisfactory) and emotional (happiness) component. Cardiovascular disease is the world's leading killer, accounting for 16.7 million or 29.2 percent of total global in 2003. With modernization, a large proportion of Asians are trading healthy traditional diets for fatty foods, physical jobs for deskbound sloth, the relative calm of the countryside for the stressful city. Heart-attack victims are just the first wave of a swelling population of Asians with heart problems. While deaths from heart attacks have declined more than 50 percent since the 1960s in many industrialized countries, 50 percent of global cardiovascular diseases related deaths now occur in low and middle-income nations, which cover most countries in Asia.

The consumption of fruits and vegetables has been associated with low incidences and mortality rates of many diseases, particularly cardiovascular disease and cancer. Eating fruits and vegetables also reduces blood pressure and serum cholesterol, boosts the immune system, detoxifies contaminants and pollutants, and reduces inflammation. Hence, the investigator was interested to decrease the economic burden of the disease by a selected non- pharmacological method, for reducing the level of blood pressure. Thus, "A study was conducted to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected village, Kollencode". The aim of the study was to assess the outcome of garlic mixture on blood pressure. A Quasi experimental research design was adopted. The study was conducted at Kollencode village. 60 hypertensive clients who fulfilled the inclusion criteria were selected using non probability purposive sampling technique.

The demographic variables were age, gender, education, occupation, income, marital status, type of food, nature of physical activities, chronicity, family history, exercise, drugs, and sleep. Pre-test level of blood pressure was taken for both experimental and control group in lying down position in the right hand. Preparation of garlic mixture was given to the experimental group for 30 days.8-10 cloves of garlic (10 gms) prepared by boiling of 100ml of aavin nice milk, which is I.S.O certified has the nutritive value of fat 3percent and S.N.F 8.5percent

homogenized and pasteurized toned milk, remove milk cream, crush the garlic and again boil the skimmed milk with garlic for 5minutes and given to the hypertensive clients every day in the morning before breakfast for 30 days and advised to follow their regular antihypertensive drugs also.The control group were given only antihypertensive drugs.post test level of blood pressure was measured. The comparison of pre and post assessment was made which showed high significant result. Thus, the study concludes that garlic mixture was effective to decrease the level of high blood pressure.

The conceptual framework of this study was based on Errestin Wiedenbach's Helping Art of Clinical Nursing Theory. The research hypothesis formulated for the study was, there is a significant difference between pre test and post test level of blood pressure among hypertensive clients in the age group between 45 to 65years. The findings showed highly significant decrease in value of level of blood pressure following nursing intervention at $p<0.05$. The outcome was proved by comparing the pre and post test levels of blood pressure where the result showed $p<0.05$ level of significance. Thus, the research hypothesis was accepted. It was also found that, there was a significant association between the demographic variables such as diet, family history of hypertension and the mean difference of the blood pressure.

The study concluded that the administration of garlic mixture has reduced the level of high blood pressure. Therefore, it can be used as a safe and effective way to maintain the blood pressure thereafter. It can be incorporated in community health care nursing practice. Hence, the investigator ended in reducing the economic burden of the disease by a selected non-pharmacological method, for reducing the level of blood pressure, the prime root cause for major life threatening diseases.

CHAPTER I

INTRODUCTION

"The world's largest fire can be extinguished by pouring a cup of water at the right time"

It is every individual unique and prime responsibility to protect themselves against the challenges of their survival. Modern medical care is now enabling many with chronic diseases to survive. Developing country wanted to take appropriate steps to avoid the "Epidemics" of non – communicable disease likely to come with socio- economic and health development.

The prevalence pattern of hypertension in developing countries is different from that in the developed countries. In India, a very large, populous and typical developing country, community surveys have documented that between three and six decades, prevalence of hypertension has increased by about 30 times among urban dwellers and by about 10 times among the rural inhabitants. Various factors might have contributed to this rising trend and among others, consequences of urbanization such as change in life style pattern, diet and stress; increased population and shrinking employment have been implicated. Hypertension, smoking, diabetes, obesity, physical inactivity, and atherogenic diets have all been identified as modifiable risk factors for heart diseases. Age, male gender and a family history of premature coronary heart disease (CHD) have been identified as non-modifiable risk factors.

Garlic (Allium sativam) is nature's best known herbs and it contains allicin, a compound able to inhibit the action of the blood pressure arising hormone angiotensin II. Researcher at the University of Adelaide, Australia have reported that daily uses of fresh garlic reduces systolic blood pressure by an average of 4.6 mmof Hg (2007).

BACKGROUND OF THE STUDY

Hypertension, a chronic illness is a growing condition in our society, due to life style changes. Once it is diagnosed, its control basically depends on adapting a healthy lifestyle and therapeutic compliance. Hypertension is the silent killer disease of today and the single most important predictor of cardiovascular risk. The higher the blood pressure the greater the risk. Hypertension is defined as a consistent elevation of systolic blood pressure > 140 mm of Hg and

consistent elevation of diastolic blood pressure >90 mm of Hg Hypertension mainly of two types primary (essential) and secondary hypertension.

Blood pressure was first recorded in 1773 by Rev Stephen Hales and since then various people have tried to study further on the techniques of recording blood pressure and the cause of variation in blood pressure. Hypertension is a medical condition in which constricted arterial blood vessel increases the resistance to blood flows, causing the blood to exert excessive pressure against vessel walls. The heart must work harder to pump blood through the narrowed arteries. If the condition persists, it is damage for the heart and blood vessels, increasing the risk for stroke, heart attack and kidney failure. Often it causes no symptom until it reaches a life threatening stage. If we strive for better hearts for our people, the holistic management of hypertension needs to be preached as well as practiced (Wasier 2003)

Dietary modification remains key to the treatment of clients with hypertension and prevention of complications due to hypertension. Through life style modifications and dietary management, the blood pressure can be controlled. It helps to prevent the incidents of hypertension in the world (Association of Physicians in India 2001).

The incidence and prevalence of hypertension can be significantly reduced by low salt intake, vegetarian dish, stress management, cessation of smoking, and reduction of alcohol intake. This is also helpful in reducing the doses of antihypertensive drugs and its side effects. The vegetarian dish and high intake of potassium in diet leads to lower incidents of hypertension. So dietary management play an important role in reduction/lowering blood pressure.

SIGNIFICANCE AND NEED FOR THE STUDY

Hypertension or high blood pressure is one common ailment in adults. It is estimated that more than 10 million people may have high blood pressure but are unaware of their illness. As per research conducted in India, about 25 per cent adults in cities and 10 per cent in rural areas suffer from hypertension. The overall incidence of hypertension in India is estimated to be 66 million.

According to a survey conducted by Association of Physicians of India, urban areas in the country had a significantly higher incidence of hypertension 27-37 per cent as compared to

rural area 2-8 per cent (Agarwal-2001).In India about 20per cent of the adult population suffers from hypertension, making if the country's biggest silent killer. From this almost, 90 per cent of the cases fall into the category of primary as essential hypertension.

The Tamilnadu Government Public Health and Preventive medicine were conducted 385 camps in rural areas of Tamil Nadu between 2002-2003 and 7.98 lakhs people were screened of this 5.02 per cent was affected with hypertension. Apart from blood pressure medications, alternative treatment, diet and lifestyle changes are essential in treating hypertension (public Health and Preventive Medicine 2003).

Robert Pastore (American Heart Association, 2002) recommended that diet can be a powerful strategy to combat hypertension. Exercise, diet supplement and certain herbs can produce a hypertensive effect, consuming a diet which is rich in fiber, potassium, calcium and magnesium and vegetables, fruits, legumes whole grains, low fat dietary products reduces the blood pressure.

Conlin (2009) conducted clinical trials and epidemiological studies on 1000 clients by random sampling which confirmed the blood pressure lowering effects of sodium restriction, the consumption of diets that are low in fat and enriched in fruits and vegetables and the sustained effects of weight reduction .This reaffirms the role of lifestyle modification as both preventive and adjunctive means to lower blood pressure.

Health uses of garlic

- Reduce cholesterol and lower chances of heart diseases

- Antioxidant; Garlic is rich in antioxidant that can help fend off cancer, heart disease and the effects of aging

- Anti-Bacterial; It may be used to treat infections like thrush

- Reduced blood pressure; Garlic can helps to reduce blood pressure.

- Garlic is also help regulate blood sugar levels and therefore may be helpful

Diet is the backbone of any treatment plan for hypertension. Without effective dietary intervention good metabolic control usually cannot be achieved. Dietary changes are of paramount importance. The prevention and correction of obesity is a prudent away of reducing the risk of hypertension. Other measures to control hypertension include reduction of stress, increasing relaxation techniques, medication, exercise promotion, cessation of smoking and alcoholism.

Nurses provide a major portion of health care and they have opportunities for assessing and finding the health needs of these clients. They also render follow – up services to them in order to maintain an effective control of hypertension. It is necessary to assess the life –style of people and identify the risk factors in hypertension before rendering the promotive health services, nurse can help in various setting in identification and modification of risk factors of hypertension.

TITLE

Assessment of outcome of garlic mixture on blood pressure among hypertensive clients.

STATEMENT OF THE PROBLEM

A Quasi-experimental study to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected village, Kollencode.

OBJECTIVES

1. To assess the pre test level of blood pressure among hypertensive clients in the experimental and control group
2. To assess the post test level of blood pressure among hypertensive clients in the experimental and control group
3. To compare the post test level of blood pressure among hypertensive clients in the experimental and control group
4. To determine the outcome of garlic mixture on blood pressure among hypertensive clients in the experimental group
5. To associate the mean difference of blood pressure among hypertensive clients with their demographic variables in the experimental group

VARIABLES

Independent variable

Garlic mixture

Dependent variable

Blood pressure [systolic and diastolic]

Demographic variables

It includes age, gender, education, occupation, income, marital status, type of food, nature of physical activities, chronicity, family history, exercise, drugs, and sleep

OPERATIONAL DEFINITION

Outcome

It refers to the extent to which the garlic mixture on blood pressure has decrease the blood pressure levels as measured by sphygmomanometer

Garlic mixture

It is prepared by boiling of 100ml of aavin nice milk, which is I.S.O certified has the nutritive value of fat3percent and S.N.F 8.5percent homogenized and pasteurized toned milk, remove milk cream, crush the 10gms (8-10cloves) of garlic and again boil the skimmed milk with garlic for 5minutes.

Blood pressure

Blood pressure is a measurement of beating of heart muscle. It relates to the pressure of blood put forth against the artery walls as it flows through the body.

Hypertensive clients

It refers to the individual who has the systolic blood pressure (SBP) equal to and greater than 140 mmHg and/or diastolic blood pressure (DBP) equal to and greater than 90 mmHg.

ASSUMPTION

Allium sativam, a type of dietary garlic has allicin compound, which is broken down in to sulphur compounds, react with red blood cells and produce hydrogen sulphide which relaxes the blood vessels and keeps blood flowing easily thus to treat high blood pressure. It also been used to treat certain medical conditions such as high cholesterol, infections and cancer.

RESEARCH HYPOTHESIS

H1: There is a significant difference between pre and post test level of blood pressure among hypertensive clients in the experimental and control group

H2: There is a significant association of mean differenced on blood pressure with the selected demographic variables in the experimental group

DELIMITATION

1. The study had been delimited for four weeks

2. The study had been delimited to the rural setting

3. Study had been delimited to hypertensive clients

PROJECTED OUTCOME

1. The study will enable the hypertensive clients to include garlic mixture and follow a balanced diet.

2. Application of study finding will help to make standards of nursing care for hypertensive client with hypertension.

3. The community health nurse can recommend the use of garlic mixture for high blood pressure, which will be a health promotion activity in general population.

SUMMARY

This chapter dealt with the background of the study, significance and the need for the study, title and statement of the problem, objectives, null hypothesis, operational definition, assumption, delimitation, projected outcome and organization of the report.

ORGANIZATION OF THE REPORT

Chapter I dealt with the background of the study, significance and the need for the study, title and statement of the problem, objectives, variables, operational definition, assumption, null hypothesis, delimitations, projected outcome and organization of the report. Further aspects of the study are presented in the following chapters.

Chapter II deals with Review of literature and Conceptual framework.

Chapter III contains Methodology of the research.

Chapter IV explains Data analysis and interpretation.

Chapter V presents Discussion based on objectives

Chapter VI includes Summary, Nursing implications, Recommendation and Limitations of the study.

This is followed by references and appendices.

CHAPTER II

REVIEW OF LITERATURE

Review of literature is a systematic search of published work to gain information about a research topic, Polit & Hungler.

Conducting review of literature is a challenging experience. Through the literature review researcher generates picture of what is known about a particular frame work to proceed with study. A literature review discusses published information in a particular subject area within a certain time period.

A literature review can be just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis .It gives a new interpretation of old material or combines new with old interpretations or it traces the intellectual progression of the field, including major debates. Depending on the situation, the literature review may evaluate the sources and advice the researcher on the most pertinent or relevant subject matter.

Review of literature consists of two parts

Part I- Review of literature

Section A- Literature related to disease Burden of Hypertension

Section B – Literature related to effect of garlic on hypertension

Section C-Literature related to hypertension and management

Section D- Literature related to effect of garlic and health

Part II- Conceptual framework

PART I

Section A- Literature related to disease Burden of Hypertension

Lancet (2009) conducted a study and finds that India will bear 60 per cent of the world's heart disease burden in the next three years. In addition, researchers have determined that compared to people in other development countries, the average age of patients with heart disease in lower among Indian people and Indians are more likely to have types of heart diseases that lead to worse outcomes. In 2001 alone 7.1 million deaths were attributed to ischemic heart disease 80 per cent of which were in relatively poor countries.

Mark J. Pletcher (2008) conducted a study in San Francisco, analyzed blood pressure measurement of 3560 adults ages 18 – 30 from seven examination over the course of 20 years and said nearly 20 percent of the study participants developed pre hypertension were more likely than those with lower blood pressure to have calcium is a marker of atherosclerosis and a predictor of future heart attacks and strokes.

Shyamal Kumar Das et al., (2005) conducted a study on growing trend of high prevalence of hypertension in a developing country. A total of 1609 respondents out of 1662 individuals participated in the cross-sectional survey of validated and structured questionnaire followed by blood pressure measurement. Results showed pre-hypertensive levels of blood pressures among 35.8% of the participants in systolic group (120-139mm of Hg) and 47.7 per cent in diastolic group (80-89 mm of Hg). Systolic hypertension (140 mm of Hg) was present in 40.9 per cent and diastolic hypertension (90 mm of Hg) in 29.3 per cent of the participants. Age and sex-specific prevalence of hypertension showed progressive rise of systolic and diastolic hypertension in women when compared to men.

Lewis et al (2004) conducted a study in prevention of hypertension can be achieved through the modification in alcohol consumption, physical activity, avoidance of tobacco products and stress management and finds that complications of hypertension are heart diseases, cerebro vascular diseases, peripheral vascular diseases, atherosclerosis retinal damage, cerebrovascular accident, transient ischemic attack and peripheral vascular disease.

Nathan D. Wong (2004) conducted a study on 4,646 adults who underwent laboratory and physiological testing. A total of 1671(3.4 percent) of the participant had hypertension defined as the systolic blood pressure of at least 140 mm of Hg and a diastolic blood pressure of at least 90 mm of Hg. A total of 68.4 percent of those with hypertension were parameter assessment and the investigator reported that clinically significant blood pressure reduction of similar magnitude was observed in all blood pressure monitoring modalities. The researcher concluded that the slow breathing provide additional support as an adjunctive life style modification of treating hypertension.

Sampatti Sambhaji Todkar, et al., (2004)conducted a study on rethinking diseases of affluence; Coronary Heart Disease in Developing Countries to find out prevalence of hypertension consists of 1297 persons aged 19 years and above in the field practice area of govt. medical college Aurangabad, Maharashtra. A house-to-house survey was conducted and interviewed the participants by systematic random sampling method, using pretested structured standard questionnaire. Two independent blood pressure (BP) readings were taken in sitting position by visiting each participant at their home and concluded the overall prevalence of hypertension in study subjects was 7.24% per cent.

Brundtland G.H. (2002), Director General of World Health Organization, believes that it is the time for global debate to be directed as much towards prevention as to cure. With an increased focus on prevention, the entire public health community stands to gain. Among non communicable diseases, hypertension- myocardial infection ranks first because it is on the leading cause of morbidity and pre-mature morbidity in both developed and developing countries.

Rodgers A, et al., (2000) conducted a study on reducing the global burden of blood pressure-related cardiovascular disease, estimates of the incidence of cardiovascular disease in Asia, studies of the associations of blood pressure with cardiovascular disease risks in Asia and elsewhere, and randomized trials of blood pressure lowering treatments. The results suggest that DBP values of 80 mm of Hg or more account for about 57 per cent of all stroke deaths and about 24 per cent of all coronary heart disease deaths in Eastern Asian populations. And concluded that increased blood pressure levels are directly responsible for the majority of stroke deaths (more

than 50 per cent) and a substantial minority of deaths from coronary heart disease (about 25 per cent) in Eastern Asia.

Section B- Literature related to effect of garlic on hypertension.

Frank OR, (2010) conducted a study on aged garlic extract lowers blood pressure in patients with treated but uncontrolled hypertension: A randomized controlled trial for patients with treated, but uncontrolled, hypertension. They used a double-blind, randomized, placebo-controlled trial involving 50 patients. Patients received 960 mg (containing 2.4 mg S-allylcysteine) for12weeks. In patients with uncontrolled hypertension (SBP≥140mm Hg), systolic blood pressure was on average 10.2±4.3 mm Hg (P=0.03) lower with garlic therapy as compared to placebo. Changes in blood pressure between the groups were not significant in patients with SBP<140 mmHg at baseline. Thus, this 10-point drop in blood pressure induced by AGE should be associated with an approximate 22 per cent reduction of total major cardiovascular event.

Kurt M Reinhart (2009) conducted a study on effects of Garlic on blood pressure in Patients with and Without Systolic Hypertension: Controlled Trials was conducted to identify randomized controlled trials in humans evaluating garlic's effect on blood pressure. Studies whose population had a mean baseline SBP greater than 140 mm Hg were evaluated separately from those whose population had lower baseline blood pressures. Ten trials were included in the analysis; 3 of these had patients with elevated SBP. Garlic reduced SBP by 16.3 mm of Hg (95 per cent CI 6.2 to 26.5) and DBP by 9.3 mm of Hg (95 per cent CI 5.3 to 13.3). This meta-analysis suggests that garlic is associated with blood pressure reductions in patients with an elevated SBP although not in those without elevated SBP.

