

**EFFECTIVENESS OF ZONE THERAPY ON  
QUALITY OF LIFE AMONG PATIENTS WITH  
HYPERTENSION IN SELECTED VILLAGES  
AT TIRUNELVELI DISTRICT**



**DISSERTATION SUBMITTED TO  
THE TAMILNADU DR.M.G.R.MEDICAL UNIVERSITY  
CHENNAI**

**IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE DEGREE OF  
MASTER OF SCIENCE IN NURSING  
SEPTEMBER 2015**

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**BY  
Mrs.G.JEBAKANI PRINCES**



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**SRI.K.RAMACHANDRAN NAIDU COLLEGE OF NURSING**

**Affiliated to The Tamilnadu Dr.M.G.R. Medical University,  
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## **ABSTRACT**

The Research Project, “**A study to assess the effectiveness of zone therapy on quality of life among patients with hypertension in selected villages at Tirunelveli district**’. It was conducted in partial fulfillment of the requirement for the Degree of Master of science in nursing at Sri K. Ramachandran Naidu College of Nursing which was affiliated to the Tamil Nadu Dr. M.G.R Medical University, Chennai during the year 2013 - 2015.

### **The Objectives of the study were:**

- ☆ To assess the pre test and post test level of quality of life among patients with hypertension in experimental group and control group.
- ☆ To find out the effectiveness of zone therapy on quality of life among patients with hypertension in experimental group
- ☆ To compare the pre test and post test level of quality of life among patients with hypertension in experimental group.
- ☆ To associate the post test level of quality of life among patients with hypertension in experimental group and control group with their selected demographic variables like age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment.

### **All Hypotheses were tested at 0.05 level of significance**

**H1:** The mean post test level of quality of life in experimental group will be significantly higher than the mean post test level of quality of life in control group.

**H2:** The mean post test level of quality of life in experimental group will be significantly higher than their mean pre test level of quality of life.

**H3:** There will be a significant association between the post test level of quality of life among patients with hypertension in experimental and control group with their selected demographic variables. (age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment .)

### **The framework of the study was based on the Modified Wiedenbach's Helping Art of Clinical Nursing Theory**

Totally sixty patients were selected from the two villages. Thirty patients were selected to experimental group, thirty patients were selected to control group. The samples were selected based on the criteria for sample selection. According to purposive sampling technique the patients were selected to the experimental group and control group. The experimental group received zone therapy for about 15 minutes a day on alternative days for 3 weeks. Posttest was carried out for the experimental group and control group on fourth week.

The Research design was Quasi experimental – Pretest and Posttest control group design. The setting of the study was perumpattur and puliampatti villages at Tirunelveli district. It was situated about 15 kms and 18 kms from Sri.K.Ramachandran Naidu College of Nursing at Tirunelveli district.

The descriptive and inferential statistics were used to analyze the data.

### **The significant Findings of the study were**

On analysis of frequency and percentage distribution of demographic variables in age in experimental group out of 30 samples, majority 15 (50%) of them were in the age group of 56 – 65 years and in the control group out of 30 samples, majority 13 (43.33%) of them were in the age group of 56 – 65 years.

With respect to the variable sex in experimental group, out of 30 samples, majority 18 (60%) of them were males and in the control group out of 30 samples, majority 19 (63.33%) of them were males.

With regard to the variable religion in experimental group, out of 30 samples, majority 28 (93.33%) of them were Hindus and in the control group out of 30 samples, majority 29 (96.67%) of them were Hindus.

Concerning to the variable education in experimental group, out of 30 samples, majority 16 (53.34%) of them were illiterates and in the control group out of 30 samples, majority 18 (60%) of them were illiterates.

Pertaining to the variable occupation in experimental group, out of 30 samples, majority 14 (46.67%) of them were self employed and in the control group out of 30 samples, majority 13 (43.33%) of them were coolie workers.

With respect to the variable monthly income in experimental group, out of 30 samples majority 22 (73.33%) of them were having the income of Rs.3001 – Rs.6000

and in the control group out of 30 samples majority 18 (60%) of them were having the income of Rs.3001 – Rs.6000.

With regard to the variable marital status in experimental group, out of 30 samples majority 28 (93.33%) of them were married and in the control group out of 30 samples, all 30 (100%) of them were married.

Concerning the variable type of family in experimental group, out of 30 samples majority 19 (63.33%) of them were from nuclear family and in the control group out of 30 samples, majority 17 (56.67%) of them were from joint family.

Regarding the variable number of children in experimental group, out of 30 samples majority 17 (56.67%) of them were having more than 2 children and in the control group out of 30 samples majority 18 (60%) of them were having more than 2 children.

With respect to the variable dietary habits in experimental group, out of 30 samples majority 26 (86.67%) of them were non- vegetarian and in the control group out of 30 samples majority 27 (90%) of them were non- vegetarian.

With regard to the variable duration of illness in experimental group, out of 30 samples majority 16 (53.33%) of them were suffering for 3 years and in the control group out of 30 samples majority 14 (46.66%) of them were suffering for 3 years.

With respect to the variable following DASH in experimental group, out of 30 samples majority 26 (86.67%) of them were not following DASH and in the control group out of 30 samples majority 26 (86.67%) of them were not following DASH.



Pertaining to the variable mode of treatment in experimental group, out of 30 samples majority 26 (86.67%) of them were taking medication and in the control group out of 30 samples majority 28 (93.33%) of them were taking medication.

On analysis of the mean and standard deviation in post test experimental group showed a mean value of 87 with the standard deviation of 4.42 and the control group showed a mean value of 42.76 with the standard deviation of 3.99. The calculated 't' value was 40.66 at  $P < 0.05$  level. This shows improvement in quality of life.

There was a significant association between the post test level of quality of life among hypertensive patients in experimental group with their selected demographic variables age, education, monthly income, dietary habits, following DASH, and mode of treatment and there was no significant association between the post test level of quality of life among hypertensive patients with their selected demographic variables sex, religion, occupation, marital status, type of family, number of children, and duration of illness.

There was a no significant association between the post test level of quality of life among hypertensive patients in control group with their selected demographic variables age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment.

**Based on the findings of the study, it is recommended that,**

Based on the findings of the present study the following recommendations are made

- ↳ A similar study can be conducted with large samples for better generalisation.

- ↳ A study can be conducted to assess the level of knowledge and practice of nurses with regard to zone therapy in improving the quality of life of hypertensive patients.
- ↳ A comparative study can be conducted by using zone therapy and aroma therapy on improvement of quality of life of hypertensive patients.
- ↳ The same study can be repeated to assess the effectiveness of zone therapy to improve the quality of life of secondary hypertensive patients admitted in hospitals.

## **CONCLUSION**

This study assessed the effectiveness of zone therapy on quality of life among patients with hypertension. The study findings revealed that, there was a significant improvement in the quality of life of hypertensive patients after application of zone therapy in the experimental group. On the basis of the study, the researcher concluded that application of zone therapy to the hypertensive patients to improve the quality of life. Zone therapy is an effective; easy and potentially risk free intervention.

# CHAPTER I

## INTRODUCTION

*“The quality of life is more important than life itself”*

-- [Alexis Carrel](#)

### BACKGROUND OF THE STUDY

In the modern world each and every individual's life has become stressful. This stressful life is directly affecting a common Person. A common man is suffering from various psycho physiological disorders. In this busy life schedule man is not having the time to relax. As the world is moving cardiovascular diseases have become one of the leading cause of mortality and morbidity.

Hypertension is one of the major risk factor for stroke, myocardial infarction, vascular disease and chronic kidney disease. **(Framingham heart study, 2004)**

High blood pressure termed “hypertension” is a condition that afflicts almost 1billion people worldwide and is a leading cause of morbidity and mortality. More than 20% of Americans are hypertensive, and one third of these Americans are not even aware they are hypertensive. Therefore, this disease is sometimes called “silent killer”. The disease is usually asymptomatic until the damaging effects of hypertension such as stroke, myocardial infarction, renal dysfunction, visual problems etc are observed. **(Richard E.klabunde, 2007)**

Hypertension is defined as a consistent elevation of systolic blood pressure > 120 mm of hg and consistent elevation of diastolic blood pressure >80 mm of hg.