McMahon FG, (2009) conducted a study on garlic-lowers the blood pressure. A popular garlic preparation containing 1.3 per cent allicin at a large dose (2400 mg) was evaluated in this open-label study in nine patients with rather severe hypertension (diastolic blood pressure > or = 115 mm of Hg). Sitting blood pressure fell 7/16 (+/- 3/2 SD) mm of Hg at peak effect approximately five hours after the dose, with a significant decrease in diastolic blood pressure (p < 0.05) from 5-14 hours after the dose. No significant side effects were reported. Results indicate

that this garlic preparation can reduce blood pressure. Further controlled studies are needed, particularly with more conventional doses (e.g., < or = 900 mg/day), in patients with mild to moderate hypertension.

Sobenin A et al., (2009) conducted a study to assess the effect of garlic-powder lower systolic and diastolic blood pressure in men with mild and moderate arterial hypertension. In this trial with an active control arm, the hypotensive action of time - released garlic powder tablets was compared with that of regular garlic pills in 84 men with mild or moderate at arterial hypertension. After an 8-week placebo treatment run - in phase patients were randomized either to 600mg Allicor (n=30) or to placebo (n=20) daily for eight weeks and a reduction of both systolic and diastolic pressure by 7.0mm Hg and 3.8 mm Hg respectively. The results of this study shows that garlic tablets are more effective for the treatment of mild and moderate hypertension than are regular garlic supplements.

Karin Ried.,et.al.,(2008) conducted a study regarding non-pharmacological treatment options for hypertension have the potential to reduce the risk of cardiovascular disease. Randomized controlled trials with true placebo groups, using garlic-only preparations, and reporting mean systolic and/or diastolic blood pressure and standard deviations were included in the meta-analysis. Meta-analysis of all studies showed a mean decrease of 4.6 ± 2.8 mm Hg for SBP in the garlic group compared to placebo (n = 10; p = 0.001), Regression analysis revealed a significant association between blood pressure at the start of the intervention and the level of blood pressure reduction (SBP: R = 0.057; p = 0.03; DBP: R = -0.315; p = 0.02).thus suggests that garlic preparations are superior to placebo in reducing blood pressure in individuals with hypertension.

Qureshi R, Hasan SN, Azam SI (2008) conducted a study on Effect of dietary garlic on the blood pressure in humans. A questionnaire was developed in order to estimate the dietary intake of garlic and administered to 101 adult subjects, at Karachi, Pakistan. The demographic parameters including age, sex, marital status and education were recorded an average garlic use of 134 grams per case per month was found. 67 per cent of the subjects used garlic in cooked food while the rest used either in the raw form or in pickles. 59 per cent thought that dietary use

of garlic is healthy. Subjects with blood pressure on the lower side are found to consume more garlic in their diets. This study shows that individuals whose blood pressures are on the lower side are more likely to consume more garlic in their diets.

Edward.M (2007) revealed that garlic has been found in to lower blood pressure and may theoretically potentiate the effects of hypotensive agents. A meta-analysis of 11 randomized controlled studies showed a mean decrease of 4.6 mmHg for systolic blood pressure and no significant effect for diastolic blood pressure in subjects treated with garlic (most often garlic powder 600 to 900 mg/day, providing 3.6 to 5.4 mg of the active component allicin) compared to placebo. In the subgroup analysis of studies where subjects had a mean baseline blood pressure in the hypertensive range (SBP 140 mmHg or higher; DBP 90 mmHg or higher), mean decrease associated with garlic was 8.4 mmHg and 7.3 mmHg, respectively, for systolic and diastolic blood pressure.

Qidwai. W., et.al. (2000) conducted a study regarding the effectiveness of dietary garlic (Allium sativam) on blood pressure. A questionnaire was developed in order to estimate the dietary intake of garlic per person per month and to record three blood pressure readings on each individual. It was administered to 101 adult subjects, presenting to the Family Practice Centre of a hospital in the city of Karachi, Pakistan. The data was entered into the epi - info program and the analysis was done using the SPSS software. Subjects with blood pressure on the lower side are found to consume more garlic in their diets. The mean difference is significant for systolic with p value of 0.05. This study shows that individuals whose blood pressures are on the lower side are more likely to consume more garlic in their diets.

Sifagy.C.A., Neil.H.A., (2000) conducted study to assess the effect of garlic on blood pressure, in this study eight trials were identified call using the same dried garlic powder preparation (Kwai) with data from 415 subjects included in the analysis. Only three of the trials were specifically conducted in hypertensive subjects of the seven trials that compared the effect of garlic with that of placebo, three showed a significant reduction in systolic blood (SBP) and four in diastolic blood pressure (DPB), the result of this study was 5.5 percent decrease in systolic blood pressure and a smaller decrease in diastolic pressure. Researchers concluded that garlic powder supplement may be of clinical use in patients with mild high blood pressure.

Section C- Literature related to hypertension and management

Job.S., (2009) conducted a study a study to assess the effectiveness of abdominal breathing exercise on blood pressure among hypertensive patient. 40 hypertensive patients were selected by simple random sampling technique and assigned as experimental (no=20) and control (n=20) group. The study was conducted at Mahajubille Hospital, Edathua. Data collected through structured interview/observation schedule and intervention on abdominal breathing exercise was taught to the experimental group by playing video CD, Abdominal breathing exercise was performed for 21 days. Result of the study was shown that there was a significant difference between the mean systolic blood pressure before 145.5(SD=18.20) after 136.6(S D=19.03) and t=6.52(p=0.01) and significant difference between the mean diastolic blood pressure before 84.7(S D=8.81), after 76.8(S D=7.96) t= 5.89(p=0.01

Kavitha.K., (2009) conducted a study to assess the effectiveness of Guided imagery on blood pressure among PIH mothers 30 patients were selected by using purposive sampling technique at government hospital, Maduari. Data collected through structured interview / observation schedule and intervention on guided imagery was administered using the Audio CD, and made them to hear the Guided imagery two times a day for 20 minutes for 5 days. Result of this study was concluded that the significant difference between the mean systolic blood pressure before 158.3 (S.D=11.4) after 136.7(S.D=5.6),t=15.9(P=0.01) and the mean diastolic blood pressure before 102 (S.D=6.1), after 88.3 (SD=4.7) and t = 13.7 (P=0.01).

Mourya M. Et al (2009) conducted a randomized prospective controlled clinical study with two intervention groups, who were advised to do 3 months of slow breathing and fast breathing exercises respectively. At the end of third month the subjects were underwent physiological testing such as systolic and diastolic blood pressure and the researcher concluded that improvement in both the sympathetic and parasympathetic that is associated with those practicing the slow breathing exercises.

Modesti P.A., et.al., (2008) conducted a study on slow abdominal breathing combined with music listening among hypertensive patients of sample size 48. Experimental group include patients taking anti-hypertensive drugs and 20 patients served as control group. Experimental

group listed to music (raga) for 30 minutes while conducting abdominal breathing and control group did not undergo both. The blood pressure among those who listened to music while conducting abdominal breathing dropped by 3 mmof Hg at one week and 4 mm of Hg at one month compared with control

Thangamani (2007) conducted a study to assess the effectiveness of the Benson's Relaxation therapy among PIH mothers. 30 patients were selected by purposive sampling technique, at Vijaya Hospital, Salem. Data collected through structured interview/observation schedule and intervention on Benson's Relaxation was performed three times a day for 20 minutes for one week. Results of the study shown that there was a significant difference between the mean systolic blood pressure before 143.23(S D=4.36), after 134.6(S D=3.30) and t=13.32(p<0.05) and significant difference between the mean diastolic blood pressure before 93.40(SD =4.55), after 88.18(SD=3.40) and t=7.1(p<0.05)

Elliot W.J et al (2006) contacted a comparative study to determine the effectiveness of device guided slow breathing on office systolic blood pressure and home blood pressure monitor and the changes in office systolic blood pressure were significantly correlated with accumulated time spent in slow breathing. Greater decreases in systolic blood pressure was found and the researcher concluded that even without training, hypertensive patients who receive a device to guide slow breathing significantly lowered their systolic blood pressure.

Rosental t et.al, (2004) conducted a study on slow breathing practice by using interactive device, demonstrated, a sustained reduction in high blood pressure. The clients were advised to do slow breathing for three weeks and at the end of the study they underwent cardio respiratory .it is often called the 'silent killer' as the condition may proceed undetected and uncontrolled, leading to irreparable and organ damage.

Grossman A (2003) conducted an experimental study to determine the effectiveness of device guided breathing exercises, which lowers the blood pressure and respiratory rate. 268 subjects of hypertension are selected and showed 15 minutes of daily slow breathing exercises. At the end of the study the researcher found reduced blood pressure within eight weeks by

10.1/6.1 mm Hg as compared to 7.6/3.4 mm Hg in the control group. The researchers suggested that devise guided slow breathing exercises can be used to lower blood pressure.

Mi Kyung, et.al, (2003) conducted a study on the long term effect of vitamin C supplementation on blood pressure. A total of 439 Japanese subjects initially participated in the trial using vitamin C and beta – carotene to prevent gastric ulcer. Before and on early termination of beta carotene supplementation, 134 subjects dropped out of this trial, where as 120 and 124 subjects took the vitamin C supplement daily at either 50 mg or 500 mg respectively, for five years. After five years, systolic blood pressure increased in groups, regardless of vitamin C dose, compared with base line. There was no change in the diastolic blood pressure.

Akila, et.al, (2002) carried out a study to confirm the relationship between blood pressure and salt excretion. The study involved 375 adults whose blood pressure ranged between normal and mildly elevated without blood pressure medication. The patients were randomly assigned to consume DASH (Dietary Approaches to stop hypertension) diet or a control diet for 30 days. Blood pressure was measured on 30th day of feeding period. In addition a 24 hours urine sample was obtained during the last week of each study period to determine salt excretion. Data analysis showed that patients assigned to the DASH diet excreted salt more easily and in greater amounts as well as reduced their blood pressure. Results also showed that the impact of DASH diet lowers blood pressure more effectively in people with high sodium sensitivity, through its diuretic action.

Miller, et.al, (2002) study conducted on the effect of anti-oxidant vitamin supplementation on traditional cardio-vascular risk factor states that dietary antioxidants, beta-carotene, vitamin C, and vitamin E might play a potential role in reducing the risk of cardiovascular disease through lowering the blood pressure. Finding from this study suggest that vitamin C, fruit and vegetables have a blood pressure lowering effect, especially in the Asian population.

Steffen, et.al. (2001) conducted a study on effect of exercise and weight loss on high blood pressure. Over 100 people with high BP who were not taking medication for it, agreed to have their blood pressure measured through out of the course of the 6 months study. Participants

were divided into 3 groups. One group that used a combined exercise and weight management programme, another group that used only exercise, and a last group that did not exercise or use the weight management programme. It concluded that exercise specially when combined with weight loss, reduces blood pressure levels at rest and in situations that typically elevate BP, such as intense physical activity and emotional distress.

Anastasia et.al, (2000) did a study to determine the effect of exercise and weight loss on cardiovascular responses during mental stress in mildly moderately. Overweight patient with elevated blood pressure 99 men and women with high normal or non-medicated stage 1 to stage 2 hypertension underwent a battery of mental stress tests, subjects were randomly assigned to 1 of 3 treatment. a) Aerobic exercise, b) Weight management combining aerobic exercise with behavioral weight loss program, c) Watching list control group. After 6 months compound with control/subjects .These results demonstrates the exercise particularly when combined with a weight loss program, can lower both resting and stress induced blood pressure level and procedure a favorable hemodynamic pattern resembling that targeted for antihypertensive therapy.

Section D- Literature related to effect of garlic and health.

Kianifer HR., et.al, (2006) conducted a study to assess the effect of oral garlic on arterial oxygen pressure in children with hepato pulmonary syndrome. Garlic powder in a capsule form was given to 15 children with hepatopulmonary syndrome at the dosage of 1g/1.73m (2) per day. Patients were evaluated clinically and by arterial blood gas every four weeks. 8 patients (53.3%) showed an increase of 10mm Hg in their mean arterial oxygen pressure. The baseline PaO(2) was 65.6+/-12.1 mm Hg in the responder group and 47.1+/11.2mm Hg in non-responder group. At the end of treatment the mean PaO(2) in responders 47.5+/-11.87 mm Hg, respectively (P<0.01).It was concluded that garlic increase oxygenation and improve dyspnea in children with hepato pulmonary syndrome.

TessmaB. et.al., (2006) conducted an experimental study to assess the antibacterial effect of garlic (Allium-Sativam) on bacterial isolates from wound infections, the study was conducted in Gondar Universities Teaching Hospital School of Medical Laboratory Technology, the

minimum inhibitory concentration (MIC) and minimum bacterial concentration (MBC) of garlic to control strains of staphylococcus aureus ATTC 25923 and Escherichia coli ATTCC 15 25922, as well as to clinical isolates of S. aureus, E. Coli, Proteus mirabilis, Klebsiella, pneumonia and Pseudomonas aeruginosa were determined using agar dilution method the data was collected in triplicate .All the tested organisms were inhibited by the crude preparation of garlic extract at 33.75mg/ml expect for the control organisms. The results shown that crude preparation of garlic could be used an effective antibacterial agent for the tested organisms.

Dhawan.V., Jain.S., (2005) was conducted a comparative study to assess effect of garlic supplementation prevents oxidative DNA damage in essential hypertension.20patients of essential hypertension as diagnosed. Both groups were given garlic pearls (EP) in a dosage of 250mg per day for 2 months. Baseline samples were taken at the start of the study. i.e o day, and there after 2 months follow-up, A moderate define in blood pressure (BP) and a significant reduction in 8-OHdG, No levels and lipid peroxidation were observed. Subjects with garlic pearls supplementation but significant increase in vitamin levels and total antioxidant status was observed in this group as compared to the control subjects. It was concluded that garlic has beneficial effects in reducing blood pressure and counteracting oxidative stress, and thereby offering cardio protection in essential hypertension.

Sabitha P. et.al., (2005) was conducted a study to assess the efficacy of garlic paste in oral candidiasis. In this study a randomized trial of 56 patients topical application of garlic paste for 14 days was found to be as effect as that of co-trimoxazole solution in suppressing clinical signs of oral candidiasis the results of this preliminary study explore the possible role of garlic in the treatment of oral candidiasis.

Bedi MK., (2001) conducted a study regarding the effectives of garlic in increasing milk secretion .34 primi postnatal mothers were selected randomly and assigned as control and experimental groups. The pretest score were collected on d5. The experimental group mothers were treated with 6 - 8 cloves of raw garlic 2 hour before breast feeding from (d6-d11) and the post test done on d11. The control group mothers were given the routine care. The results were observed by the amount of feeding, letdown sensation and the fullness of breast and concluded there was a significant increase in milk secretion in the experimental group (<.05)

PART II

CONCEPTUAL FRAMEWORK

A conceptual framework on a model is made up of concepts, which are the mental images of phenomenon. A Conceptual framework is a set of coherent ideas or concepts organized in a manner that makes them easy to communicate to others. It provides an organized way of thinking about how and why a project takes place and about how we understand its activities.

Conceptual frameworks are a type of intermediate theory that has the potential to connect to all aspects of inquiry (eg. Problem definition, purpose, literature review, methodology, data collection and analysis). Conceptual framework act like maps that give coherence to empirical inquiry. Because conceptual frameworks are potentially so close to empirical inquiry, they take different forms depending upon the research question or problem. The framework is linked to particular research purposes (exploration, description, decision making and explanation / prediction). The conceptual framework gives the idea to the researcher about the main view and more theme of the research. It is a visual diagram by which the researcher explains the specific area of interest.

The present study is aimed to assess the outcome of garlic mixture on blood pressure among hypertensive clients. Hence, the study is based on Errestin Wiedenbach's Helping Art of Clinical Nursing Theory (1964).

Wiedenbach conceptualizes nursing as the practice of identification of a patient's need for help through observation of presenting behaviors and symptoms, exploration of the meaning of those symptoms with the patient, determining the cause(s) of discomfort and determining the patient's ability to resolve the discomfort or if the patient has a need for help from the nurse or other healthcare professional. Nursing primarily consist of identifying the patient's need for help. If the need for help requires intervention, the nurse facilitates the medical plan of care and also creates and implement nursing plan of care based on needs and desires of the patient. In

providing care, a nurse exercises sound patient's perception of the situation is an important consideration to the nurse when providing competent care (Sitzman and Eichelberger, 2003).

Wiedenbach imparts clarity and power to her work and sets the stage for productive exploration and debate. She defined the following:

1. The patient is any person who has entered the healthcare system and is receiving help of some kind, such as care, teaching or advice.
2. A need-for-help is defined as any measure desired by the patient that has the potential to restore or extend the ability to cope with various life situations.
3. Nursing decisions are made to achieve a specific patient centered purpose rather than completion of the skill itself being the end goal.
4. Each person (whether nurse or patient) is endowed with a unique potential to develop self- sustaining resource. Self- acceptance is essential to personal integrity and self-worth.

Step 1: Identification of the need for help. There are three components.

a) General information: Which comprises of the demographic variables such as age, gender, education, occupation, income, marital status, type of food, nature of physical activities, Chronicity, family history, exercise, drugs, sleep.
b) The Central Purpose: Central purpose refers to what the investigator wants to accomplish. Here the central purpose is to maintain the level of blood pressure among hypertensive clients.
c) Prescription: It refers to the plan of care, the nature of action that will fulfill the central purpose. Here, the prescription is planning for administration of 8-10 cloves of garlic mixture to the hypertensive clients every day in the morning before breakfast for 30 days was given to patients along with their regular antihypertensive drug

Step 2: Ministering the need. The realities are the immediate situation that influences the fulfillment of the central purpose. Nurse should consider the realities of the situation in which she is to provide nursing care. Wiedenbach defines the five realities.

1. The agent: The person who is providing care of her delegates characterized by personal attributes potentials, commitment and competence in nursing. Here it is community health nurse.

2. The Recipient: Is the patient who is characterized by the personal attributes, problems, capacities, aspirations and to cope with the concern or problems beings experience. Here it is the hypertensive clients.

3. The Goal: Is the defined outcomes the nurse wishes to achieve. Here it is to maintain the level of blood pressure among hypertensive clients.

4. The Means: Comprises of the activities and devices through which the practitioner attains the goal. The means include skills, techniques, procedures and devices that may be used to facilitate nursing practice. Here it is the administration of garlic mixture to hypertensive clients.

5. The Facilities: Consists of the human, environmental, professional, organization facilities that not only make up the context in which nursing practices but also constitutes. It is currently existing limits. Here it is Kollencode village.

Step 3: Validating that the needed help was met.

It is validated that the needed help was delivered in achieving the central purpose. The steps involve the post assessment done after ministering the help and the comparison, analysis to infer the outcome. This approach thereby enables the researcher to make suitable decision and recommended action to continue or drop or modify the nursing action. Here the comparison of pre test and post test level of blood pressure among hypertensive clients.