Hypertension mainly two types primary (essential) and secondary hypertension. **(Sharon Lewis, 2007)**

Hypertension means "High blood pressure; transitory or sustained elevation of systemic arterial blood pressure to a level likely to induce cardiovascular damage or other adverse consequences." **(Medilexicon's medical dictionary, 2000)**

The prevalence of chronic disease is showing an upward trend in most countries. In particular of hypertension in India is 59.9 and 69.9/1000 in males and females respectively. "As blood pressure goes up, life expectancy goes down". **(WHO, 2003)**

International hypertension guidelines have created categories. Classification of Blood Pressure for adults aged 18 years or older is as follows: Normal: Systolic lower than 120 mm Hg, diastolic lower than 80 mm Hg, Pre hypertension: Systolic 120-139 mmHg, diastolic 80-89 mm Hg, Stage 1 hypertension: Systolic 140-159 mmHg, diastolic 90-99 mmHg, Stage 2 hypertension: Systolic 160 mmHg or greater, diastolic 100 mmHg or greater. **(JNC, 2003)**

Hypertension may be primary, which may develop as a result of environmental or genetic causes, or secondary which has multiple etiologies including renal, vascular, and endocrine causes. Primary or essential hypertension accounts for 90-95% of adult cases, and secondary hypertension accounts for 2-10% of cases. **(Vasan, 2006)**

Ninety five hypertensive patients in community are essential, idiopathic etiology and only small percentages have an identifiable cause. Epidemiological evidence shows that there are several factors which play an important role in the development, evolution and prognosis of hypertension. Some of them are non modifiable factors such as age, sex, ethnicity and heredity and modifiable factors are body weight, salt intake, use of

hormonal contraceptive drugs, sedentary life, stress, cigarette smoking and alcoholism. **(Warrel, 2008)**

Quality of life refers to the general wellbeing of individuals and societies. It is a broad multidimensional concept that usually includes self-reported measures of physical and mental health. The study of quality of life is an examination of influences upon the goodness and meaning of life as well as individual's happiness and wellbeing. **(PubMed.com)**

In general, quality of life (QOL) is the perceived quality of an individual's daily life, that is, an assessment of their well-being or lack thereof. This includes all emotional, social, and physical aspects of the individual's life. In health care, health-related quality of life (HRQOL) is an assessment of how the individual's well-being may be affected over time by a disease, disability, or disorder. **(wikipedia.com)**

The term quality of life (QOL) refers to the general well-being of individuals and societies. The term is used in a wide range of contexts, including the fields of international development, healthcare, and politics. Quality of life should not be confused with the concept of standard of living, which is based primarily on income. Instead, standard indicators of the quality of life include not only wealth and employment but also the built environment, physical and mental health, education, recreation and leisure time, and social belonging. **(Pubmed.com)**

Also frequently related are concepts such as freedom, human rights, and happiness. However, since happiness is subjective and difficult to measure, other measures are generally given priority. It has also been shown that happiness, as much as it can be measured, does not necessarily increase correspondingly with the comfort that

results from increasing income. As a result, standard of living should not be taken to be a measure of happiness. Also sometimes considered related is the concept of human security, though the latter may be considered at a more basic level and for all people.

**(Robert Costanza, 2011)**

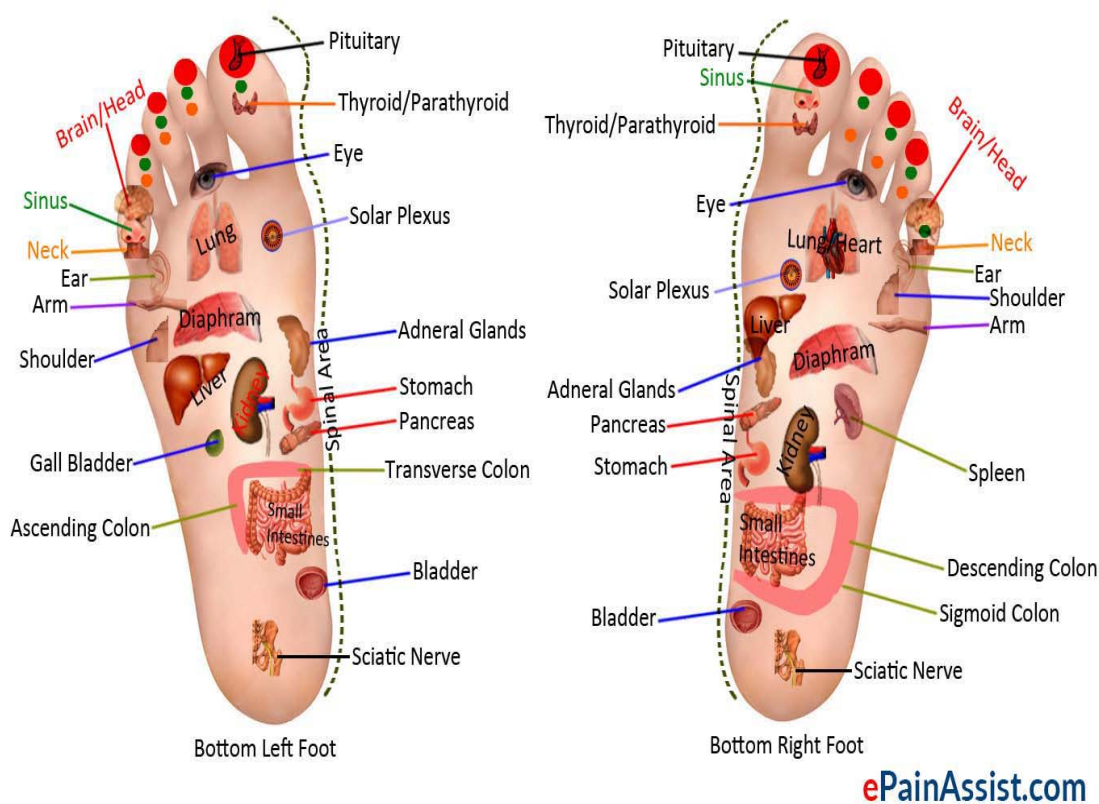
Researchers at the University of Toronto's Quality of Life Research Unit define quality of life as "The degree to which a person enjoys the important possibilities of his or her life" (UofT). Their Quality of Life Model is based on the categories "being", "belonging", and "becoming", respectively who one is, how one is not connected to one's environment, and whether one achieves one's personal goals, hopes, and aspirations. **(The University of Toronto, 2010)**

Quality of life is assessed through WHOQOL-BREF questionnaire. The WHOQOL-BREF consists of 24 facets and provides scores on four dimensions of quality of life such as physical health, psychological, social relationships and environmental health. WHOQOL-BREF is available in both self-administered and interviewer administered forms. **(Wikipedia.com)**

There is growing evidence that non pharmacological interventions lower blood pressure. These interventions are not costly and are generally beneficial in promoting health. They also help in decreasing the cardiovascular risk factors at little cost and with minimal risk they are progressive relaxation, effective goal setting, meditation, exercise, foot reflexology, deep breathing and yoga to control blood pressure. **(Panwar, 2007)**

Reflexology is a natural, holistic therapy based on the discovery that there are points on the feet and hands which correspond to organs and systems of the body. For thousands of years, techniques similar to reflexology have been used in Egypt and China.

A technique called "zone therapy" was developed in the early 20th century by an American physician named William Fitzgerald. Dr. Fitzgerald suggested that maps of the foot could be used to diagnose and treat medical conditions. He divided the body into 10 zones and labeled what he believed to be the corresponding parts of the foot. He proposed that gentle pressure on the foot could bring relief to the corresponding zone.



In the 1930s, Eunice Ingham, a nurse and physiotherapist, further developed these maps to include specific reflex points. Zone therapy was renamed reflexology. Reflexology charts are diagrams of the feet with corresponding parts of the body. The right foot corresponds to the right side of the body, and the left foot corresponds to the left side.

Modern reflexologists use Ingham's methods, or similar techniques developed by the reflexologist Laura Norman. Massage therapists, chiropractors, podiatrists, physical therapists, and nurses may also use reflexology.