NURSE INVESTIGATOR

STEP I – IDENTIFYING THE NEED FOR HELP

General information

Demographic variables includes age, gender, education, occupation, income, marital status, type of food, nature of physical activities, chronicity, family history, exercise, drugs and sleep

Pre-test level of blood pressure among hypertensive clients in experimental and control group

CENTRAL PURPOSE:

To decrease the level of blood pressure among hypertensive clients by administration of garlic mixture

STEP II – MINISTERING THE NEEDED HELP

EXPERIMENTAL GROUP

PRESCRIPTION

Planning to administer garlic mixture prepared by boiling of 100ml of aavin nice pasteurized toned milk, remove milk cream, crush 10grams of garlic and again boil the skimmed milk with garlic for 5minutes and given to the hypertensive clients every day in the morning before breakfast for 30 days and advice them to continue their regular anti hypertensive meditations.

INTERVENTION

Administration of garlic mixture along with their regular anti hypertensive medications among hypertensive clients in experimental group.

CONTROL GROUP

Planning to give the regular anti hypertensive drugs for the hypertensive clients in the control group

Administering the regular anti hypertensive medication for the hypertensive clients in the control group

STEP III – VALIDATING THAT NEEDED HELP WAS MET

Post test level of blood pressure among hypertensive clients in the experimental and control groups.

Reduction in the level of blood pressure in experimental group

Blood pressure remained same.

REALITIES
Agent – Nurse investigator.
Recipient – hypertensive clients
Goal – reducing the level of blood pressure.
Means – Administering garlic mixture
Environment – Community.

Fig1:MODIFIED WIEDENBACH'S HELPING ART OF CLINICAL NURSING THEORY (1964)

RE-INSTITUTION

CHAPTER III

RESEARCH METHODOLOGY

Research methodology involves systematic procedure in which the research starts from initial identification of the problem to its final conclusion. The role of methodology consists of the procedure and technique for conducting a study.

This chapter describes the research methodology followed to assess the outcome of garlic mixture on the level of blood pressure among hypertensive clients in Kollencode village.

It deals with the research approach, research design, setting of the study, population, sample and sample size, sampling technique, criteria for sample selection, development and description of tool for data collection, content validity and reliability of the tool, ethical considerations, pilot study, data collection procedure and statistical analysis.

RESEARCH APPROACH

The research approach used by the investigator was a quantitative approach

RESEARCH DESIGN

The research design used by the investigator was a quasi experimental research design

VARIABLES UNDER STUDY

Demographic variables

It includes age, gender, education, occupation, income, marital status, type of food, nature of physical activities, chronicity, family history, exercise, drugs, and sleep

SETTING OF THE STUDY

The study was conducted in Kollencode village belongs to Kanyakumari district, Kollencode town panchayat, having the total population of 10,862 people, out of 2047 are belongs to the age group of 45-65years.

POPULATION

Population refers to the entire aggregate of cases that meet the designated criteria. Population refers to the entire set of individuals who have common characteristics and it is important to make a distinction between target and accessible population, Polit & Hungler

Target population

Target population of the study comprises of 2047 people at the age group of 45 to 65yrs.

Accessible population

Accessible population of the study comprises of 201 hypertensive clients within the age group of 45 to 65yrs who are residing in Kollencode village.

SAMPLE

Hypertensive clients aged between 45 to 65 years who fulfilled the inclusion criteria, and who resides in Kollencode village.

SAMPLE SIZE

Sample size consists of 60 hypertensive clients who met the inclusion criteria. 30 samples for experimental group and 30 for control group.

SAMPLING TECHNIQUE

Non probability purposive sampling technique was used to assess outcome of garlic mixture on the level of blood pressure among hypertensive clients aged between 45- 65 yrs.

CRITERIA FOR SAMPLE SELECTION

Inclusive criteria

1. Hypertensive client's with systolic blood pressure between 140 - ≥ 160 mmHg and diastolic blood pressure between 90 - ≥110 mmHg
2. Hypertensive clients with the age between 45 -65 years
3. Male and female clients

4. Hypertensive clients with restricted diet

5. Hypertensive clients who were willing to participate in the study.

Exclusive criteria

1. Clients with complications of hypertension

2. Seriously ill patients

3. Clients with gastric ulcer and allergic to garlic

4. Hypertensive clients using garlic for other alternative therapy.

TOOL

Biophysiological measurement

B.P apparatus and stethoscope

METHOD OF DEVELOPING TOOL

The tool was developed after an extensive review of literature, internet sources and opinion of the experts. It was decided that the bio physiological measurement could be an appropriate tool for the assessment of the level of blood pressure of hypertensive clients. The tool used for the data collection had two sections.

DESCRIPTION OF THE TOOL

Section A
Demographic Variables

Age, gender, education, occupation, income, marital status, type of food, nature of physical activities, chronicity, family history, exercise, drugs, and sleep.

Section B

Biophysiological measurement of blood pressure is checked by sphygmomanometer and stethoscope.

B.P apparatus: (Diamond mercurial sphygmomanometer)

The B.P Apparatus has mercury tank, rubber bag with tubing's, cloth bag, and rubber bag with control valve and glass tube. It has a pressure measuring range of 0-300mm of Hg and it is calibrated with standard U Tube mercury manometer.

B.P measurement:

Blood pressure is measured by placing the client in a comfortable position i.e. lying down with the right arm resting on the bed, to ensure accurate reading

Section C

Joint National Committee (JNC-7) classification system for hypertension

Stage 1 (mild)	140–159 or 90–99 mmof Hg
Stage 2 (moderate)	160–179 or 100–109 mmof Hg
Stage 3 (severe)	≥180 or ≥110 mmof Hg

VALIDITY AND RELIABILITY OF THE TOOL

Validity

The content of the tool was validated by one physician, one alternative medicine person, 3 nursing experts specialized in community health nursing and a dietician

Reliability

The reliability of the tool to assess the level of blood pressure was established by using the inter rater reliability method. The instrument was administered to 10 individuals by the investigator and within 2 minutes the blood pressure was rechecked by another nursing personnel and the tool was found to be reliable for the study. It was obtained by using the Karl-Pearson's Correlation Coefficient method. The 'r' value obtained was 0.9 which indicates highly positive correlation and this shows that the tool was found to be feasible to proceed the study.

ETHICAL CONSIDERATIONS

The study was conducted after the approval of dissertation committee. No harm certificate was obtained from Naturopathy Physician and Dietician. Formal permission was obtained from the panchayat president and hypertensive clients who fulfilled inclusive criteria. The hypertensive clients were clearly explained about the study purpose and written consent was obtained. It was assured to the hypertensive clients that the data will be used only for research purpose and the results will be kept confidential. Anonymities of the study was maintained and explained about the importance of garlic mixture and rights of withdrawal from the study.

PILOT STUDY

The pilot study was conducted in the Vellanoor village from 20-05-2011 to 19-06-11. A formal permission was obtained from the panchayat president and10 hypertensive clients who fulfilled the inclusive criteria were selected and assigned to the 5 experimental and 5 control groups by non probability purposive sampling technique. A brief introduction about self and study was given and data was collected from the hypertensive clients. Written consent was taken from the research subjects and confidentiality of the responses was assured.The objectives of the study were explained. Background factors were collected by questionnaire method. Pre-test level of blood pressure was taken for both experimental and control group in lying down position in the right hand. Garlic mixture is prepared by boiling of 100ml of aavin nice milk, which is I.S.O certified has the nutritive value of fat3% and S.N.F 8.5% homogenized and pasteurized toned milk, remove milk cream, crush the garlic and again boil the skimmed milk with garlic for 5minutes and this preparation of garlic mixture was given to the experimental group every day in the morning before breakfast for 30 days and advised to follow their regular antihypertensive drugs also.The control group were given only antihypertensive drugs. Post test level of blood pressure was measured on 20/06/11. The comparison of pre and post assessment was made which showed high significant result.

The statistical analysis of the pilot study suggested a positive correlation between garlic mixture and blood pressure. The 'r' value obtained was 0.9.It was found to be reliable and appropriate; hence, the procedure was decided to be followed in the main study.

DATA COLLECTION PROCEDURE

The main study was conducted in Kollencode village, from 23/06/11 to 22/07/11. Formal permission was obtained from the panchayat president and 60 hypertensive clients who fulfilled the inclusive criteria were selected and assigned to the 30 experimental and 30 control groups by non probability purposive sampling technique. A brief introduction about self and study was given and data was collected from the hypertensive clients. Written consent was taken from subjects and confidentiality of the responses was assured. The data related to variables were collected.The objectives of the study were explained. Background factors were collected by questionnaire method. Pre-test level of blood pressure was taken for both experimental and control group in lying down position in the right hand. Garlic mixture is prepared by boiling of 100ml of aavin nice milk, which is I.S.O certified has the nutritive value of fat3% and S.N.F 8.5% homogenized and pasteurized toned milk, remove milk cream, crush the garlic and again boil the skimmed milk with garlic for 5minutes and this preparation of garlic mixture was given to the experimental group every day in the morning before breakfast for 30 days and advised to follow their regular antihypertensive drugs also.The control group were given only antihypertensive drugs. Post test level of blood pressure was measured on 23/07/11.

DATA ANALYSIS PROCEDURE

Both descriptive and inferential statistics were used.

Descriptive statistics

Frequency and percentage distribution was used to analyze demographic variables of hypertensive clients. Mean and standard deviation was used to compare the pre test and post levels of blood pressure.

Inferential statistics

Paired't' test was used to assess the outcome of garlic mixture on the levels of blood pressure. ANOVA was used to associate the mean difference of the levels of blood pressure among hypertensive clients with the demographic variables.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the data analysis and interpretation to assess the outcome of garlic mixture on blood pressure among hypertensive clients. Descriptive and inferential statistics were used for the analysis of the data.

According to the study objectives, the interpretation has been tabulated and organized as follows:

ORGANIZATION OF DATA

Section A: Description of demographic variables in both experimental and control group.

Section B: Assessment of pre and post test level of blood pressure in the experimental and control group.

Section C: Comparison of pre and post test level of blood pressure in the experimental and control group.

Section D: Association of post test level of blood pressure with selected demographic variables in the experimental group.

SECTION A

Table I

Frequency and percentage distribution of demographic variables in the experimental and control group.

n = 60

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
Age (in years)				
45 – 51	5	23.33	4	13.33
52 – 58	23	76.67	23	76.67
59-65	2	6.67	3	10.00
Gender				
Male	23	76.67	20	66.67
Female	7	23.33	10	33.33
Educational Status				
Non-literate	2	6.67	2	6.67
Primary education	5	16.67	7	23.33
Secondary education	14	46.67	13	43.33
Graduate level	6	20.00	8	26.67

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
Post graduate level	3	10.00	0	0.00
Occupation				
Service workers, shop and market sales workers	0	0.00	3	10.00
Skilled agricultural and fishery workers	21	70.00	13	43.33
Elementary occupations and clerks	3	10.00	3	10.00
Technicians & associate professionals	0	0.00	6	20.00
Legislators,senior officials,managers, professionals	6	20.00	5	16.67
Individual income (per month)				
Below Rs.4000	0	0.00	1	3.33
Rs.4001 - Rs.6000	0	0.00	1	3.33
Rs.6001 - Rs.8000	0	0.00	0	0.00
Rs.8001 - Rs.10000	23	76.67	17	56.67
Rs.10001 and above	7	23.33	11	36.67
Marital Status				
Single	0	0.00	0	0.00
Married	28	93.33	27	90.00
Divorce	0	0.00	0	0.00

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
Widow/Widower	2	6.67	3	10.00
Type of food				
Vegetarian	0	0.00	0	0.00
Non-vegetarian	30	100.00	30	100.00
Duration of illness				
3 - 4 years	4	13.33	7	23.33
5 - 6 years	14	46.67	18	60.00
>6 years	12	40.00	5	16.67
Are you taking antihypertensive drugs regularly?				
Yes	27	90.00	27	90.00
No	3	10.00	3	10.00
Family history of hypertension				
Yes	24	80.00	27	90.00
No	6	20.00	3	10.00
State the average hours of sleeping per day?				
<8 hours	23	76.67	22	73.33

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
8 hours	2	6.67	5	16.67
>8 hours	5	16.67	3	10.00
Do you take rest in the afternoon?				
Yes	2	6.67	2	6.67
No	28	93.33	28	93.33
Are you practicing simple exercise for hypertension regularly?				
Yes	12	40.00	7	23.33
No	18	60.00	23	76.67

Table I shows the frequency and percentage distribution of demographic variables among hypertensive clients in the experimental and control group.

With regard to the age in the experimental group, majority 23 (76.67%) hypertensive clients were in the age group of 52 – 58 years, 5 (16.67%) were in the age group of 45 – 51 years and 2 (6.67%) were in the age group of 59-65 years. where as in control group majority 23 (76.67%) hypertensive clients were in the age group of 52 – 58 years, 4 (13.33%) were in the age group of 45 – 51 years and 3 (10%) were in the age group of 59-65 years

Considering the gender in the experimental group majority 23 (76.67%) of them were male, 7(23.33%) were female, in control group majority 20 (66.67%) were male and 10(33.33%) were female.

Regarding education status in the experimental group, majority 14(46.67%) had secondary education, 6(20%) had graduate level education, 5(16.67%) had primary education

and 3 (10%) had post graduate level education and 2 (6.66%) were non-literate. In control group majority 13(43.33%) had secondary education, 8(26.67%) had graduate level education, 7(23.33%) had primary education, 2 (6.67%) were non-literate, and none of them had post graduate level education.

Regarding occupation in the experimental group, majority 21(70%) were skilled agricultural and fishery workers, 6 (20%) were legislators, senior officials, managers, and professionals, and 3(10%) were elementary occupations and clerks. In control group majority 13(43.33%) were skilled agricultural and fishery workers, 6(20%) were elementary occupations and clerks, 5 (16.67%) were legislators, senior officials, managers, and professionals, 3(10%) of them were service workers shop and market sales workers, and 3(10%) were elementary occupations and clerks

Regarding the individual income in the experimental group, (per month) majority 23(76.67%) were with the income of Rs.8001-Rs.10000 and 7(23.33%) were with the income of Rs.10001 and above. In control group majority 17(46.67%) were with the income of Rs.8001-Rs.10000, 11(36.67%) were with the income of Rs.10001 and above, and 1(3.33%) with the income of Rs.4001-Rs.6000 and 1(3.33%) with the income of below Rs.4000.

Considering to the marital status in the experimental group, majority 28(93.33%) were married and 2 (6.66%) was widow. In control group majority 27(90%) were married and 3 (10 %) were widow.

Regarding type of foods all 30 (100%) were non-vegetarian. In control group all 30(100%) were non-vegetarian.

Regarding the duration of illness in the experimental group, majority 14 (46.67%) were with the duration of 5-6 years, 12(40%) were with the duration of above 6 years, and 4 (13.33%) were with the duration of 3-4years. Where as in control group majority 18 (60%) of them were with the duration of 5-6 years, 7 (23.33%) were with the duration of 3-4years, and 2(6.66%) were with the duration of above 6 years.

Regarding the regularity of medications in the experimental group, majority 27(90%) were on regular medications and 3(10%) were on irregular medications. Where as in control group majority 27(90%) were on regular medications and 3(10%) were on irregular medications.

With regard to the family history in the experimental group, majority 24 (80%) of them were with the history of hereditary illness and 6(20%) of them were not having the history of hereditary illness. Where as in control group 27 (90%) of them were with the history of hereditary illness and 3(10%) of them were not having the history of hereditary illness Considering the average hours of sleep in the experimental group, majority 23 (76.67%) sleeps for below 8hours, and5 (16.67%) sleeps for above 8 hours and 2(6.67%) sleeps for 8 hours. Where as in control group majority 22 (73.33%) sleeps for below 8hours, 5(16.67%) sleeps for 8 hours and3 (10%) sleeps for above 8 hours.

Among 30 samples in the experimental group majority 28 (93.33%) will not take rest in the afternoon and 2(6.66%) take rest in the afternoon. Where as in control group majority 28 (93.33%) will not take rest in the afternoon and 2(6.66%) take rest in the afternoon.

Considering the regular practicing of simple exercises for hypertension in the experimental group, majority18 (60%) were not practicing sample exercises for hypertension and 12(60%) were practicing sample exercises for hypertension. Where as in control group majority 23(76.67%) were not practicing sample exercises for hypertension and 25(83.33%) were practicing sample exercises for hypertension.