Foot Reflexology is an extended form of touch which results in mutual energy exchange. It produces relaxation. It is the most widely used complementary therapy in nursing practice. It is one of the way nurses use to communicate caring to patient and touch is central to the nurses role in healing. **(Walter Last, 2008)**

## **NEED FOR THE STUDY**

Hypertension is very common indeed and hence a major public health issue. The estimated number of adults living with high blood pressure globally was 972 million. This is expected to increase to 1.56 billion by 2025. **(Duluth, 2003)**

Hypertension was common in both developed (333 million) and undeveloped (639 million) countries. In Europe hypertension occurs in about 30-45% of people. **(Soreson, 2010)**

Hypertension is a worldwide epidemic. The prevalence of hypertension in the United States is increasing and reached 34% in 2006 and African American adults have among the highest rates of hypertension in the world at 44%. Hypertension is more prevalent in men (though menopause tends to decrease this difference) and in those of low socioeconomic status. **(Ferroini, 2007)**

In India, hypertension has increased by 30 times in urban populations over 25 years and by 10 times in rural populations over 36 years. **(World health day, 2013)**

Hypertension was directly responsible for 7.5 million deaths in 2004, 2.8 per cent of the total global deaths. The prevalence of hypertension in the age group 20 to 59 was



27.50 per cent. Of these, 53.30 per cent were aware of their diagnosis; 42.80 per cent were taking treatment and only 10.50 per cent had controlled BP. **(Shimona, 2013)**

Pooling of epidemiological studies shows 31.5 million hypertensive in rural and 34 million in urban populations. A total of 70% of these were Stage I hypertension (systolic BP 140-159 mmHg and diastolic BP 90-99 mmHg). Recent reports shows that Stage I hypertension carry a significant cardiovascular risk and there is a need to reduce this blood pressure. **(Gupta, 2004)**

A very high percentage of Indians are in a pre-hypertension stage. Mizoram had 58.5 per cent people in pre-hypertension stage though the actual population suffering from high blood pressure was only 19 per cent. This was followed by Uttarakhand with 48.8 per cent, Kerala (48.1 per cent) and Maharashtra (46.2 per cent). Madhya Pradesh, Tamilnadu and Andhra Pradesh are among the other States that have over 40 per cent of the population in the pre-hypertension category. **(Integrated Disease Surveillance Survey, 2008)**

In Tamilnadu recently the high prevalence of hypertension is in rural areas. The study reported 21.4 per cent hypertension prevalence in about 10,500 people aged between 25 to 64 in 11 villages in the State with both sexes being affected equally. It was published in the International Journal of Public Health. **(Dr. PrabhdeepKaur, 2012)**

In Tamilnadu 857616 people in the 16 districts who came to healthcare facilities for other ailments were screened between July to September 2012 alone. 60,517 of these were found to have hypertension. **(Jerard, 2013)**

In Tamilnadu, pilot study was conducted in Sivaganga and Virudhunagar districts during 2007-2010 to screen and treat people for hypertension during which about 11,

31,000 people were screened for hypertension in 98 health facilities. The median age at occurrence of hypertension was 54 years (range, 41-70). **(Vasudevan, 2012)**

Hypertension or high blood pressure is one common ailment in adults. It is estimated that more than 10 million people may have higher blood pressure but also unaware their illness. As per research conducted in India about 2 percent in rural areas have suffering from hypertension. The overall incidence of hypertension is estimated to be 66 million **(J Hum, 2000)**

Association of physicians of India conducted a survey and concluded urban areas in the counts had a significantly higher incidence of hypertension 27-37% as compared to rural areas 2-8%. In India about 20% of adults' population suffers from hypertension making it the country's highest silent killer from this almost 90% of the cases fall into the category of primary essential hypertension **(Agarwal, 2001)**

Three hundred and eighty five camps in rural areas in Tamilnadu and 7.35 lakhs people were screened and found out that 5.02% of population was affected with hypertension **(Tamilnadu Government public and preventive medicine, 2003)**

Seventy million adults in the United States are affected by hypertension. The condition also affects about two million teens and children. Over half of all Americans with hypertension do not have their high blood pressure under control. **(Centers for Disease Control and Prevention, 2012)**

The incidence of hypertension is increasing in developing countries such as Thailand, as a result of sociological, political and economic changes. These changes are producing enormous alterations in people's lifestyles, following similar trends in western

countries. Negative changes in food consumption, alcohol consumption, and level of physical activity, smoking, stress and tension have led to an increase in chronic health problems for Thai people. Age, gender, ethnicity, genetic background, family health history and hyper lipidaemia are likely to influence hypertension. **(National Economic and Social Development Board, 1997)**

It has been found that health care professionals and patients with chronic disease have increased their use of complementary therapies to help relieve uncomfortable symptoms and suffering **(Long, Huntley & Ernst, 2001)**

The quality of life of hypertensive patients is not good. There are many ways to improve the quality of life of hypertensive patients. Among one is zone therapy. Zone therapy is a well known complementary therapy which claims to help the body achieve homeostasis. It is believed that pressing specific areas on the feet related to specific glands or organs of the body can help these glands and organs to function at their peak, allowing the body to heal itself. The principle difference between massage and touch and zone therapy is that zone therapy provides not only the relaxation effect obtained from massage or touch is said to also improve body's immunity contributing to healing process **(Byers, 2001; Dougans, 2002)**

Zone therapy has been scientifically researched in many studies to explore the claimed benefits. Some studies have supported its ability to reduce anxiety and pain. There has been scientific evidence to support the claim that zone therapy can reduce blood pressure and serum lipids, and can improve the quality of life in patients with hypertension. **(Hodgson 2000; Milligan et al 2002; Park & Cho, 2004)**

During the clinical posting the researcher collected history of many hypertensive patients. After the patients diagnosed as hypertension, they have some dietary restrictions, dietary modifications and life style modifications. Because of this the patients are psychologically dull and they have poor quality of life. Hence the researcher felt the need to improve the quality of life of those patients. So the researcher selected the study to assess the effectiveness of zone therapy on quality of life of hypertensive patients.

### **STATEMENT OF THE PROBLEM**

“A study to assess the effectiveness of zone therapy on quality of life among patients with hypertension in selected villages at Tirunelveli district”.

### **OBJECTIVES**

- To assess the pre test and post test level of quality of life among patients with hypertension in experimental group and control group.
- To find out the effectiveness of zone therapy on quality of life among patients with hypertension in experimental group.
- To compare the pre test and post test level of quality of life among patients with hypertension in experimental group.
- To associate the post test level of quality of life among patients with hypertension in experimental group and control group with their selected demographic variables like age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment.

## **HYPOTHESES**

**H1:** The mean post test level of quality of life in experimental group will be significantly higher than the mean post test level of quality of life in control group.

**H2:** The mean post test level of quality of life in experimental group will be significantly higher than their mean pre test level of quality of life.

**H3:** There will be a significant association between the post test level of quality of life among patients with hypertension in experimental and control group with their selected demographic variables. (age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment).

## **OPERATIONAL DEFINITIONS**

### **Assess**

It refers to the systematically, continuously, collecting, validating and communicating the data regarding the quality of life of hypertensive patients.

### **Effectiveness**

It refers to the extent to which zone therapy will improve the quality of life of hypertensive patients and was measured by modified WHO quality of life questionnaire.

### **Zone therapy**

It refers to the application of pressure to the heart and lung zones of the feet of hypertensive patients for 15 minutes duration once a day on alternative days for 3 weeks. Based on a system of zones and reflex areas as per zone therapy foot chart, the investigator selected the zones of diaphragm line to the base of the toes on both feet and zone therapy was administered by the investigator who has undergone a basic training in zone therapy. Zone therapy technique includes finger walking, thumb walking, toe rotation, slide and press and hooking method. The investigator was used only thumb walking method.

### **Quality of life**

The term used to assess the wellbeing of individual in various aspects such as physical, psychological, environmental, and social aspects. It can be assessed by modified WHO Quality of life questionnaire.

### **Hypertension**

Hypertension refers to the persistent systolic blood pressure (SBP)  $\geq$  140 mm hg, diastolic blood pressure (DBP)  $\geq$  90 mm hg. In this study hypertension refers to those persons with first stage of hypertension i.e. 140/90 mm hg to 160/100 mm hg.

### **ASSUMPTIONS**

- Hypertensive patients may not have adequate quality of life.
- Zone therapy may improve the quality of life of hypertensive patients.
- Quality of life may differ from individual to individual.

### **DELIMITATIONS**

- ✓ The study is delimited to only hypertensive patients.
- ✓ The study is delimited to 4 weeks.

- ✓ The study is delimited to the hypertensive patients in selected village.