Fig.2 Percentage distribution of age of the samples in experimental group
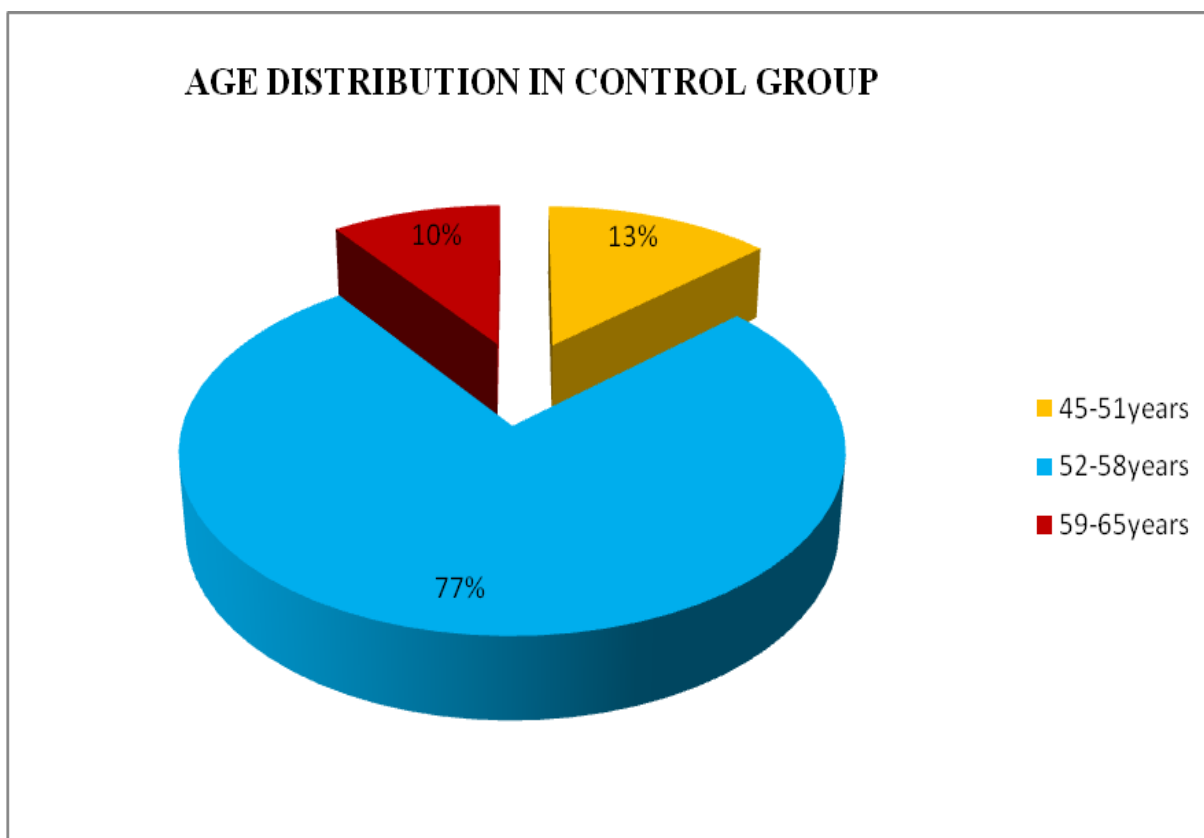
Fig.3 Percentage distribution of age of the samples in control group
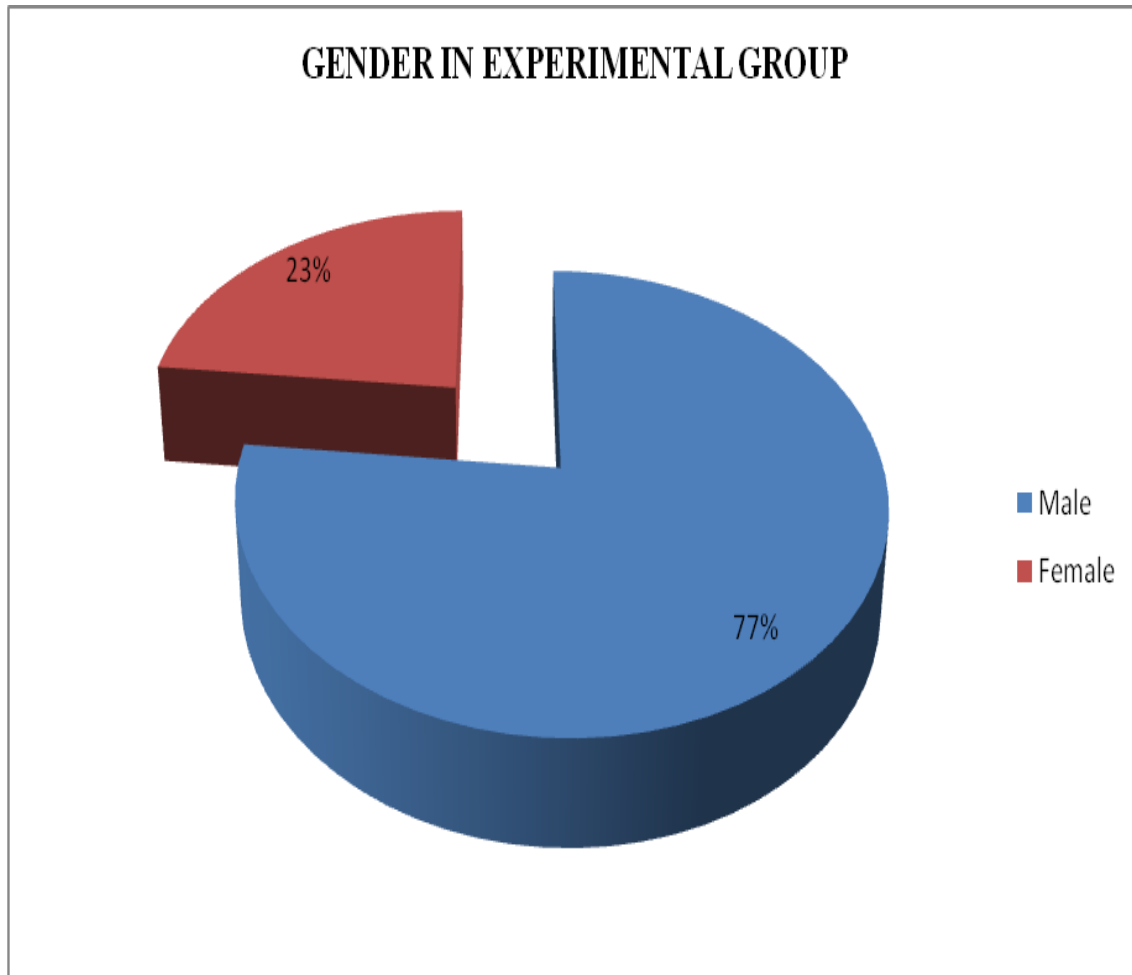
Fig.4 Percentage distribution of gender of the samples in experimental group
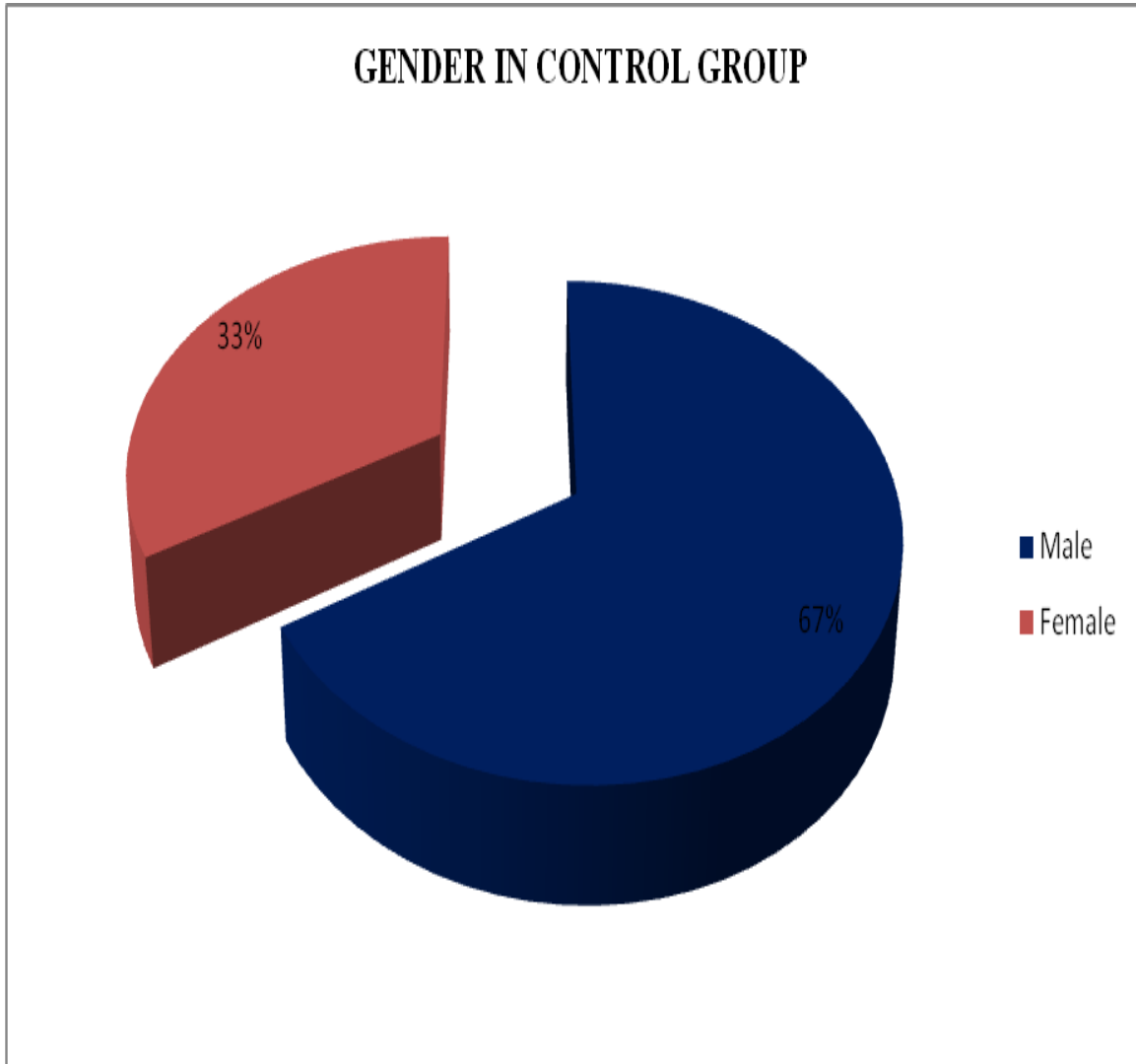
Fig.5 Percentage distribution of gender of the samples in control group
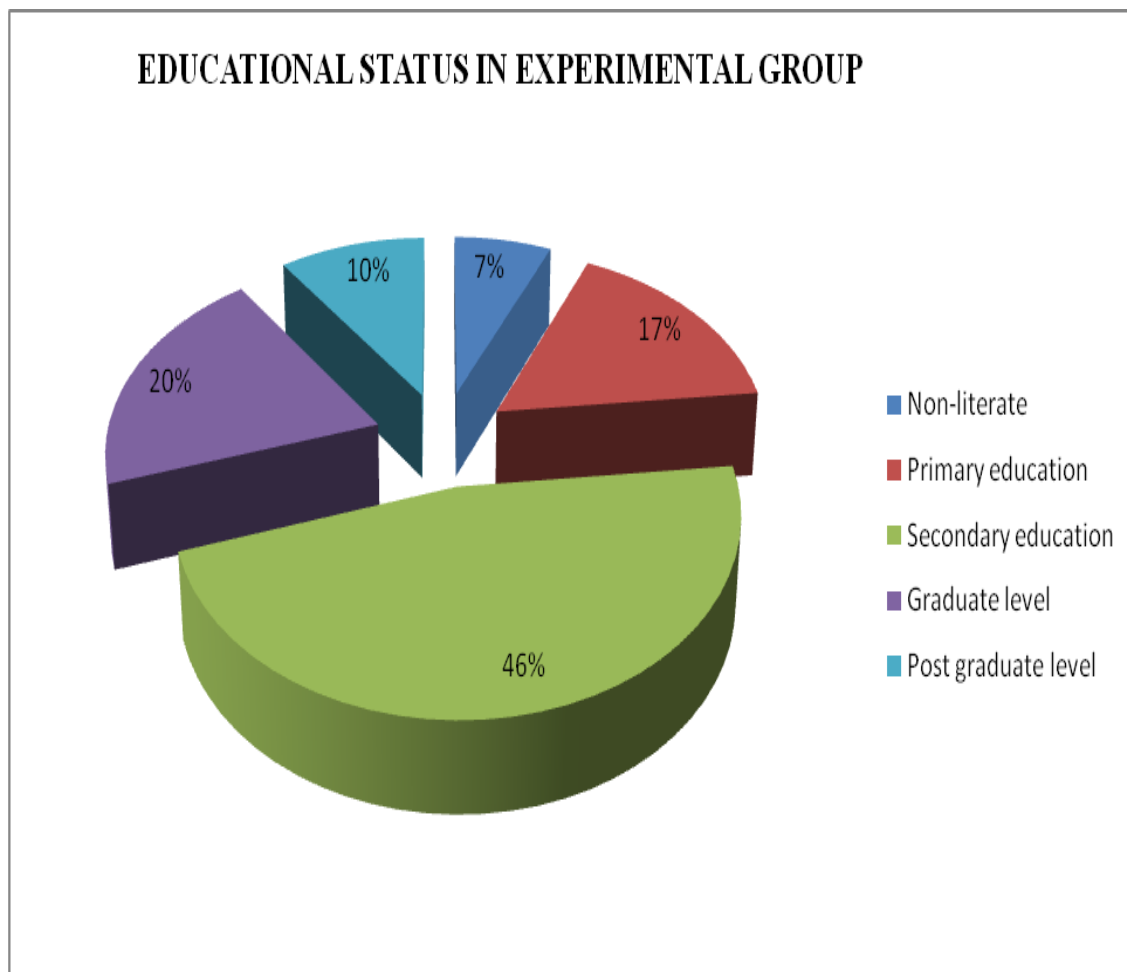
Fig.6 Percentage distribution of educational status of the samples in experimental group
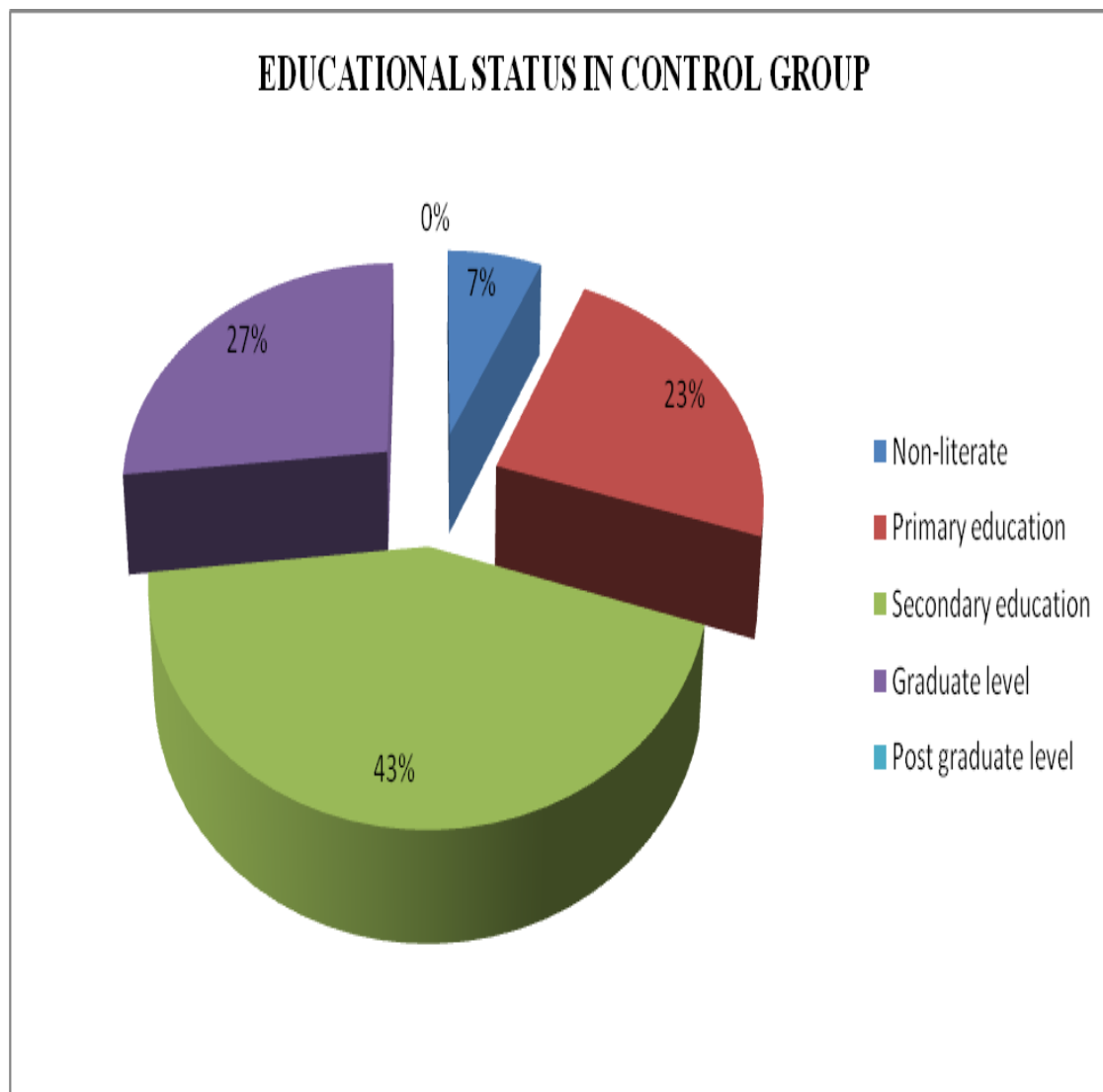
Fig.7 Percentage distribution of educational status of the samples in control group
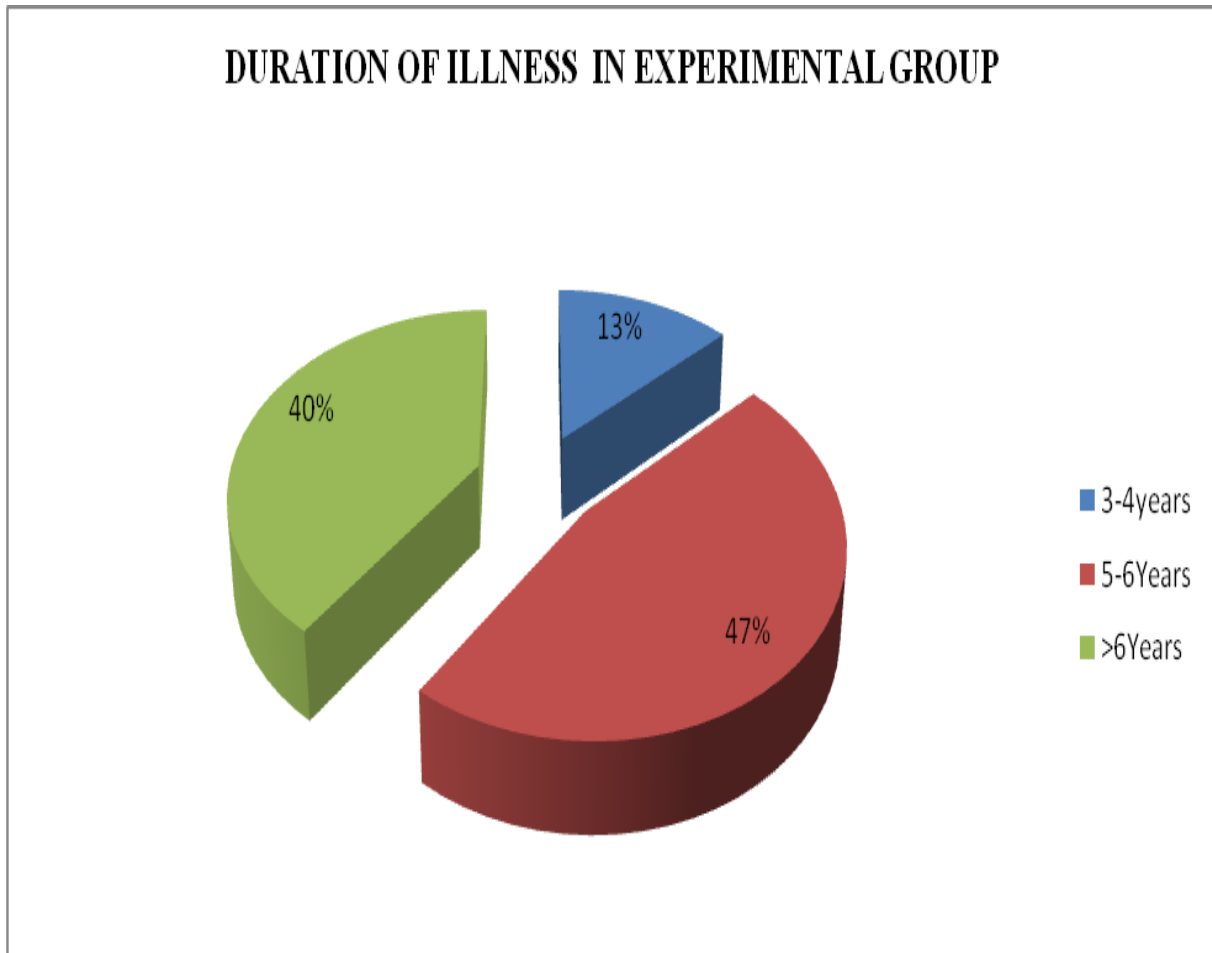
Fig.8 Percentage distribution of duration of illness of the samples in experimental group
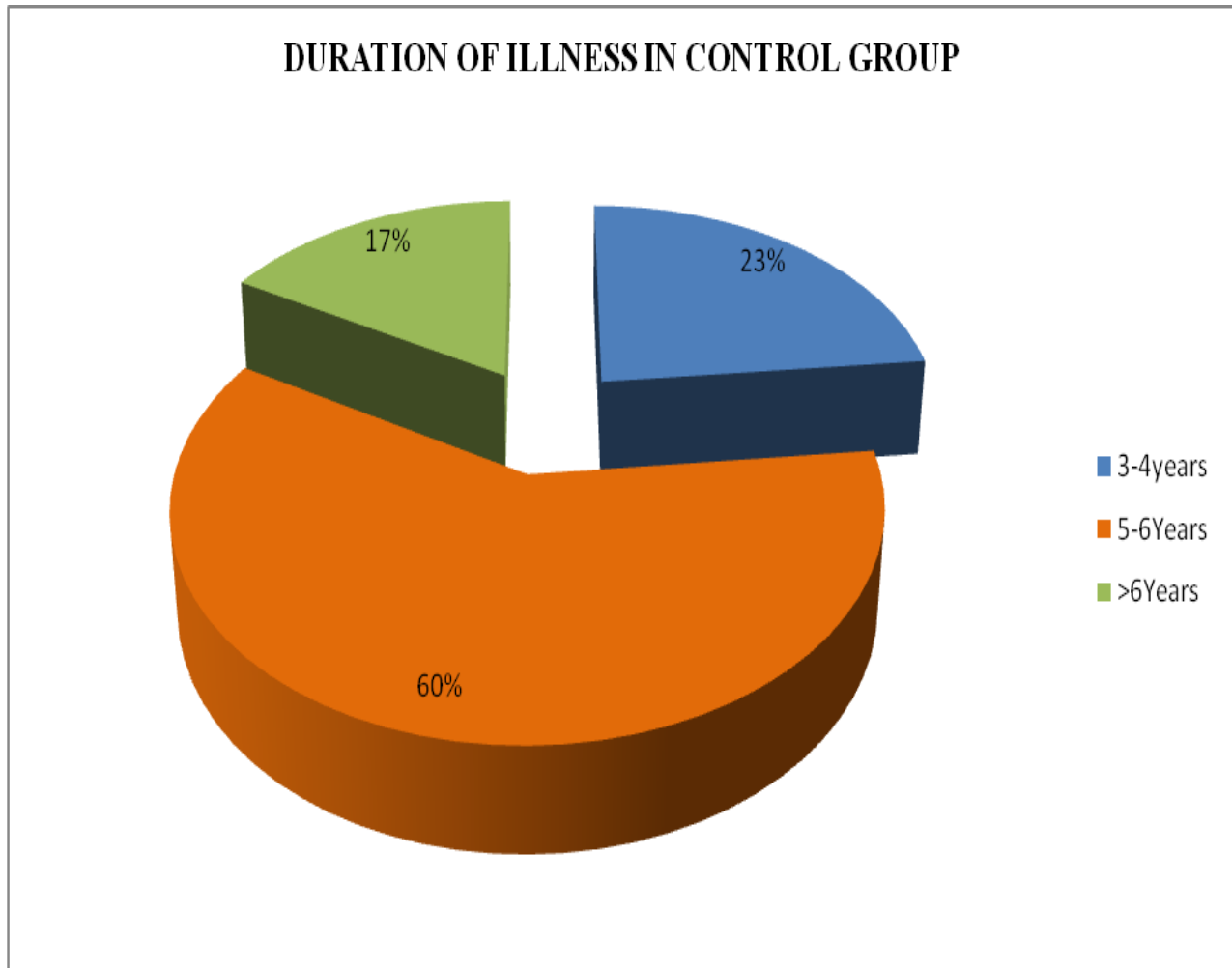
Fig.9 Percentage distribution of duration of illness of the samples in control group
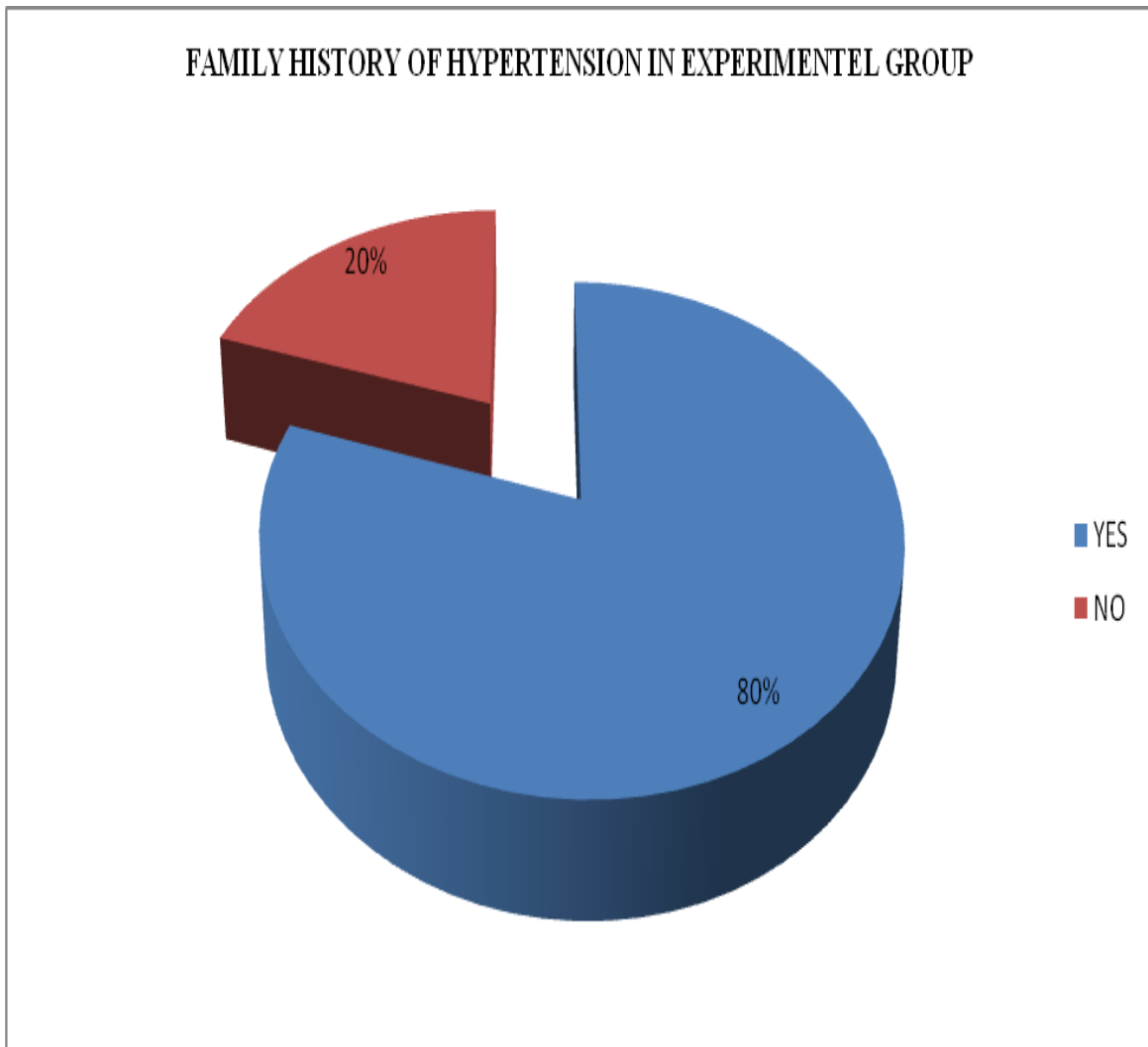
Fig.10 Percentage distribution of family history of hypertension in experimental group
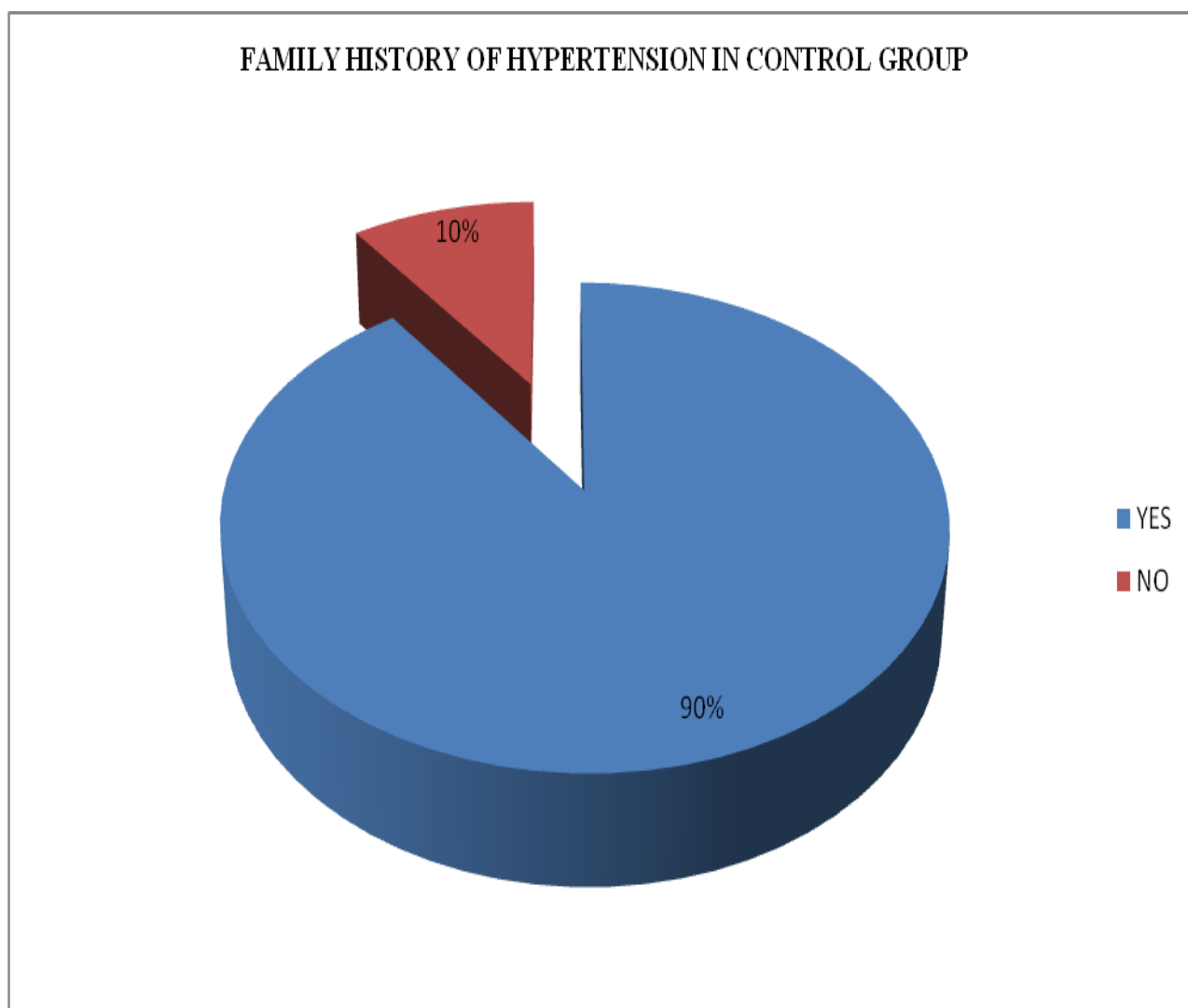
Fig.11 Percentage distribution of family history of hypertension in control group