## **PROJECTED OUTCOME**

1. The finding of the study will help the nurse to plan and use zone therapy in improving the quality of life of patients.
2. Zone therapy will improve the quality of life and thereby improving the comfort and feeling of pleasant to the patient.
3. The findings of the study will help the nurse to plan the educational program based on zone therapy.

## CONCEPTUAL FRAMEWORK

The conceptual framework is a set of interrelated concepts that are assembled together in some rational scheme, in virtue of their relevance to a common theme. Conceptual framework helps to stimulate research and extensive knowledge. **(Polit, 1990)**

The conceptual framework for research study presents the measure on which the purpose of study is based. The framework provides the perspective from which the investigator views the problems. The study is based on the concept that the effectiveness of zone therapy to improve the quality of life among patients with hypertension. The investigator adopted the modified Ernestine Wiedenbach's helping art of clinical nursing theory as a base for developing conceptual framework.

Ernestine Wiedenbach's proposes helping art of clinical nursing theory in 1964 for nursing, which describes a desired situation and a way to attain it. It directs action towards the explicit goal. This theory has 3 factors.

- Central purpose
- Prescription
- Realities

### CENTRAL PURPOSE



In this study, the central purpose is to improve the quality of life among patients with hypertension.

### **PRESCRIPTIONS**

The application of zone therapy will improve the quality of life among patients with hypertension.

### **REALITIES**

The five realities are identified by Wiedenbach are agent, recipient, goal, means, activities and framework

**Agent:** The agent is one who has personal attributes, capacities, capabilities, commitment and competence to provide demonstration. In this study the researcher is the agent. It refers to plan for providing zone therapy to the hypertensive patients.

**Recipient:** The recipient is the patients who had received the investigator's intervention. In this study, hypertensive patients who receive zone therapy were the recipients.

**Goal:** The goal is to direct actions and suggests that the reason for taking those actions. In this study goal is to improve the quality of life after the application of zone therapy among the hypertensive patients.

**Means:** The means are the activities used by the investigator to achieve the goal. In this study application of zone therapy with a purpose of improving quality of life.

**Framework:** The framework refers to the facilities in which nursing is practiced. In this study framework refers to puliampatti village and perumpattur village.

The conceptualization of nursing according to this theory consists of three steps as follows.

- **Step I** : Identifying the need for help.
- **Step II** : Ministering the need for help.
- **Step III** : Validating the need for help.

### **Step I: Identifying the need for help.**

This step involves determining the need for help. The hypertensive patients were identified based on the inclusive and exclusive criteria. Purposive sampling technique was used to select the samples. Assess the quality of life among hypertensive patients by using WHO modified quality of life questionnaire in both the groups.

### **Step II: Ministering the need for help.**

This refers to the provision of needed help. In my study after the selection of samples the investigator applied zone therapy to the hypertensive patients in the experimental group for the period of 15 minutes alternative days for 3 weeks and the control group not received the intervention.

### **Step III: Validating the need for help.**

The validation was done by doing the post test after 3 weeks of application of zone therapy and by using the WHO modified quality of life questionnaire in both the experimental and control group. Hypertension were categorized by pre hypertension, stage I hypertension and stage II hypertension and quality of life were categorized by three views that poor quality of life, good quality of life and very good quality of life.

It is accomplished by means of rendering zone therapy and it is followed by analysis of data findings.



## **CHAPTER II**

### **REVIEW OF LITERATURE**

Review of literature is defined as a critical summary of review on a topic of interest, often prepared to put a research problem in context (**Polit& Beck, 2006**).

The review of literature in the research report is a summary of current knowledge about a particular practice problem and includes what is known and not known about the problem. The literature is reviewed to summarize knowledge for use in practices or to provide a basis for conducting a study (**Burns, 1997**)

#### **ORGANISATION OF REVIEW OF LITERATURE:**

**Section A:** Studies related to prevalence and risk factors of hypertension.

**Section B:** Studies related to zone therapy on hypertension.

**Section C:** Studies related to zone therapy on quality of life of hypertensive patients.

#### **SECTION A: STUDIES RELATED TO PREVALENCE AND RISK FACTORS OF HYPERTENSION**

**Godwin et al., (2013)** conducted a descriptive cross-sectional study among hypertensive patients attending clinics at the Cardiology Unit, Colombo to study the prevalence and define differential risk factors for hypertension in a hypertensive of South Asian origin. All the patients with hypertension who provided informed written consent were recruited to the study (n = 277). Mean age was 61±10.3 years and 50.2% were males. The mean of average systolic and diastolic blood pressures (BP) were 133.04±12.91 mmHg and 81.07±6.41 mmHg respectively. Uncontrolled BP was present in 41.1% (n = 114) of patients. Those with diabetes mellitus, obesity (body mass index >

27.5 kg/m<sup>2</sup>) and those who were older than 55 years were significantly higher in the risk hypertensive group. A significant proportion of the hypertensive patients were having uncontrolled hypertension which was significantly associated with the presence of obesity and diabetes mellitus.

**Laurencia., (2013)** did a study on prevalence and risk factors for hypertension in Adansi South, Ghana. Hypertension continues to emerge globally as one of the most dangerous cardiovascular disease risk factors. This article presents the results of a cross-section analysis of Adansi South residents ( $N = 539$ ) 5 years and older to investigate the blood pressure status and select hypertension risk factors across all age groups. Approximately a third of Adansi South respondents (27.1%) were identified as hypertensive. While the largest percent of the hypertensive samples were in the 40 to 59 age group, of concern was the emerging pattern among young and adolescent respondents who were either identified as hypertensive and having modifiable risk factors for hypertension like elevated body mass index.

**Kotani et al., (2013)** conducted a study to evaluate the impact of a number of demographic, biological, behavioral and lifestyle health risk factors on the incidence of hypertension in Thailand over a 4-year period. A prospective study of health risk factors and their effects on the incidence of hypertension. The overall 4-year incidence of hypertension was 3.5%, with the rate in men being remarkably higher than that in women (5.2%). In both men and women, hypertension was strongly associated with age, obesity and co morbidities while it had no association with socioeconomic factors. The cohort patterns of socioeconomic and hypertension reflect that the health risk transition in Thais

is likely to be at the middle stage. Diet and lifestyle factors associate with incidence of hypertension in Thais and may be amenable targets for hypertension control programmes.

**Padwal et al., (2012)** conducted a large cross-sectional study on prevalence of hypertension in United States. Hispanic ethnicity (18.9%) compared to either non-Hispanic white (27.7%) or non-Hispanic black (35.5%) was associated with the lowest prevalence of hypertension. Race/ethnicity was a single independent predictor of hypertension, with non-Hispanic black more likely to be hypertensive compare with Hispanic Racial/ethnic disparities in hypertension persisted after controlling for potential predictors of hypertension, implying the inability of known hypertension risk factors to account for racial/ethnic variability in hypertension in US.

**Sinha., (2011)** conducted a cross sectional study to estimate the prevalence of hypertension and to explore the risk factors associated with hypertension in adults living in Central Development Region of Nepal. The participants underwent anthropometric measurement and blood pressure and answered a pretested questionnaire. Overall prevalence of hypertension was 22.4% (males: 32.7% and female: 15.3%). Bivariate analysis showed significant relationship of hypertension with gender, age, literacy, physical inactivity, body mass index (body mass index), smoking and alcohol consumption. Therefore, intervention measures are warranted emphasizing on modifiable risk factors such as smoking, alcohol consumption, physical activity and obesity to prevent hypertension.

**Lorenzo et al., (2011)** conducted a study to examine the mortality risk among 3632, 97% participants in the sanantanio heart study to evaluate the impact of blood

pressure on relationship between prehypertension and mortality risks not known in individuals who are free of diabetes mellitus and cardiovascular disease. The results were prehypertension prevalence was 31.6% at baseline. There were 218 deaths during the follow up period. Conclusion says that prehypertension increases mortality risk (all causes and cardiovascular) in individual who are free of diabetes mellitus and cardiovascular disease.

**Peter songolo et al., (2011)** conducted a study on prevalence of hypertension in Zambia in which total of 1928 individuals participated in the survey, of which 33.0% were males. About a third of the respondents had attained secondary level education (35.8%), and 20.6% of males and 48.6% of females were overweight or obese. The prevalence for hypertension was 34.8% (38.0% of males and 33.3% of females). In multivariate analysis, factors independently associated with hypertension were: age, sex, body mass index, alcohol consumption, sedentary lifestyle, and fasting blood glucose level.

**Adnan et al., (2010)** conducted an analytical prospective study that aims to determine prevalence of arterial hypertension in a population from ClujCounty. Study included 2266 patients; each subject was subbody mass indextted to an interview based on a questionnaire. Diagnosis of arterial hypertension was established according to ESH criteria. Arterial hypertension represents an important health problem in Romania due to an increased prevalence, major impact on morbidity and mortality by cardiovascular and cerebro-vascular disease. These facts accentuate the necessity of an early diagnosis, of making people aware of the severity of the disease and it's impact on their lifestyle.

**Reddy et al., (2010)** conducted a cross sectional study in tirupathi town to study the prevalence of hypertension and its risk factors as well as its extent of diagnosis and management among adults aged 40-60 years. This review summarizes that overall hypertension. Prevalence rate was 8.6% among 1000 adults. 83.7% were aware of their hypertension, all of those treated only 41.7% had satisfactory control of their hypertension. Higher prevalence was found with the history of cerebrovascular accident, cardiovascular accident 50%, alcohol intake 20%, diabetes mellitus 33.3%, family history of hypertension 23.3%, smoking 22.4%, age more than 50 years 22.2%, lack of physical exercise 15.8%, body mass index above 25 14.9%.

**Yuvraj et al., (2009)** did a study on prevalence, awareness, treatment and control of hypertension in rural areas of davanagere was conducted. The results shows that prevalence rate of hypertension in the study population were 18.3% than in females 17.5%. 11.6%, 5.6% and 1.2% of total subjects had grade 1, 2 and 3 respectively. Only 33.8% of them were aware of their hypertension status. Hypertension of 32.1% was on treatment and 12.5% adequately controlled their blood pressure.

**Nahla et al., (2008)** conducted a cross sectional study to investigate the prevalence and associated risk factors of hypertension and prehypertension among preparatory and secondary school teachers in Jeddah, KSA. A multistage stratified random sampling technique was used. The prevalence of hypertension & prehypertension were 25.2 % & 43.0 %, respectively, among the sample of 1476 teachers. Predictors of prehypertension were male gender (aOR = 3.22, CI: 2.49, 4.16), age  $\geq$  40, and body mass index  $\geq$  25. The



prevalence of prehypertension and hypertension was high among teachers in Jeddah & body mass index was the strongest modifiable risk factor.

**Das et al., (2008)** conducted a study on prevalence of hypertension in urban areas of India using the Joint National Committee VII criteria with the aim of identifying the risk factors and suggesting intervention strategies. A total of 1609 respondents out of 1602 individuals participated. Age and sex specific prevalence of hypertension showed progressive rise of systolic and diastolic hypertension in women when compared to men. Men showed progressive rise in systolic hypertension beyond fifth decade of life. Bivariate analysis showed significant relationship of hypertension with age, sedentary occupation, body mass index, diet, ischemic heart disease and smoking. The observed prevalence of hypertension in this study and other studies suggest the need for a comprehensive national policy to control hypertension in India and in other similar developing countries.

**Boston., (2006)** conducted a study on trends in prevalence, incidence, and control of hypertension in US. Prior to 1990, population data suggest that hypertension prevalence was decreasing; however, recent data suggest that it is again on the rise. Hypertension prevalence has also been increasing in other countries, and an estimated 972 million people in the world are suffering from this problem. Incidence rates of hypertension range between 3% and 18%, depending on the age, gender, ethnicity, and body size of the population studied. Despite advances in hypertension treatment, control rates continue to be suboptimal. Only about one third of all hypertensives are controlled in the United States. Programs that improve hypertension control rates and prevent hypertension are urgently needed.

**Rabecca et al., (2005)** had done a prospective study of body mass index and the risk of developing hypertension in fodor. They studied 13,563 initially healthy non hypertensive men who participated in physician's health study. They calculated body mass index from self reported weight and height and defined hypertension as self reported systolic blood pressure  $\geq 140$ mmHg, diastolic blood pressure  $\geq 90$ mmHg/new antihypertensive medication use. After a median 14.5 years 4920 participants developed hypertension. Higher baseline body mass index, even in consistently associated with increased risk of hypertension compared to participants in lowest body mass index quintile  $< 22.4$ kg/m the relative risk of developing hypertension for men with a body mass index 22.4-23.6, 23.7-24.7, 24.8-26.4kg/m were 1.20, 1.31, 1.56 and 1.85 respectively. Further adjustment for diabetes mellitus, high cholesterol and baseline blood pressure did not substantially after these results. They found a strong gradient between higher body mass index and increased risk of hypertension even among men within the normal and mildly overweight body mass index range. Approaches to decrease the risk of developing hypertension may induce prevention of overweight and obesity.

**Vikas et al., (2004)** conducted cross-sectional studies in puducherry showed that systolic blood pressure increases throughout life, whereas diastolic blood pressure increases until about age 50 years and then declines in men and women and in all racial groups resulting in a widening pulse pressure resulting in isolated systolic hypertension in older persons. By age 60 years, about two third of those with hypertension have isolated systolic hypertension. Now it is widely recognized that systolic blood pressure is equally important than diastolic blood pressure in determining cardiovascular and renal complications of hypertension.

**Shapo., (2003)** conducted a cross sectional study on prevalence of hypertension and other cardiovascular risk factors on the adult population of Tirana City (Albania). 1120 adults aged 25 years and over (response rate=72.7%) were participated. Overall, hypertension prevalence (blood pressure =140 and/or 90 mm Hg, or known hypertensive receiving anti-hypertensive treatment) was 31.8% (36.6% and 27.4% in men and women respectively). Age standardized prevalence of hypertension (adjusted to the adult population of Tirana) was 30.2% (99% confidence intervals 29.8% to 30.6%) in men and 22.7% (22.3% to 23.1%) in women. The prevalence of hypertension increased with increasing age and was more common in the obese in both sexes. Albania is in a state of rapid transition, with evidence that risk factors for non-communicable diseases have already increased considerably over the past two decades.

**Kumar et al., (2003)** conducted a study on prevalence of hypertension in the employees of a mega industry at south Gujarat to find out the prevalence of hypertension and the impact of various risk factors on it and suggest the remedial measures. 1300 employees of industry were included in this study. Results revealed that the prevalence of hypertension. Hypertension was more in general shift workers and in certain sections (transport, finance, accounts, fire and security). Prevalence was also high in persons who were overweight. (Consuming alcohol and tobacco). Treatment, compliance amongst 204, aware patients was only 17%.

**Toprak et al., (2003)** conducted a study in Germany to assess hypertension patient's baseline health behavior their disease, life styles, behavioral modifications, sources of information about their disease and management of hypertension. The researcher administered questionnaire to 72 hypertensive patients. The patients mean

body mass index was  $27\pm 4\text{kg/m}$ , though diet restriction had been most common traditional self treatments found among hypertension patients were eating egg, yogurt with garlic 27.8% and eating sour foods 25%. From media a considerable proportion of patients gained their knowledge regarding hypertension. It was concluded that through media, client education and behavioral modification can be achieved and it will help in treatment and control of hypertension.

**Sanjay et al., (2003)** conducted a cross sectional study to describe the prevalence of hypertension and other cardiovascular risk factors on the adult population of china City (Albania). A total of 1120 adults aged 25 years and above were included in this study. Overall, hypertension prevalence was 31.8% (36.6% and 27.4% in men and women respectively). Age standardized prevalence of hypertension (adjusted to the adult population of china) was 30.2% (99% confidence intervals 29.8% to 30.6%) in men and 22.7% (22.3% to 23.1%) in women. Men were significantly more likely to be hypertensive than women (p value=0.001). The prevalence of hypertension increased with increasing age and was more common in the obese in both sexes.

**Wamala., (2003)** did a community-based cross-sectional study on prevalence factors associated with hypertension in rukungiri district, Uganda was done. A random sample of consenting district residents, aged 20 years or older was enrolled to participate in this study. The questionnaire collected data on demographics, social economic and exposure history to various potential risk factors for hypertension. Out of 842 study participants, 252 were hypertensive. The age-standardized prevalence of hypertension was 30.5%. The prevalence of hypertension in this rural Ugandan district is relatively

high. The findings confirm the growing concern about hypertension as a public health problem in Uganda.