SECTION B

Table II

Frequency and percentage distribution of pretest and post test levels of blood pressure in the experimental group.

n = 30

Blood Pressure	Mild				Moderate				Severe			
	systolic		Diastolic		systolic		diastolic		systolic		diastolic	
	No.	%	No	%	no	%	No.	%	no	%	no	%
Pretest	10	33.33	13	43.33	20	66.66	16	53.37	0	0	1	3.33
Post Test	29	96.67	24	80.0	1	3.33	6	20.0	0	0	0	0

Table II shows the pre and post test level of blood pressure among hypertensive clients in the experimental group.

The table further reveals that in the pre test 10(33.33%) had mild systolic blood pressure, 20(66.66%) had moderate systolic blood pressure and none of them had severe systolic pressure. considering the diastolic blood pressure 13(43.33%) had mild diastolic blood pressure, 16 (53.34%) had moderate diastolic blood pressure and 1(3.33%) had severe diastolic blood pressure. In the post test, majority 29(96.67%) had mild systolic blood pressure and only 1(3.33%) had moderate level of systolic blood pressure. Whereas 24 (80%) had mild diastolic blood pressure, 6(20%) had moderate diastolic blood pressure and none of them had severe diastolic blood pressure in the experimental group.

Fig.12 Frequency and percentage distribution of pretest and post test levels of blood pressure in the experimental group

Table III

Frequency and percentage distribution of pretest and post test level of blood pressure in the control group.

n=30

Blood Pressure	Mild				Moderate				Severe			
	systolic		Diastolic		systolic		diastolic		systolic		diastolic	
	No.	%	No	%	no	%	No.	%	no	%	no	%
Pretest	19	63.33	13	53.37	11	33.33	15	50.0	0	0	2	6.67
Post Test	19	63.33	15	50.0	11	33.33	14	46.67	0	0	1	3.33

Table III shows the pre and post test level of blood pressure among hypertensive clients in the control group.

The table further reveals that in the pre test 19(63.33%) had mild systolic blood pressure, 11(33.33%) had moderate systolic blood pressure and none of them had severe systolic pressure. considering the diastolic blood pressure 13(53.37%) had mild diastolic blood pressure, 15(50%) had moderate diastolic blood pressure and 2(6.67%) had severe diastolic blood pressure. In the post test, majority 19(63.33%) had mild systolic blood pressure and 11(33.33%) had moderate level of systolic blood pressure and none of them had severe systolic pressure. Whereas 15(50%) had mild diastolic blood pressure, 14(46.67%) had moderate diastolic blood pressure and 1(3.33%) had severe diastolic blood pressure in the control group.
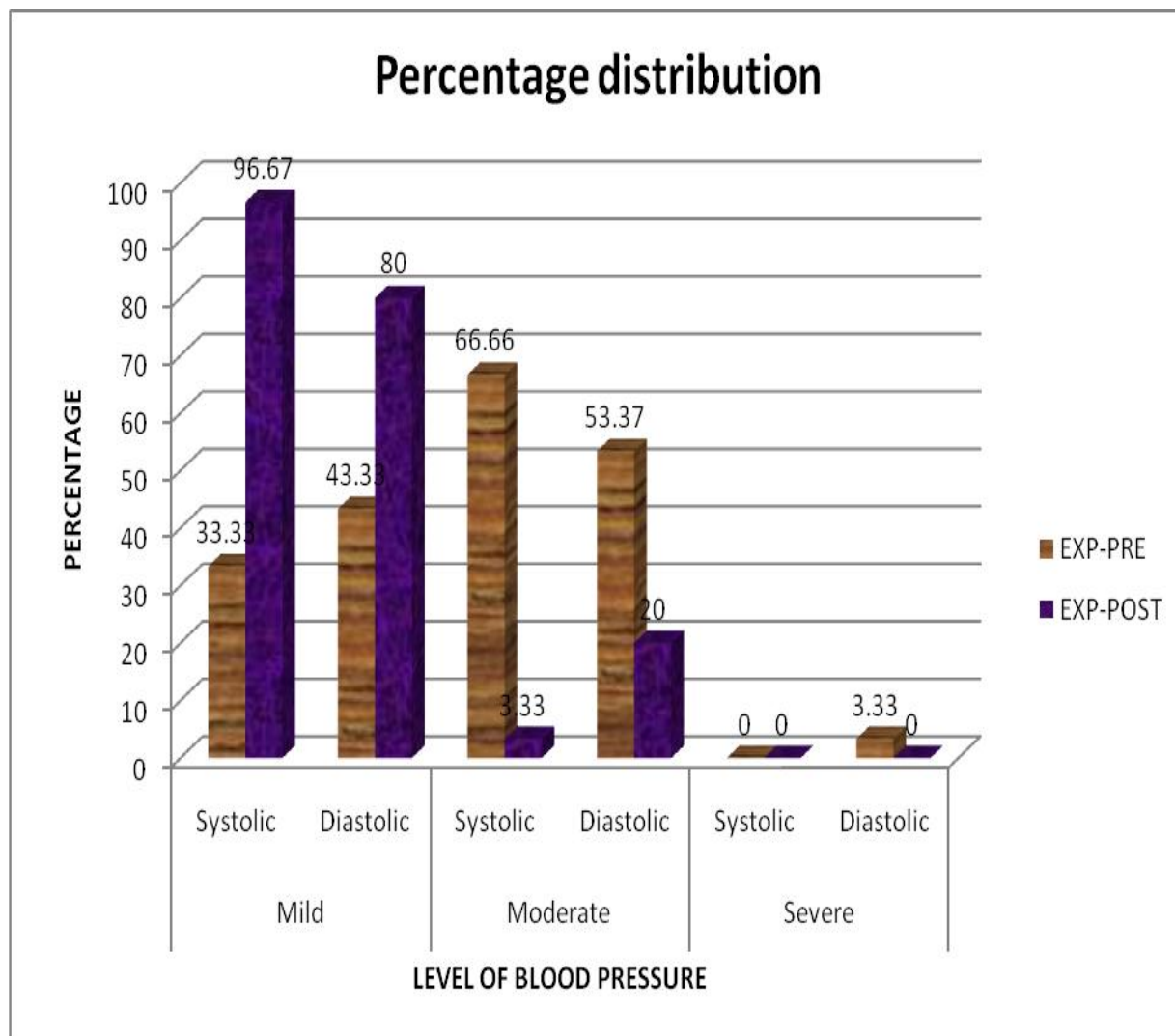
Fig.13 Frequency and percentage distribution of pretest and post test level of blood pressure in the control group.

SECTION C

Table IV

Comparison of pre test and post test level of blood pressure in the experimental group.

n = 30

Blood pressure	Systolic		diastolic		
	mean	**S.D**	**mean**	**S.D**	**'t' Value**
Pretest	152.0	6.64	95.17	5.65	t = 6.021***
Post Test	142.0	7.14	91.33	5.07	p = 0.000, (S)

***p<0.001, S - Significant

Table IV shows the comparison of pre and post test level of blood pressure in the experimental group.

The table further reveals that in the experimental group the pretest mean score was 152.0 with S.D 6.64 and the post test mean was 142.0 with S.D 7.14. The calculated 't' value of 6.021was statistically highly significant at p<0.001 level which clearly indicates that there is significant difference between the pretest and post level of blood pressure in the experimental group.
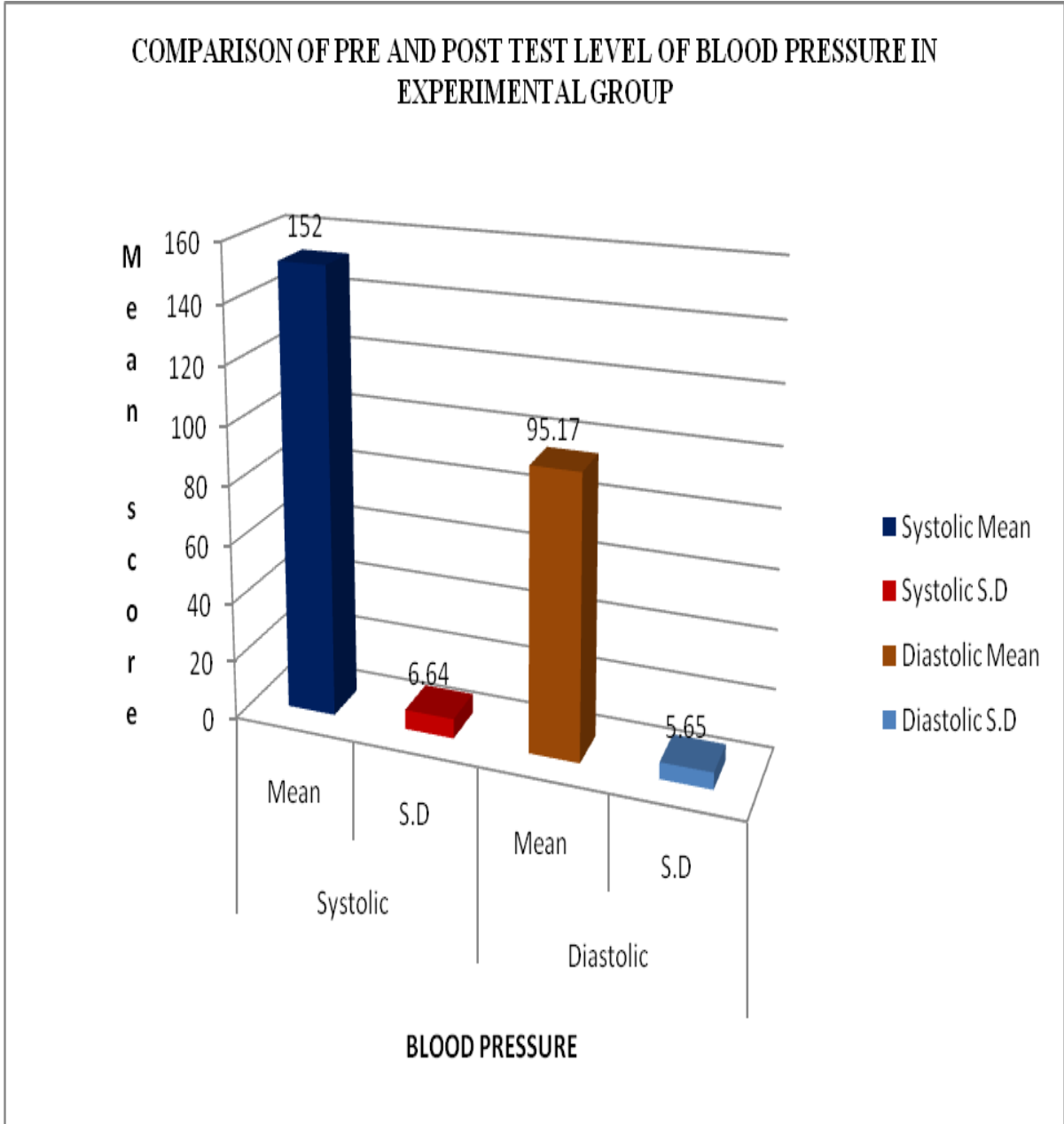
Fig.14 Comparison of pre test and post test level of blood pressure in the experimental group

Table V

Comparison of pre test and post test level of blood pressure in the control group.

n = 30

Blood pressure	Systolic		diastolic		
	mean	S.D	mean	S.D	't' Value
Pretest	150.67	8.28	96.33	6.15	t = 1.795
Post Test	150.67	8.28	95.33	5.71	p = 0.083, (N.S)

N.S - Not Significant

Table V shows the comparison of pre and post test level of blood pressure in the control group.

The table further reveals that in the control group the pretest mean score was 150.67 with S.D 8.28 and the post test mean was 150.67 with S.D 8.28. The calculated 't' value of 0.000 was not statistically significant which clearly indicates that there is no significant difference between the pretest and post level of blood pressure in the control group
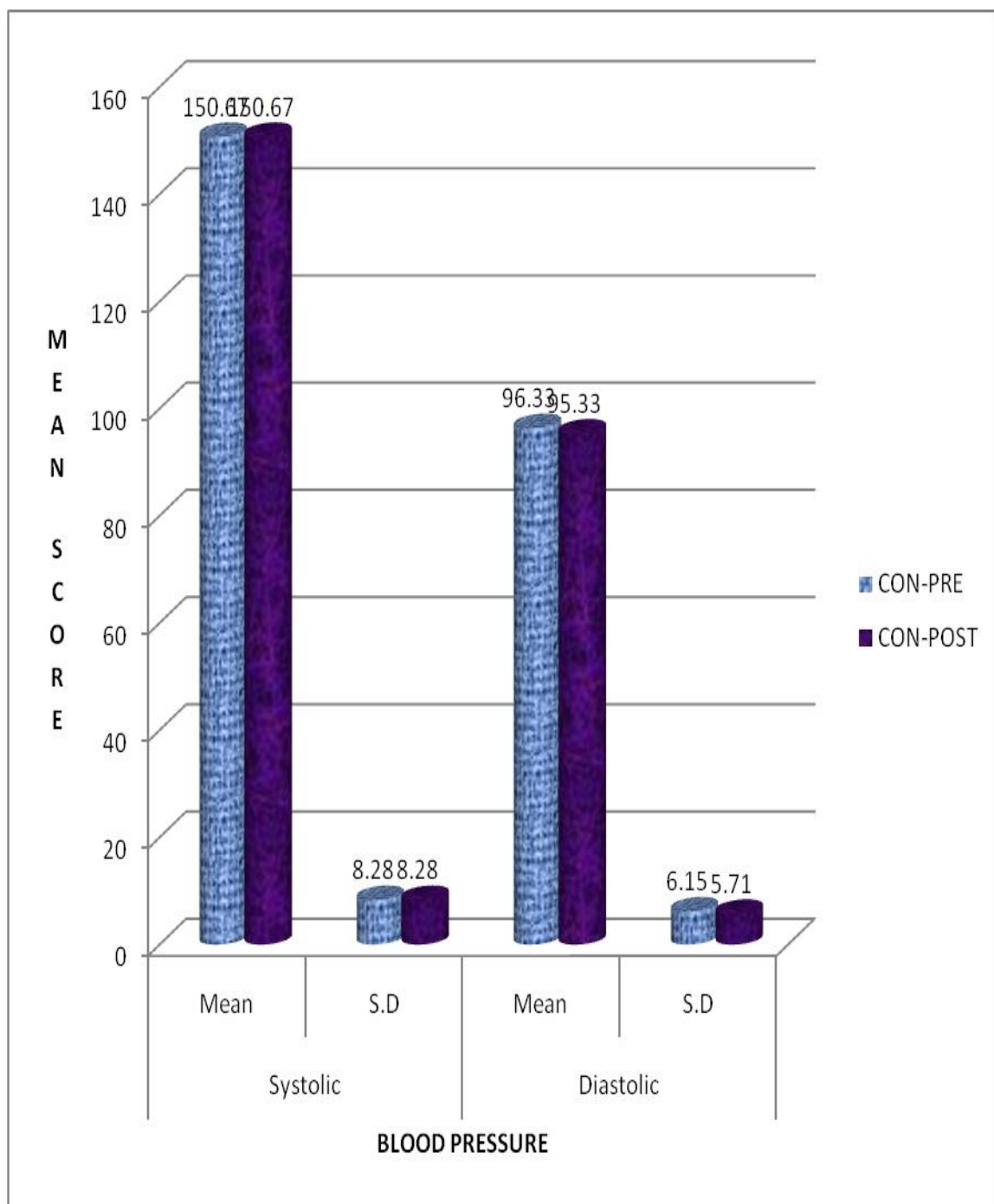
Fig.15 Comparison of pre test and post test level of blood pressure in the control group.

SECTION D

Table VI

Association of post test level of blood pressure with demographic variables in the experimental group.

n = 30

Demographic Variables	systolic				Diastolic				Chi-Square Value
	Mild		Moderate		Mild		Moderate		
	No	%	No	%	No	%	No	%	
Age (in years)									$\chi^2 = 1.848$
45 – 51	5	16.7	0	0	3	10.0	2	6.7	d.f = 2
52 - 58	22	73.3	1	3.33	19	63.3	4	13.3	p = 0.397
59-65	2	6.7	0	0	2	6.7	0	0	N.S
Gender									$\chi^2 = 0.186$
Male	22	73.3	1	3.33	18	60.0	5	16.7	d.f = 1
Female	7	23.3	0	0	6	20.0	1	3.33	p = 0.666 N.S
Educational Status									$\chi^2 = 3.452$
Non-literate	2	6.7	0	0	1	3.33	1	3.33	d.f = 4
Primary education	5	16.7	0	0	3	10.0	2	6.7	p = 0.485
Secondary education	13	43.3	1	3.33	12	40.0	2	6.7	

Demographic Variables	systolic				Diastolic				Chi-Square Value
	Mild		Moderate		Mild		Moderate		
	No	%	No	%	No	%	No	%	
Graduate level	6	20.0	0	0	5	16.7	1	3.3	N.S
Post graduate level	3	10.0	0	0	3	10.0	0	0	
Occupation									
Service workers, shop and market sales workers	-	-	-	-	-	-	-	-	$\chi^2 = 2.024$ d.f = 2 p = 0.364 N.S
Skilled agricultural and fishery workers	20	66.7	1	3.33	16	53.3	5	16.7	
Elementary occupations and clerks	3	10.0	0	0	2	6.7	1	3.33	
Technicians & associate professionals	-	-	-	-	-	-	-	-	
Legislators, senior officials, managers, professionals	6	20.0	-	-	6	20.0	0	0	
Individual income (per month)									$\chi^2 = 2.283$ d.f = 1 p = 0.131 N.S
Below Rs.4000	-	-	-	-	-	-	-	-	
Rs.4001 - Rs.6000	-	-	-	-	-	-	-	-	
Rs.6001 - Rs.8000	-	-	-	-	-	-	-	-	
Rs.8001 - Rs.10000	22	73.3	1	3.33	17	56.7	6	20.0	
Rs.10001 and above	7	23.3	0	0	7	23.3	0	0	
Marital Status									$\chi^2 = 0.536$

Demographic Variables	systolic				Diastolic				Chi-Square Value
	Mild		Moderate		Mild		Moderate		
	No	%	No	%	No	%	No	%	
Single	-	-	-	-	-	-	-	-	d.f = 1
Married	27	90.0	1	3.33	22	73.3	6	20.0	
Divorce	-	-	-	-	-	-	-	-	p = 0.464
Widow/Widower	2	6.7	0	0	2	6.7	0	0	N.S
Type of food									$\chi^2 = 0.536$
Vegetarian	-	-	-	-	-	-	-	-	d.f = 1
Non-vegetarian	29	96.7	1	3.33	24	80.0	6	20.0	p = 0.001 S*
Duration of illness									$\chi^2 = 3.289$
3 - 4 years	4	13.3	0	0	2	6.7	2	6.7	d.f = 2
5 - 6 years	13	43.3	1	3.33	11	36.7	3	10.0	p = 0.193
>6 years	12	40.0	0	0	11	36.7	1	3.3	N.S
Are you taking antihypertensive drugs regularly?									$\chi^2 = 0.370$ d.f = 1
Yes	26	86.7	1	3.33	22	73.3	5	16.7	p = 0.543
No	3	10.0	0	0	2	6.7	1	3.3	N.S
Family history of									$\chi^2 = 0.533$

Demographic Variables	systolic				Diastolic				Chi-Square Value
	Mild		Moderate		Mild		Moderate		
	No	%	No	%	No	%	No	%	
hypertension									
Yes	23	76.7	1	3.33	20	66.7	4	13.3	d.f = 1
No	6	20.0	0	0	4	13.3	2	6.7	p = 0.001 S*
State the average hours of sleeping per day									$\chi^2 = 0.543$ d.f = 2
<8 hours	22	73.3	1	3.33	18	60.0	5	16.7	
8 hours	2	6.7	0	0	2	6.7	0	0	p = 0.762
>8 hours	5	16.7	0	0	4	13.3	1	3.3	N.S
Do you take rest in the afternoon?									$\chi^2 = 0.536$ d.f = 1
Yes	2	6.7	0	0	2	6.7	0	0	p = 0.464
No	27	90.0	1	3.33	22	73.3	6	20.0	N.S
Are you practicing simple exercise for hypertension regularly?									$\chi^2 = 0.313$ d.f = 1
Yes	12	40.0	0	0	9	30.0	3	10.0	p = 0.576
No	17	56.7	1	3.33	15	50.0	3	10.0	N.S

N.S – Not Significant S- Significant

Table VI shows the association of mean difference of the blood pressure among hypertensive clients with the demographic variables in the experimental group.

The analysis reveals that the demographic variables such as the type of food and the family history of hypertension had shown significant association with the post test level of blood pressure in the experimental group. And the demographic variables age, gender, education, occupation, income, marital status, nature of physical activities, chronicity, exercise, drugs, and sleep were not associated with the mean difference of the blood pressure among hypertensive clients.

CHAPTER – V

DISCUSSION

This chapter deals with the discussion of the results of the data analysis based on the objectives of the study and hypothesis.

The statement of the problem was, "A Quasi-experimental study to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected village, Kollencode 2011-2012".

The Objectives were

1. To assess the pre test level of blood pressure among hypertensive clients in the experimental and control group

2. To assess the post test level of blood pressure among hypertensive clients in the experimental and control group

3. To compare the post test level of blood pressure among hypertensive clients in the experimental and control group

4. To determine the outcome of garlic mixture on blood pressure among hypertensive clients in the experimental group

5. To associate the mean difference of blood pressure among hypertensive clients with their demographic variables in the experimental group.

The demographic variables selected in the study was age, gender, education, occupation, income, marital status, type of food, nature of physical activities, chronicity, family history, exercise, drugs, and sleep. The study findings conclude the following. The study findings conclude the following.

With regard to the age in the experimental group, majority 23 (76.67%) hypertensive clients were in the age group of 52 – 58 years, 5 (16.67%) were in the age group of 45 – 51 years and 2 (6.67%) were in the age group of 59-65 years. where as in control group majority 23 (76.67%) hypertensive clients were in the age group of 52 – 58 years, 4 (13.33%) were in the age group of 45 – 51 years and 3 (10%) were in the age group of 59-65 years

Considering the gender in the experimental group majority 23 (76.67%) of them were male, 7(23.33%) were female, in control group majority 20 (66.67%) were male and 10(33.33%) were female.

Regarding education status in the experimental group, majority 14(46.67%) had secondary education, 6(20%) had graduate level education, 5(16.67%) had primary education and 3 (10%) had post graduate level education and 2 (6.66%) were non-literate. In control group majority 13(43.33%) had secondary education, 8(26.67%) had graduate level education, 7(23.33%) had primary education, 2 (6.67%) were non-literate, and none of them had post graduate level education.

Regarding occupation in the experimental group, majority 21(70%) were skilled agricultural and fishery workers, 6 (20%) were legislators, senior officials, managers, and professionals, and 3(10%) were elementary occupations and clerks. In control group majority 13(43.33%) were skilled agricultural and fishery workers, 6(20%) were elementary occupations and clerks, 5 (16.67%) were legislators, senior officials, managers, and professionals, 3(10%) of them were service workers shop and market sales workers, and 3(10%) were elementary occupations and clerks

Regarding the individual income in the experimental group, (per month) majority 23(76.67%) were with the income of Rs.8001-Rs.10000 and 7(23.33%) were with the income of Rs.10001 and above. In control group majority 17(46.67%) were with the income of Rs.8001-Rs.10000, 11(36.67%) were with the income of Rs.10001 and above, and 1(3.33%) with the income of Rs.4001-Rs.6000 and 1(3.33%) with the income of below Rs.4000.

Considering to the marital status in the experimental group, majority 28(93.33%) were married and 2 (6.66%) was widow. In control group majority 27(90%) were married and 3 (10 %) were widow.

Regarding type of foods all 30 (100%) were non-vegetarian. In control group all 30(100%) were non-vegetarian.

Regarding the duration of illness in the experimental group, majority 14 (46.67%) were with the duration of 5-6 years, 12(40%) were with the duration of above 6 years, and 4 (13.33%) were with the duration of 3-4years. Where as in control group majority 18 (60%) of them were with the duration of 5-6 years, 7 (23.33%) were with the duration of 3-4years,and 2(6.66%) were with the duration of above 6 years.

Regarding the regularity of medications in the experimental group, majority 27(90%) were on regular medications and 3(10%) were on irregular medications. Where as in control group majority 27(90%) were on regular medications and 3(10%) were on irregular medications.

With regard to the family history in the experimental group, majority 24 (80%) of them were with the history of hereditary illness and 6(20%) of them were not having the history of hereditary illness. Where as in control group 27 (90%) of them were with the history of hereditary illness and 3(10%) of them were not having the history of hereditary illness

Considering the average hours of sleep in the experimental group, majority 23 (76.67%) sleeps for below 8hours, and5 (16.67%) sleeps for above 8 hours and 2(6.67%) sleeps for 8 hours. Where as in control group majority 22 (73.33%) sleeps for below 8hours, 5(16.67%) sleeps for 8 hours and3 (10%) sleeps for above 8 hours.