## **SECTION B: STUDIES RELATED ZONE THERAPY ON HYPERTENSION**

**Nadia Mohamed Taha and Zeinab Hussain Ali., (2011)** conducted a clinical trial on 68 patients with hypertension and divided randomly into two experiment (n=34) and control (n=34) groups. Each patient in the experiment group received foot reflexology for 30 minutes. Data were recorded in the demographic and blood pressure record form. There were no significant differences between the mean systolic and diastolic blood pressures of patients in experiment and control groups at baseline. The blood pressure was significantly reduced among the experiment group after receiving the foot reflexology ( $P<0.05$ ). The mean systolic blood pressure was significantly reduced in the experiment group after 10 and 30 minutes of massage; and the diastolic blood pressure was reduced significantly in all measured times. Results showed positive effects of foot reflexology on reducing blood pressure in patients with hypertension. Foot reflexology should be recommended as a supplement treatment in patients with hypertension.

**Jasvir Kaur, Sukhpal Kaur, Neerja Bhardwaj et al., (2009)** conducted a study to assess the effect of 'foot massage and reflexology' on physiological parameters i.e systolic and diastolic blood pressure, heart rate and oxygen saturation of critically ill patients. The study was carried out in five intensive care units. Using purposive sampling, 60 patients were enrolled. A protocol on the procedure of 'foot massage and reflexology'

was developed. An Observation checklist was used to record the various parameters. Three days the procedure of 'foot massage and reflexology' was implemented on the patients. There was no significant difference in any of the physiological parameters. There was significant decrease in the systolic blood pressure, increase in diastolic blood pressure, reduction in the heart rate and improvement in the oxygen saturation in some interventional observations after the intervention.

**Dr. Jesus Manzanare., (2009)** conducted a study to evaluate the effectiveness of foot reflexology on patients with high blood pressure on 54 patients diagnosed with HBP, 34 females and 20 males. The 54 patients were divided in 2 groups experiment group and control group. Two different protocols were used consisting of (1) a generalized reflexology treatment and (2) a specific reflexology treatment for high blood pressure. All subject in Groups (a) received Reflexology Protocol All subject in Groups (b) received specific Reflexology Protocol. All groups received foot reflexology treatments 2 times per week over 10 weeks for a total of 20 sessions. The sessions included firm pressure of reflexology for duration of 5 to 7 minutes in each foot. After all 20 sessions were completed; the experimental group achieve lowered blood pressure levels than the normal reflexology group.

**Garrido-Ardila EM et al., (2007)** conducted a systematic review and meta-analysis to evaluate the effectiveness of foot reflexology on patients with hypertension. Electronic database and manual searches were conducted on all published studies reporting the effects of foot reflexology on hypertension. Forty four studies were eligible including fifty studies associated with hypertension. The effects of foot reflexology were

analyzed by using Comprehensive Meta-Analysis Version 2.0. Foot reflexology had a larger effect reducing blood pressure.

**Park HS, Cho GY., (2004)** conducted a study to evaluate the effects of foot reflexology on blood pressure, serum lipids level and life satisfaction in essential hypertension patients. The research design used was a nonequivalent control group pretest-posttest design. Foot Reflexology was used as the experimental treatment. Thirty-four subjects were assigned to an experimental group (18) and control group (16). Foot Reflexology was administered twice a week for 6 weeks and self foot Reflexology was administered twice a week for 4 weeks on the experimental group. There was a significant decrease in systolic blood pressure but no significant decrease in diastolic pressure in the experimental group compared to the control group. The total cholesterol level in the experimental group compared to the control group was not significantly decreased after foot reflexology. However, the triglyceride level in the experimental group compared to the control group was significantly decreased after foot reflexology. On the other hand, high density lipoprotein and low density lipoprotein levels in the experimental group compared to the control group was not significantly decreased after foot reflexology. Life satisfaction in the experimental group compared to the control group was significantly improved after foot reflexology. The results proved that foot reflexology was an effective nursing intervention to decrease systolic pressure, and triglyceride but not for the blood cholesterol.

## **SECTION C: STUDIES RELATED TO ZONE THERAPY ON QUALITY OF LIFE OF HYPERTENSION**

**Karima elshamy and eman elsafety., (2010)** conducted a study to investigate the effect of foot reflexology on blood pressure and quality of life among hypertensive patients. A quasi-experimental study was conducted for patients with hypertension attended the outpatient clinic of the Specialized Medical Hospital at Mansoura University, Egypt, samples were randomly allocated into two equal groups (40 in the foot reflexology group (intervention), and 40 in the control group. Two tools were used for data collection: I : Demographic and medical interview schedule. II: Quality of Life Questionnaire. Systolic blood pressure decreased significantly in intervention group from 160.2mmHg to 136.5mmHg compared to (162.5mmHg to 155.2mmHg) in controls. There was a statistically significant decrease in means of diastolic blood pressure between pre and post intervention (102.0mmHg –87.5mmHg) within the intervention group and also in Quality of Life in either group (pre levels was 42.2, 47.1 and post levels was 45.9, 47.4 in the 2 groups respectively). This study supported that foot reflexology can reduce blood pressure levels in patients with hypertension, and quality of life.

**Taehan Kanho Hakhoe chi., (2008)** conducted a study to evaluate the effects of foot reflexology on blood pressure, and quality of life in essential hypertension patients. The research design used was a nonequivalent control group pretest-posttest design. forty subjects were assigned to an experimental group (20) and control group (20). Foot Reflexology was administered twice a week for 3 weeks and self foot Reflexology was administered twice a week for 4 weeks on the experimental group. There was a significant decrease in systolic blood pressure in the experimental group compared to the



control group. Life satisfaction in the experimental group compared to the control group was significantly improved after foot reflexology.

**Somchock, Jeranut., (2006)** conducted a study to investigate the effect of foot reflexology on reducing blood pressure in patients with hypertension. One hundred twenty eight patients with hypertension who attended the hypertensive clinic in the medical outpatients department of Phramongkutklo Hospital, Bangkok, Thailand were enrolled and participated in the study. This study used a randomized controlled trial design. Participants were randomly allocated into one of two groups 64 participants in the foot reflexology group (intervention) and 64 in the light foot massage group (control). Participants were asked to complete a demographic data questionnaire and the World Health Organization Quality of Life-BREF (WHOQOLBREF) (World Health Organization 1996) questionnaire. Participants in the foot reflexology group received their usual medical treatment and a 50-minute foot reflexology treatment twice a week for 3 weeks. Participants in the light foot massage group received their usual medical treatment and 30-minute light foot massage session without pressure on specific reflexology areas twice a week for 3 weeks. Blood pressure was recorded before and after each treatment. At the end of the study, participants were asked to complete the WHOQOL-BREF. The study proved that foot reflexology can decrease blood pressure, and it could improve the quality of life in patients with hypertension.

**Maria.A. et al., (2005)** conducted an experimental study to assess the effectiveness of foot reflexology on quality of life of hypertensive patients. The research design used was randomized control design. Foot Reflexology was used as the experimental treatment. Foot Reflexology was administered twice a week for 4 weeks to

the experimental group. There was a significant improvement in the mean quality of life in experimental group compared to the control group

**Vibe Hansen., (2004)** conducted a study to identify the effectiveness of reflexology on quality of life of patients with hypertension among thirty patients with hypertension. The patients were divided into two groups, as reflexology group, and control group. The results showed that 9 out of the 10 patients in the reflexology group experienced reduction of blood pressure and improvement in the mean quality of life after reflexology treatment. The researcher concluded that, reflexology treatment was effective in reducing blood pressure and improving the quality of life of hypertensive patients.

## CHAPTER III

### RESEARCH METHODOLOGY

Methodology includes the steps, procedures and strategies for gathering and analyzing the data in the research investigation.

This chapter describes the methodology, includes the research approach, research design, variables, setting of the study, population, sample, sample size, sampling technique, criteria for selection of the sample, intervention, development and description of the tool, content validity, pilot study, reliability, data collection procedure and plan for data analysis.

#### RESEARCH APPROACH

Quantitative research approach was used for the study.

#### RESEARCH DESIGN

The research design adopted for the study was quasi experimental pre test and post test control group design.

The research design is diagrammatically represented as:

GROUP	PRE TEST	INTERVENTION	POST TEST
Experimental group	O1	X	O2
Control Group	O1	--	O2

**Fig 2: Schematic Representation of Research Design**

#### Keys:

O1: Pre test level of quality of life of experimental and control group.

X: Providing zone therapy to experimental group.

O2: Post test level of quality of life of experimental and control group.