Among 30 samples in the experimental group majority 28 (93.33%) will not take rest in the afternoon and 2(6.66%) take rest in the afternoon. Where as in control group majority 28 (93.33%) will not take rest in the afternoon and 2(6.66%) take rest in the afternoon.

Considering the regular practicing of simple exercises for hypertension in the experimental group, majority18 (60%) were not practicing sample exercises for hypertension and 12(60%) were practicing sample exercises for hypertension. Where as in control group majority

23(76.67%) were not practicing sample exercises for hypertension and 25(83.33%) were practicing sample exercises for hypertension.

The first objective was to assess the pretest level of blood pressure among clients with hypertension in the experimental and control group.

Considering the experimental group, in the pretest 10(33.33%) had mild level of systolic blood pressure and 20(66.67%) had moderate level of systolic blood pressure.

Regarding the diastolic blood pressure in the pretest, 14(43.33%) had mild level of diastolic blood pressure, 16(53.37%) had moderate and only 1(3.33%) had severe level of diastolic blood pressure.

Whereas in the control group, in the pretest 19(63.33%) had mild level of systolic blood pressure and 11(36.67%) had moderate level of systolic blood pressure Regarding the diastolic blood pressure in the pretest, 15(50%) had moderate level of diastolic blood pressure, 13(43.33%) had mild and only 2(6.67%) had severe level of diastolic blood pressure.

The second objective was to assess the post test level of blood pressure among clients with hypertension in the experimental and control group

Considering the experimental group, in the post test, majority 29(96.67%) had mild and only 1(3.33%) had moderate level of systolic blood pressure. Regarding the diastolic blood pressure in the post test, majority 24(80%) had mild and only 6(20%) had moderate level of diastolic blood pressure.

Whereas in the control group, in the post test majority 19(63.33%) had mild and only 11(36.67%) had moderate level of systolic blood pressure. Regarding the diastolic blood pressure, majority 15(50%) had mild, 14(46.67%) had moderate and only 1(3.33%) had severe level of diastolic blood pressure.

The third objective was to compare the post test level of blood pressure among experimental and control group.

In the experimental group the pretest mean score was 152.0 with S.D 6.64 and the post test mean was 142.0 with S.D 7.14. The calculated't' value of 6.021was statistically highly

significant at p<0.001 level which clearly indicates that there is a significant difference in the post level of systolic blood pressure in the experimental group. Considering the diastolic blood pressure in the experimental group, the pretest mean score was 95.17 with S.D 5.65 and the post test mean was 91.33 with S.D 5.07. The calculated 't' value of 2.755 was statistically significant at p<0.01 level which clearly indicates that there is significant difference in the post level of diastolic blood pressure in the experimental group.

In the control group the pretest mean score was 150.67 with S.D 8.28 and the post test mean score was 149.67 with S.D 8.18. The calculated 't' value of 0.10 was not statistically significant which clearly indicates that there is no significant difference between the pretest and post level of systolic blood pressure in the control group. Considering the diastolic blood pressure in the control group the pretest mean score was 96.33 with S.D 6.15 and the post test mean was 95.33 with S.D 5.71. The calculated 't' value of 1.795 was not statistically significant which clearly indicates that there is no significant difference between the pretest and post level of diastolic blood pressure in the control group.

The study findings were found to be consistent with the study conducted by McMahon FG, Vargas R (2009) to study the effect of garlic-lowers the blood pressure. A popular garlic preparation containing 1.3% allicin at a large dose (2400 mg) was evaluated in this open-label study in nine patients with rather severe hypertension (diastolic blood pressure > or = 115 mm Hg). Sitting blood pressure fell 7/16 (+/- 3/2 SD) mm Hg at peak effect approximately 5 hours after the dose, with a significant decrease in diastolic blood pressure (p < 0.05) from 5-14 hours after the dose. No significant side effects were reported. And results indicated that this garlic preparation can reduce blood pressure. Thus, it proves garlic mixture is effective in decreasing the blood pressure.

Since there is a significant difference between the pre test and post test level of blood pressure among hypertensive clients. Thus the research hypothesis H_1 stated that "there is a significant difference between pre and post test level of blood pressure among clients with hypertension in the experimental group" was accepted by the researcher.

The fourth objective was to determine the outcome of garlic on blood pressure among hypertensive clients in experimental group

In the experimental group the pretest mean score was 152.0 with S.D 6.64 and the post test mean was 142.0 with S.D 7.14. The calculated 't' value of 6.021was statistically highly significant at p<0.001 level which clearly indicates that there is significant difference between the pretest and post level of systolic blood pressure in the experimental group.

In the experimental group the pretest mean score was 95.17 with S.D 5.65 and the post test mean was 91.33 with S.D 5.07. The calculated 't' value of 2.755was statistically significant at p<0.01 level which clearly indicates that there is significant difference between the pretest and post level of diastolic blood pressure in the experimental group. Thus, it proves garlic mixture is effective in decreasing the blood pressure.

The study findings was found to be consistent with the study conducted by Sobenin A., (2009) to study the effect of garlic-powder lower systolic and diastolic blood pressure in men with mild and moderate arterial hypertension. In this trial with an active control arm, the hypotensive action of time - released garlic powder tablets was compared with that of regular garlic pills in 84 men with mild or moderate at arterial hypertension. And found a reduction of both systolic and diastolic pressure by 7.0mm Hg and 3.8 mm Hg respectively. The results of this study shows that garlic tablets are more effective for the treatment of mild and moderate hypertension than are regular garlic supplements.

The fifth objective was to associate the mean difference of blood pressure among hypertensive clients with their demographic variables in the experimental group.

The association table reveals that the demographic variables age, gender, education, occupation, income, marital status, nature of physical activities, chronicity, exercise, drugs, and sleep were not associated with the mean difference of the blood pressure among hypertensive clients. The demographic variables type of food and the family history of hypertension had statistically significant association with the mean difference of the blood pressure. Since there is a significant association in the pre test and post test level of blood pressure among hypertensive clients the research hypothesis H_2 stated that "there is a significant association of mean

differenced on blood pressure with the selected demographic variables in the experimental group" was accepted by the researcher.

The conceptual framework of this study was based on review of literature collected from various books, research studies, journals and other unpublished thesis. Helping Art of Clinical nursing theory by Errestin Wiedenbach's (1964) was modified according to the identification of need for help, ministering the needed help and validating the help among hypertensive clients. The investigator founded that this was suitable framework, which was helpful throughout the study.

In the present study, which assess the outcome of garlic mixture on the blood pressure among hypertensive clients; the investigator having analyzed the data and has come to the conclusion that garlic mixture has an effect on the level of blood pressure.

CHAPTER – VI

SUMMARY, NURSING IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

This chapter represents the summary, implications, recommendations and limitations based on the objectives of the study.

SUMMARY

Heart disease and stroke are the principal components of cardiovascular disease, and are the first and third leading causes of death in the United States today. Decreasing morbidity and mortality from these diseases has been a major goal of the medical establishment and governmental health agencies. Only in the last half century the underlying pathologies of these diseases have been defined. Hypertension, smoking, diabetes, obesity, physical inactivity, and atherogenic diets have all been identified as modifiable risk factors for heart disease. Age, male gender, and a family history of premature coronary heart disease (CHD) have been identified as non-modifiable risk factors.

Hypertension affects more than one in five people. Having high blood pressure is at risk for heart disease and stroke, the first and third leading causes of death in the United States. People of all ages and backgrounds can develop high blood pressure, and it's preventable. High Blood Pressure makes the heart work too hard, it can make the walls of arteries harden, and it is a major risk factor for heart disease and stroke. A major part of both preventing and treating hypertension is lifestyle modification. Some guidelines are adopting a healthy lifestyle, following a healthy eating patter, maintaining a healthy weight, being physically active, limiting alcohol, and quitting smoking.

Garlic's amazing abilities to curb many health ailments and lower blood pressure naturally, have been documented for over 5,000 years; thus making it one of the most effective herbs to lower blood pressure and increase your overall heart health. Allicin is the primary biological compound found in garlic and is widely accepted as the principle substance

responsible for garlic's ability to lower high blood pressure and curb subsequent cardiovascular problems. Increased consumption of garlic is associated with lower incidence of hypertension in population. Based on current information, garlic preparations are considered for recommendation as adjuncts in the treatment of hypertensive patients.

The statement of the problem was, "A Quasi-experimental study to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected village, Kollencode 2011-2012".

The Objectives were

1. To assess the pre test level of blood pressure among hypertensive clients in the experimental and control group

2. To assess the post test level of blood pressure among hypertensive clients in the experimental and control group

3. To compare the post test level of blood pressure among hypertensive clients in the experimental and control group

4. To determine the outcome of garlic mixture on blood pressure among hypertensive clients in the experimental group

5. To associate the mean difference of blood pressure among hypertensive clients with their demographic variables in the experimental group

The research hypothesis formulated was

H1: There is a significant difference between pre and post test level of blood pressure among hypertensive clients in the experimental and control group

H2: There is a significant association of mean differenced on blood pressure with the selected demographic variables in the experimental group

Review of literature was collected from various sources like nursing journals, complementary alternative medicine library, unpublished thesis, med line database and pubmed.

A literature review is a summary of gathered sources, which provides a basis for the investigator to continue her study.

The conceptual framework of this study was based on Wiedenbach's Helping Art of Clinical Nursing Theory and it was modified by the investigator according to identification of need for help, ministering the need and validating the help among the hypertensives with high blood pressure. This modified framework helped the investigator throughout the study.

The study was conducted in Kollencode village. A Quasi experimental design was adapted to assess the outcome of garlic mixture on blood pressure among hypertensive clients.

Non probability purposive sampling technique was used to select research subjects. The investigator selected 60 hypertensive clients who fulfilled inclusive criteria were selected and assigned to the 30 experimental and 30 control groups. Pre-test level of blood pressure was taken for both experimental and control group in lying down position in the right hand. The researcher provided the garlic mixture to the experimental group for 30 days. Garlic mixture is given to the hypertensive clients every day in the morning before breakfast for 30 days and advised to follow their regular antihypertensive drugs also.The control group were given only antihypertensive drugs. Post test level of blood pressure was measured finally. The tool also consisted of demographic variables.

Analysis revealed the following

With regard to the age in the experimental group, majority 23 (76.67%) hypertensive clients were in the age group of 52 – 58 years, 5 (16.67%) were in the age group of 45 – 51 years and 2 (6.67%) were in the age group of 59-65 years. where as in control group majority 23 (76.67%) hypertensive clients were in the age group of 52 – 58 years, 4 (13.33%) were in the age group of 45 – 51 years and 3 (10%) were in the age group of 59-65 years

Considering the gender in the experimental group majority 23 (76.67%) of them were male, 7(23.33%) were female, in control group majority 20 (66.67%) were male and 10(33.33%) were female.

Regarding education status in the experimental group, majority 14(46.67%) had secondary education, 6(20%) had graduate level education, 5(16.67%) had primary education and 3 (10%) had post graduate level education and 2 (6.66%) were non-literate. In control group majority 13(43.33%) had secondary education, 8(26.67%) had graduate level education, 7(23.33%) had primary education, 2 (6.67%) were non-literate, and none of them had post graduate level education.

Regarding occupation in the experimental group, majority 21(70%) were skilled agricultural and fishery workers, 6 (20%) were legislators, senior officials, managers, and professionals, and 3(10%) were elementary occupations and clerks. In control group majority 13(43.33%) were skilled agricultural and fishery workers, 6(20%) were elementary occupations and clerks, 5 (16.67%) were legislators, senior officials, managers, and professionals, 3(10%) of them were service workers shop and market sales workers, and 3(10%) were elementary occupations and clerks

Regarding the individual income in the experimental group, (per month) majority 23(76.67%) were with the income of Rs.8001-Rs.10000 and 7(23.33%) were with the income of Rs.10001 and above. In control group majority 17(46.67%) were with the income of Rs.8001-Rs.10000, 11(36.67%) were with the income of Rs.10001 and above, and 1(3.33%) with the income of Rs.4001-Rs.6000 and 1(3.33%) with the income of below Rs.4000.

Considering to the marital status in the experimental group, majority 28(93.33%) were married and 2 (6.66%) was widow. In control group majority 27(90%) were married and 3 (10 %) were widow.

Regarding type of foods all 30 (100%) were non-vegetarian. In control group all 30(100%) were non-vegetarian.

Regarding the duration of illness in the experimental group, majority 14 (46.67%) were with the duration of 5-6 years, 12(40%) were with the duration of above 6 years, and 4 (13.33%) were with the duration of 3-4years. Where as in control group majority 18 (60%) of them were with the duration of 5-6 years, 7 (23.33%) were with the duration of 3-4years,and 2(6.66%) were with the duration of above 6 years.

Regarding the regularity of medications in the experimental group, majority 27(90%) were on regular medications and 3(10%) were on irregular medications. Where as in control group majority 27(90%) were on regular medications and 3(10%) were on irregular medications.

With regard to the family history in the experimental group, majority 24 (80%) of them were with the history of hereditary illness and 6(20%) of them were not having the history of hereditary illness. Where as in control group 27 (90%) of them were with the history of hereditary illness and 3(10%) of them were not having the history of hereditary illness

Considering the average hours of sleep in the experimental group, majority 23 (76.67%) sleeps for below 8hours, and5 (16.67%) sleeps for above 8 hours and 2(6.67%) sleeps for 8 hours. Where as in control group majority 22 (73.33%) sleeps for below 8hours, 5(16.67%) sleeps for 8 hours and3 (10%) sleeps for above 8 hours.

Among 30 samples in the experimental group majority 28 (93.33%) will not take rest in the afternoon and 2(6.66%) take rest in the afternoon. Where as in control group majority 28 (93.33%) will not take rest in the afternoon and 2(6.66%) take rest in the afternoon.

Considering the regular practicing of simple exercises for hypertension in the experimental group, majority18 (60%) were not practicing sample exercises for hypertension and 12(60%) were practicing sample exercises for hypertension. Where as in control group majority 23(76.67%) were not practicing sample exercises for hypertension and 25(83.33%) were practicing sample exercises for hypertension.

Frequency and percentage distribution of pre and post test level of blood pressure among hypertensive clients in the experimental group reveals that in the pre test 10(33.33%) had mild systolic blood pressure, 20(66.66%) had moderate systolic blood pressure and none of them had severe systolic pressure. considering the diastolic blood pressure 13(43.33%) had mild diastolic blood pressure, 16 (53.34%) had moderate diastolic blood pressure and 1(3.33%) had severe diastolic blood pressure. In the post test, majority 29(96.67%) had mild systolic blood pressure and only 1(3.33%) had moderate level of systolic blood pressure. Whereas 24 (80%) had mild diastolic blood pressure, 6(20%) had moderate diastolic blood pressure and none of them had severe diastolic blood pressure.

control group reveals that in the pre test 19(63.33%) had mild systolic blood pressure, 11(33.33%) had moderate systolic blood pressure and none of them had severe systolic pressure. considering the diastolic blood pressure 13(53.37%) had mild diastolic blood pressure, 15(50%) had moderate diastolic blood pressure and 2(6.67%) had severe diastolic blood pressure. In the post test, majority 19(63.33%) had mild systolic blood pressure and 11(33.33%) had moderate level of systolic blood pressure and none of them had severe systolic pressure. Whereas 15 (50%) had mild diastolic blood pressure, 14(46.67%) had moderate diastolic blood pressure and 1(3.33%) had severe diastolic blood pressure.

Comparison of pre and post test level of blood pressure in the experimental group reveals that in the pretest mean score was 152.0 with S.D 6.64 and the post test mean was 142.0 with S.D 7.14. The calculated 't' value of 6.021was statistically highly significant at p<0.001 level which clearly indicates that there is significant difference between the pretest and post level of blood pressure in the experimental group. In the control group the pretest mean score was 150.67 with S.D 8.28 and the post test mean was 150.67 with S.D 8.28. The calculated 't' value of 0.000 was not statistically significant which clearly indicates that there is no significant difference between the pretest and post level of blood pressure in the control group.

The association table reveals that the demographic variables age, gender, education, occupation, income, marital status, nature of physical activities, chronicity, exercise, drugs, and sleep were not associated with the mean difference of the blood pressure among hypertensive clients. The demographic variables type of food and the family history of hypertension had statistically significant association with the mean difference of the blood pressure in the experimental group.

NURSING IMPLICATIONS

The investigator has derived from the study the following implications, which are of vital concern in the field of nursing practice, nursing administration, nursing research and nursing education.

NURSING PRACTICE

The nurses have to health educate in reducing high blood pressure as it increases the risk of heart diseases, as an independent nursing intervention. This can be facilitated by motivating the nurses.

1. The community health nurse should insist and teach the hypertensive clients and significant others about the benefits of including garlic mixture in their diet as it enables them to maintain their blood pressure levels

2. The community health nurse must develop ability to conduct camp on hypertensive client's health.

3. Including garlic mixture in diet helps in reducing the need of increasing the close of drug

4. The community health nurse must be encouraged to distribute IEC material related to health.

NURSING EDUCATION

The community health nurse as an educator should incorporate various system of medicine and include in the revised curriculum of nursing profession. The nurse educator can include dietary management as a means of non-pharmacological therapy. Its effect in health and illness which can be adopted by the students and the nursing personnel too.

1. The student nurses should have greater involvement in the current workshop, seminar and symposium related to dietary management of increased blood pressure, which is being organized by the same, or any other institution.

2. Journals should be made available at nursing schools and colleges related to dietary management of hypertension

3. Provide exposure to various alternative therapies and encourage them to participate, specialize and expand their career.

4. Educators can encourage the nurse to bring out innovative and creative ideas pertaining to effective management for the effective utilization of evidence-based practice on dietary management of high blood pressure.

5. Educators should encourage the nursing students to know about the measures which reduce the blood pressure among hypertensive clients.

NURSING ADMINISTRATION

1. The community health nurse should organize continuing education programs and in-service education programs on dietary management of high blood pressure

2. Community health nurses as administrators consider the cost effectiveness of using available resources in treatment of high blood pressure

3. Arrange for public awareness program regarding the importance of cost effective measure for the treatment of high blood pressure.

4. Provide opportunity for nurses to attend training programs on management of high blood pressure.

NURSING RESEARCH

1. Conducting various experimental researches nurses can develop knowledge and skill in constructing theoretical framework in nursing profession.

2. More researches can be performed in order to establish the benefits of dietary management of high blood pressure

3. The findings should be disseminated through conference, seminars, publication in journals and World Wide Web.

4. As evident from the review of literature, more research needs to be conducted on this discipline.

RECOMMENDATIONS

Nursing research is not an end in itself; it arises from the end to newer researches. The study recommends the following research:

1. The researcher insists the medical officer and the nurses in the health post encourage the hypertensive clients to consume garlic mixture in their daily diet.

2. A descriptive study can be conducted on the impact of high blood pressure and the burden of life of hypertensive clients

3. A comparative study can be done involving the pharmacological and non-pharmacological method of treatment.

4. An experimental study can also be conducted to evaluate the other benefits of garlic.

LIMITATION

Review of literature contains few Indian studies related to garlic mixture on hypertension

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http:// www.Medscape.com.

APPENDIX – A

LIST OF EXPERTS FOR CONTENT VALIDITY

1. **Jalaja.S,**
   M.B.B.S., D.P.H.,
   Medical Officer,
   Kolathur health post,
   Chennai Corporation.

2. **Celina,**
   R.N., R.M., M. Sc (N).,
   Vice Principal,
   Community Health Nursing,
   Omayal Achi College of Nursing,
   Avadi, Chennai-62.

3. **Lakshmi,**
   R.N., R.M., M. Sc (N),
   Principal,
   Chettinad College of Nursing,
   Chennai-103

4. **Manonmani,**
   R.N., R.M., M.Sc(N).,
   Reader,
   Community Health Nursing,
   Omayal Achi College of Nursing,
   Avadi, Chennai-62.

5. **Annie Elizabeth**

    R.N., R.M., M. Sc (N),

    Reader,

    Chettinad College of Nursing,

    Chennai-103

6. **K.Radha Krishnan Nair**

    MA,SMP,ND,RMP,D.V.M.S

    Regd.No:1851/95

    Medical Officer,

    AMRITA SURABHI

    Parambarya,sidha,marma,prakrithi chikilsalayam

    Thookamudupura road

    Kollencode

    K.K.Dist-629160

7. **Revathy,M.Sc.,**

    Dietician,

    Apollo Hospitals,

    Chennai- 6

APPENDIX – B

LETTER SEEKING EXPERT OPINION FOR CONTENT VALIDITY

From,

Mrs.B.Sheeba Basil,
M.Sc (Nursing), II year,
Vel.R.S.Medical College - College of Nursing,
Avadi,
Chennai-62.

To,

Respected Sir/Madam,

SUB: Requisition for expert opinion on suggestion for content validity of the

tool.

I am Mrs.B.Sheeba Basil a student of M .Sc (Nursing) II year at Vel. R.S Medical College - College of Nursing, Avadi,Chennai-62 affiliated to Dr. M.G.R. Medical University, Chennai.

As a partial fulfillment of the requirement in M.Sc .Nursing programme, I have to complete a dissertation. The topic I have selected is "**A Quasi experimental study to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected village"**. Herewith I am sending the developed tool for content validity and for your expert opinion and valuable suggestions.

Thanking you,

Yours sincerely,

Mrs.B.Sheeba Basil

Enclosures:

1. Statement and objectives of the study

2. Blueprint of the tools

3. Content validity certificate.

<u>CERTIFICATE FOR CONTENT VALIDITY</u>

   This is to certify that the tools developed by **Mrs. B. Sheeba Basil**, M.Sc. Nursing, II year student, Vel. R .S. Medical College - College of Nursing, Chennai on the topic '**A Quasi experimental Study to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected village'** is validated by the undersigned and she can proceed with this tool to conduct the main study.

 PLACE: SIGNATURE

DATE:

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Mrs.B.Sheeba Basil**, M.Sc. Nursing, II year student, Vel.R .S. Medical College - College of Nursing, Chennai on the topic '**A Study to assess the effectiveness of garlic on blood pressure among hypertensive clients in selected villages.**' is validated by the undersigned and she can proceed with this tool to conduct the main study.

SIGNATURE
2+|6|''

Place: Kelambakam

Date: 28|6|M

PRINCIPAL
CHETTINAD COLLEGE OF NURSING
PADUR KANCHIPURAM DT.
PINCODE : 603 103

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Mrs.B.Sheeba Basil**, M.Sc. Nursing, II year student, Vel.R .S. Medical College - College of Nursing, Chennai on the topic '**A Study to assess the effectiveness of garlic on blood pressure among hypertensive clients in selected villages.**' is validated by the undersigned and she can proceed with this tool to conduct the main study.

SIGNATURE

(P. ANNIE ELIZABETH)
Reader.

Place: Chennai

Date: 3|6|2011.

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Mrs.B.Sheeba Basil**, M.Sc. Nursing, II year student, Vel.R .S. Medical College - College of Nursing, Chennai on the topic '**A Study to assess the effectiveness of garlic on blood pressure among hypertensive clients in selected villages.**' is validated by the undersigned and she can proceed with this tool to conduct the main study.

K. Manamani
SIGNATURE

Place: Avadi
Date: 8/6/2011

OMAYAL ACHI COLLEGE OF NURSING
King Cross Road,
S. M. Nagar,
CHENNAI-600 062.

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Mrs.B.Sheeba Basil**, M.Sc. Nursing, II year student, Vel.R .S. Medical College - College of Nursing, Chennai on the topic '**A Study to assess the effectiveness of garlic on blood pressure among hypertensive clients in selected villages.**' is validated by the undersigned and she can proceed with this tool to conduct the main study.

SIGNATURE

**MEDICAL OFFICER
KOLATHUR HEALTH POST
CORPORATION OF CHENNAI**

Place: chennai

Date: 7/6/11

APPENDIX – C

INTRODUCTION

Good Morning!

I am a student of Vel R.S.Medical College – College of Nursing, conducting a study on assessment of outcome of garlic mixture on blood pressure among hypertensive clients

I request you to permit me to include you as my study participant for intervention such as garlic mixture in your daily diet. This is known to reduce the level of high blood pressure and is therapeutically safe with no side effects. Further, I request you to kindly extend your co-operation in the smooth completion of the study.

Thanking You.

<u>CONSENT FOR PARTICIPATING IN THE STUDY</u>

I hereby consent to participate in the study titled, "**A Quasi experimental study to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected village, Kollencode**", with clear conscience and free will. I have been clearly explained about the purpose and the benefits of being a study participant. All my doubts have been cleared. I have also been assured of anonymity and freedom to withdraw at any point of the study period.

Thus, I hereby consent to participate in the study.

DEMOGRAPHIC VARIABLES

1. Age (in years)

a) 45-51

b) 52-58

c) 59-65

2. Gender

a) male

b) Female

3. Education status

a) Non-literate

b) Primary Education

c) Secondary Education

d) Graduate level

e) Post graduate level

4. Occupation

a) Service workers, shop and market sales workers

b) Skilled agricultural and fishery workers

c) Elementary occupations and Clerks

d) Technicians & associate professionals

e) Legislators, senior officials, managers, Professionals.

5. Individual Income (per month)

a) Below Rs.4000

b) Rs 4001- Rs 6000

c) Rs 6001- Rs 8000

d) Rs 8001 –Rs 10000

e) Rs 10001 and above

6. Marital status

a) Single

b) Married

c) Divorce

d) widow/widower

7. Type of food

a) vegetarian

b) Non vegetarian

8. Duration of illness

a) 3-4years

b) 5-6years

c) >6years

9. Are you taking antihypertensive drugs regularly?

a) Yes

b) No

10. Family history of hypertension

a) Yes

b) No

11. State the average hours of sleeping per day?

a) <8hours

b) 8hours

c) >8hours

12. Do you take a rest in the afternoon?

a) Yes

b) No

If yes, how many hours-------

13. Are you practicing sample exercises for hypertension regularly?

a) Yes

b) No

If yes, specify the exercise--------

<u>முகவுரை</u>

அனைவருக்கும் வணக்கம்.

என் பெயர் பே.ஷீபாபேசில். நான் வேல் ஆர் எஸ் மருத்துவக்கல்லூரி - செவிலியர் கல்லூரியில் இரண்டாம் ஆண்டு முது நிலை பட்டபடிப்பை பயில்கிறேன். என்னுடைய பட்ட படிப்பில் ஆய்வு மேற்கொள்ள வேண்டியுள்ளதால் "உயர் இரத்த அழுத்த வாடிக்கையாளர்கள் மத்தியில் இரத்த அழுத்தத்தின் மீது பூண்டு கலவையின் விளைவை மதிப்பீடு செய்தல்" பற்றிய ஆய்வினை நடத்த உள்ளேன். எனவே நான் நடத்தவிருக்கும் இந்த ஆய்விற்கு தாங்கள் ஒத்துழைப்பு தருமாறு கேட்டுக் கொள்கிறேன்.

ஆய்விற்கான ஒப்புமை

நான் என்னுடைய மனப்பூர்வமான சம்மதத்துடன் கீழ் கொடுக்கப்பட்டுள்ள ஆய்வில் முழுமையாக பங்கேற்கிறேன். "உயர் இரத்த அழுத்த வாடிக்கையாளர்கள் மத்தியில் இரத்த அழுத்தத்தின் மீது பூண்டு கலவையின் விளைவை மதிப்பீடு செய்தல்" இந்த சோதனை பற்றிய அனைத்து விவரங்களையும் அறிந்ததுடன் எனக்கு தோன்றிய எல்லாவிதமான சந்தேகங்களுக்கும் சரியான விளக்கத்தைப் பெற்றுக் கொண்டு முழு மனதுடன் எந்த வித வற்புறுத்தலுமின்றி இந்த ஆய்விற்கு பங்கேற்பு அளிக்கிறேன். இந்த ஆய்வில் பெறப்படும் என்னுடைய விவரங்கள் அனைத்தும் நம்பகமான முறையில் பாதுகாக்கப்படும் என்றும் எந்த நேரத்திலும் இந்த ஆய்வில் இருந்து விடுபட எனக்கு முழு சுதந்திரம் வழங்கப்பட்டுள்ளது. எனவே இந்த ஆய்விற்கு என்னுடைய முழுமையான சம்மதத்தை தெரிவிக்கிறேன்.

தகவலாளர் விவரம்

1.வயது (ஆண்டுகளில்)

அ) 45-51 வரை

ஆ) 52-58 வரை

இ) 59-65 வரை

2.பாலினம்

அ) ஆண்

ஆ) பெண்.

3. கல்வித் தகுதி

அ) எழுதப் படிக்க தெரியாதவர்

ஆ) ஆரம்பகல்வி பயின்றவர்

இ) இடைநிலைக் கல்வி பயின்றவர்

ஈ) பட்டதாரி நிலைக் கல்வி பயின்றவர்

உ) உயர் பட்டதாரி நிலைக் கல்வி பயின்றவர்

4.தொழில்

அ) சேவை தொழிலாளர்கள், கடை மற்றும் சந்தை விற்பனை தொழிலாளர்கள்

ஆ) திறன் மிக்க விவசாய மற்றும் மீன்பிடித் தொழிலாளர்கள்

இ) அடிப்படை தொழிலாளர் மற்றும் குமாஸ்தாக்கள்

ஈ) தொழில்நுட்ப மற்றும் தொடர்பு தொழில் தொழிலாளர்கள்

உ) சட்டமன்ற உறுப்பினர்கள், மூத்த அதிகாரிகள், மேலாளர்கள், வல்லுநர்.

5.தனிநபர் வருமானம் (மாதத்திற்கு)

அ) ரூ 4000 க்கு கீழ்

ஆ) ரூ 4001 முதல்- ரூ 6000 வரை

இ) ரூ 6001முதல் -- ரூ 8000வரை

ஈ) ரூ 8001முதல் ரூ 10000வரை

உ) ரூ 10001 க்கு மேல்

6.திருமண நிலை

அ) திருமணமாகாதவர்

ஆ) திருமணமானவர்

இ) விவாகரத்து பெற்றவர்

ஈ) விதவை / மனைவியை இழந்தவர்.

7.உணவு வகை

அ) சைவம்

ஆ) அசைவம்

8.நோய் காலம்

அ) 3 முதல் 4 ஆண்டுகளாக

ஆ) 5 முதல் 6 ஆண்டுகளாக

இ) 6 ஆண்டுகளுக்கு மேல்

9.நீங்கள் வழக்கமாக உயர் இரத்த அழுத்த மருந்துகளை எடுத்து கொள்கிறீர்களா??

அ) ஆமாம்

ஆ) இல்லை.

10.குடும்ப வரலாற்றில் உயர் இரத்த அழுத்த நோய் உள்ளதா?

அ) ஆமாம்

ஆ) இல்லை

11.ஒரு நாளைக்கு தூங்கும் சராசரி மணி நிலை என்ன?

அ) 8 மணி நேரத்துக்கு கீழ்

ஆ) 8 மணி நேரம் வரை

இ) 8 மணிநேரத்துக்கு மேல்

12.நீங்கள் மதியம் ஓய்வு எடுப்பவரா?

அ) ஆமாம்

ஆ) இல்லை

ஆம் எனில், எத்தனை மணி நேரம்? ------------

13. நீங்கள் வழக்கமாக இரத்த அழுத்தம் மாதிரி பயிற்சிகளை பின்பற்றுகிறீர்களா?

அ) ஆமாம்

ஆ) இல்லை

ஆம் எனில்,பயிற்சியை குறிக்கவும் ----------

APPENDIX – D

VEL R.S. Medical College
(College of Nursing)

Owned by R.S. Trust
(Approved by Govt. of Tamil Nadu,
Indian Nursing Council, New Delhi, Tamil Nadu Nurses & Midwives Council &
Affliated to The Tamil Nadu Dr. M.G.R. Medical University)
No. 42, Avadi - Alamathi Road,
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Phone : 044 - 26840605, E-mail : vrsmc_con@yahoo.com

Administrative Office:
"Santi Sudha", # 38 (Old No. 24),
ABM Avenue, (Opp. Park Sheraton Hotel),
Chennai - 600 028. India.
Phone off : 24355648, 24334845, 24335828
Residence : 24344708
Fax : 24340386, 24357591
Grams : VELGROUP CHENNAI - 28
E-mail : veltech@md3.vsnl.net.in
Website : WWW.vel-tech.org
Phone : 26841093 Fax : 26841601

13/01/2011

To

Sub: Seeking permission for conducting main and pilot study-reg.

Respected Sir/ Madam,

This is to introduce Mrs. B.Sheeba Basil, Master Degree Nursing student of this college. She has selected the following topic for the Research study to be submitted to the T.N Dr. M.G.R Medical University as partial fulfillment of the master degree in nursing program.

The topic for the study is "Effectiveness of Garlic on Blood pressure among hypertensive clients in selected Villages".

She is interested in conducting Main Study & Pilot study at your estimated institution.

I assure you that our student will abide by the rules and regulations of the Institution. I request you're at most help in regard to the same.

Thanking you,

Place:
Date

Prof.Mrs.M.Anuradha

PRINCIPAL
PRINCIPAL
VEL R. S. MEDICAL COLLEGE
(COLLEGE OF NURSING)
42, AVADI-ALAMATHI ROAD
VELLANUR CHENNAI

S. STEPHEN, B.Com.
CHAIRMAN
KOLLEMCODE TOWN PANCHAYAT

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work, "**A Quasi experimental study to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected village, Kollencode, 2011-2012"** done by **Mrs. B. Sheeba Basil**, II year M.Sc (Nursing) Student of Vel. R.S. Medical College-College of Nursing, Chennai, is edited for English language appropriateness.

Date   **Signature:**

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work, "**A Quasi experimental study to assess the effectiveness of garlic mixture on blood pressure among hypertensive clients in selected village, Kollencode, 2011-2012**" done by **Mrs. B. Sheeba Basil**, II year M.Sc (Nursing) Student of Vel. R.S. Medical College-College of Nursing, Chennai, is edited for English language appropriateness.

Date

Signature:

M.SREEDHARAN, M.Sc., M.Ed., M.Phil., M.B.A.,
P.G. Asst (Chemistry)
Vijayanta Hr., Sec., School,
HVF Estate, Avadi, Chennai-600 054.

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the Tamil version used for the dissertation work, "**A Quasi experimental study to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected village, Kollencode, 2011-2012**" done by **Mrs. B. Sheeba Basil**, II year M.Sc (Nursing) Student of Vel. R.S. Medical College-College of Nursing, Chennai, is edited for Tamil language appropriateness.

Date   **Signature:**

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the Tamil version used for the dissertation work, "**A Quasi experimental study to assess the effectiveness of garlic mixture on blood pressure among hypertensive clients in selected village, Kollencode, 2011-2012**" done by **Mrs. B. Sheeba Basil**, II year M.Sc (Nursing) Student of Vel. R.S. Medical College-College of Nursing, Chennai, is edited for Tamil language appropriateness.

Date 11·1·12

Signature:

D. AMALA SUJEEVANA ~~~ M.Ed.
Headmistress
Avadi Municipal Middle School
Kovilpadagai
Avadi, Chennai-600 062

NO HARM CERTIFICATE

This is to certify that Mrs. B. Sheeba Basil, M.Sc (Nursing) II year student, Vel. R.S. Medical College, College of Nursing, Chennai on the topic,**" A Quasi experimental study to assess the outcome of garlic mixture on blood pressure among hypertensive clients in selected villlage"** is validated that the garlic has no harmful effect on blood pressure and she can proceed with this to conduct the main study.

PLACE: **SIGNATURE**

DATE:

NO HARM CERTIFICATE

This is to certify that Mrs.B.Sheeba Basil, M.Sc (Nursing) II year student, Vel.R.S.Medical College, College of Nursing, Chennai on the topic," **A Study to assess the effectiveness of garlic on blood pressure among hypertensive clients in selected villages**" is validated that the garlic has no harmful effect on blood pressure and she can proceed with this to conduct the main study.

Dr. K. RADHAKRISHNAN NAIR
MA, SMP, ND, RMP, D.V.M.S.
Reg. No-1851/95-33/30/00052 & B-10092/05
AMRITHA SURABHI **SIGNATURE**
PARAMBARYA, SIDHA, MARMA, PRAKRITHI CHIKILSALAYAM
THOOKKA MUDIPURA ROAD
KOLLEMCODE-629 160, KK (Dt.)
Tel- 04651- 329758, 247373. (Res), Mob: 9443693541

Place: Kollemcode

Date: 10 -6 -2011

NO HARM CERTIFICATE

This is to certify that Mrs.B.Sheeba Basil, M.Sc (Nursing) II year student, Vel.R.S.Medical College, College of Nursing, Chennai on the topic," **A Study to assess the effectiveness of garlic on blood pressure among hypertensive clients in selected villages"** is validated that the garlic has no harmful effect on blood pressure and she can proceed with this to conduct the main study.

[Ms. Revathy M.Sc]
Dietician.

SIGNATURE

Place: CHENNAI

Date: 17/12/11