## **VARIABLES**

Variables are characters that can have more than one value. The categories of variables discussed in the present study are, independent variable and dependent variable.

### **Independent variables**

Zone therapy

### **Dependent variables**

Quality of life of patients with hypertension.

## **SETTING OF THE STUDY**

The setting of the study refers to the area where the study was conducted. The study was conducted in two villages in Tirunelveli district. In that puliampatti was selected for experimental group and perumpattur village was selected for control group. This arrangement helped the investigator to carry out the intervention for the experimental group and also reduced the interruption from the control group. The distances between the two villages from the college were 18 killo meters and 15 killo meters respectively. The peoples from both villages got the health care facilities from karivalamvandhanalloor primary health centre. The primary health centre was providing the basic medical care facilities such as immunization, family planning, maternal child health care etc.

## **STUDY POPULATION**

The population of the study was persons with hypertension, residing in Tirunelveli district.

## **SAMPLE**

The patients who are all having stage I hypertension within the age between 35-70 years of both sex residing in puliampatti and perumpattur villages in Tirunelveli district.

### **SAMPLE SIZE**

The Sample size for the study was 60. Among 60 samples, 30 were selected for experimental group and another 30 were for control group. The Samples were selected based on the inclusive and exclusive criteria.

### **SAMPLING TECHNIQUE**

The non probability purposive sampling technique was adopted for the study.

**Step 1:** The investigator selected puliampatti village for experimental group. Total population of puliampatti village is 3745. In that 1930 were males and 1815 were females. The researcher got the list of hypertensive patients residing in puliampatti village from primary health center karivalamvanthanallur. The total number of hypertensive patients in pulampatti village was 148. Based on the inclusion and exclusion criteria, the researcher sort out 96 patients. The researcher checked the blood pressure by using sphygmomanometer and stethoscope. Among them 18 patients were having pre hypertension, 57 patients were having stage I hypertension and 21 patients were having stage II hypertension. The researcher conducted pre test by using modified WHO quality of life questionnaire to the stage I hypertensive patients (57). Based on the pre test scores 48 patients were having poor quality of life, 9 patients were having good quality of life and none of them having very good quality of life. Among the 48 patients with poor quality of life, 30 samples were selected for the experimental group.

**Step 2:** The investigator selected perumpattur village for control group. Total population of perumpattur village is 4672. In that 2456 were males and 2186 were females. The researcher got the list of hypertensive patients residing in perumpattur village from

primary health center karivalamvanthanallur. The total number of hypertensive patients in perumpattur village was 173. Based on the inclusion and exclusion criteria, the researcher sort out 112 patients. The researcher checked the blood pressure by using sphygmomanometer and stethoscope. Among them 19 patients were having pre hypertension, 65 patients were having stage I hypertension and 28 patients were having stage II hypertension. The researcher conducted pre test by using modified WHO quality of life questionnaire to the stage I hypertensive patients (65). Based on the pre test scores 54 patients were having poor quality of life, 11 patients were having good quality of life and none of them having very good quality of life. Among the 54 patients with poor quality of life, 30 samples were selected for the control group.

## **CRITERIA FOR THE SELECTION OF THE SAMPLE**

### **Inclusive criteria**

- Persons with in the age group of 35 to 70 years.
- Persons with first stage of hypertension i.e.140/90 mm hg to 160/100 mm hg.
- Persons with illness duration of 2 to 5 years.
- Persons with poor quality of life.
- Persons who are willing to participate.
- Persons who were present at the time of data collection.
- Both male and female patients with stage I hypertension.

### **Exclusive criteria**

- Patients with prehypertension and stage II hypertension.
- The patients with hypertension associated with other systemic illness such as diabetes mellitus, renal disease and cardiac disease.
- The Patients who have wound or ulcer in foot.
- The Patients who were already on zone therapy.

## **DEVELOPMENT AND DESCRIPTION OF THE TOOL**

The tool consist of two sections

## **SECTION-A**

Section-A comprises of demographic variables like age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment.

## **SECTION-B**

Section B consists of modified WHO quality of life questionnaire to assess the quality of life of patients with hypertension.

## **SCORE INTERPRETATION**

Section B consists of WHO quality of life questionnaire with 4 options, with positive and negative questions.

Positive questions scored as:

- 4- Not at all
- 3- Moderate
- 2- Very much
- 1-Extremely

Negative questions scored as:

- 1- Not at all
- 2- Moderate
- 3- Very much
- 4- Extremely

The maximum score is 120

Scoring key:

<b>DESCRIPTION</b>	<b>SCORE</b>
--------------------	--------------

Poor	0 -60
Good	61-90
Very good	91-120

### **VALIDITY:**

The content validity of the tool was obtained from four nursing experts and one medical expert in the field of medical surgical nursing. The content validity of the tool was established on the basis of opinion given by the experts.

### **RELIABILITY:**

The researcher was used modified WHO quality of life questionnaire. It is standardized and universally acceptable one. Reliability of WHO quality of life questionnaire of hypertensive patients was established by test-retest method by using Karl Pearson's correlation coefficient. The reliability score was  $r=0.8$  which showed a highly positive correlation of the tool. Hence the tool was considered reliable for preceding the main study.

### **INTERVENTION**

The investigator introduced herself to the participants and explained the purpose of the study and established rapport with them and got informed consent. The participants were assured that the information provided by them would be kept confidential.

Because of gravity the substances like uric acid settle in the feet and thereby making the heart function and circulatory function difficult. Zone therapy increases the temperature of the foot makes the substances settled in the feet to expel from the body



through the excretory system, there by improve the circulation and reduce the blood pressure.

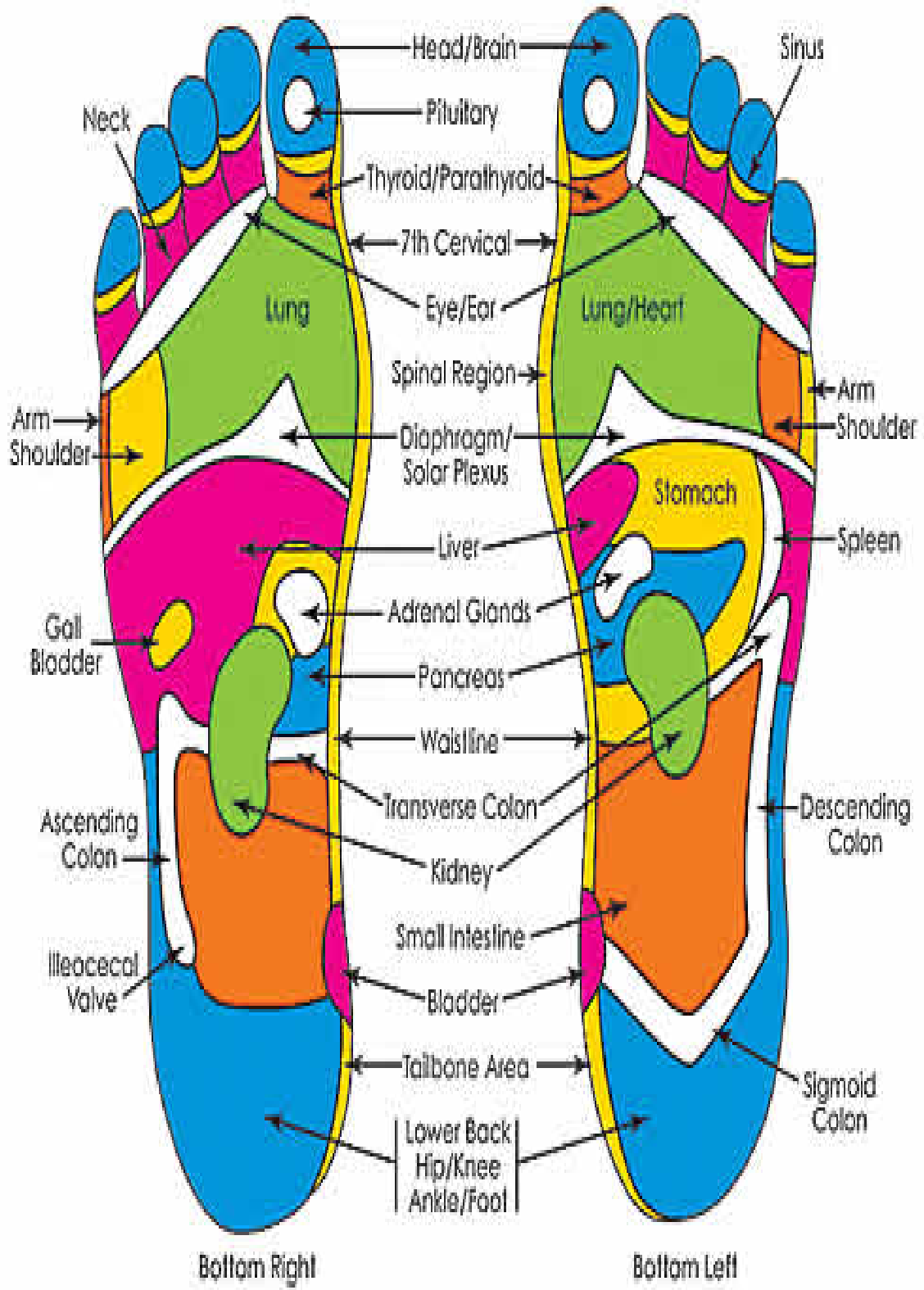
## **STEPS OF THE PROCEDURE**

Tell the patient to lie down in supine position in a relaxed manner. Start with a warm up thereby preparing the feet for therapy. Start directly on the heart and lung area. This area stretches from the diaphragm line to the base of the toes on both feet. Using a technique called the thumb walk, work on this area thoroughly. This area helps strengthen and regulate the heart.

Work over the diaphragm line running just below the ball of the foot using thumb walk. This will help deepen and open breathing and bring more oxygen and ch'i or prana to each cell.

Work on the reflex areas for chest. This area is located on top of both feet, in the troughs between the toes. Starting in zone 1 (at the base of the big toe), work up toward leg, about 2 inches up from the webbing. Continue working each zone, ending in zone 5 near the outside edge of foot using the thumb walk.

Around the base of big toe (on the bottom of foot) is the reflex area for the thyroid and parathyroid glands. These regulate the pulse rate and help with calcium absorption. Work the reflex zone for the thyroid gland by thumb walk technique.



(KEVIN & BARBARA 1980)

Now work on the spine reflexes. These are located on the inside edge of both feet (zone 1), extending from the heel nearly to the top of the big toe, opposite the root of the toenail. Work slowly up the foot and then all the way down using the thumb walk technique.

Working on the spine reflexes nourishes the nervous system that feeds the entire body. Now, work on the soft center of foot, from the diaphragm line down to the midline.

This will stimulate the liver, kidneys, adrenals, and other organs vital for circulation and the regulation of water levels in the body. Thoroughly cover this area, moving up, down, and/ or diagonally. Use the thumb walk technique. It was given 15 minutes a day on alternative days for 3 weeks.

## **PILOT STUDY**

The pilot study was a trial run for main study. A formal permission was obtained from the principal, research and ethical committee of Sri. K. Ramachandran Naidu College of Nursing, Medical officer in primary health centre at karivalam and the president of the village. The tool used for the main study was validated by the pilot study. Pilot study was conducted in Nainapuram village from 23.02.2015 to 01.03.2015. The sample size was 6, in that 3 of them were assigned to experimental group and 3 of them were assigned to control group. The investigator introduced herself to the participants and explained the purpose of the study and established rapport with them and got informed consent. The participants were assured that the information provided by them would be kept confidential. The data related to demographic variables was collected by interview method and it was recorded immediately. The pre test level of quality of life of patients with hypertension was assessed for both groups by modified WHO quality of life questionnaire. Based on the scores and inclusion criteria the researcher selected the

samples. The researcher given zone therapy only to the experimental group. Regular treatment was continued by the control group and post test was done using the same tool and done data analysis. The findings showed that there was a significant difference between the post test level of quality of life of hypertensive patients in experimental group and control group. The tool was found feasible and practicable to proceed with the main study. There was no modification made in the tool after pilot study.

### **PROCEDURE FOR DATA COLLECTION**

A formal permission was obtained from the principal, research and ethical committee of Sri. K. Ramachandran Naidu College of Nursing, Medical officer in primary health centre at karivalam and the president of the village. The village selected for data collection was puliampatti and perumpattur. In that puliampatti was assigned for experimental group and perumpattur was assigned for control group. The period of data collection was 30 days. The investigator introduced herself to the participants and established rapport with them. Then explained the purpose of the study and got informed consent. The participants were assured that the information provided by them would be kept confidential. The data related to demographic variables was collected by interview method and it was recorded immediately. The pre test level of quality of life of patients with hypertension was assessed for both groups by modified WHO quality of life questionnaire. Based on the scores and inclusion criteria the researcher selected the samples by using purposive sampling technique. The sample size was 60 in that 30 of them from puliampatti were assigned to experimental group and 30 of them from perumpattur were assigned to control group. The researcher given zone therapy 15 minutes a day on alternative days for 3 weeks only to the experimental group. Regular

treatment was given to the control group and post test was done using the same tool. The collected data was analyzed in terms of descriptive and inferential statistics.

## **PLAN FOR DATA ANALYSIS**

Both descriptive and inferential statistics were used

### **DESCRIPTIVE STATISTICS**

- Frequency and percentage distribution was used to assess the demographic variables.
- Frequency and percentage distribution was used to assess level of quality of life of hypertensive patients
- Mean and standard deviation was used to compare the pre test and post test level of quality of life of hypertensive patients.

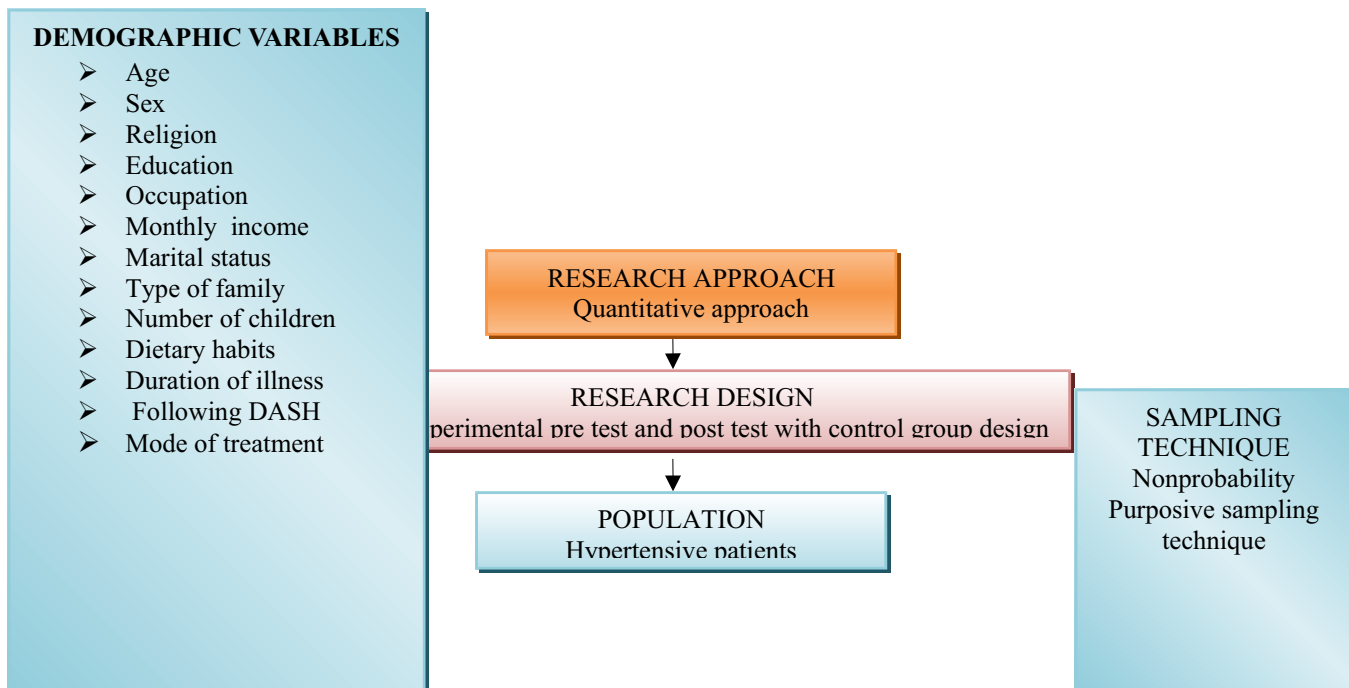
### **INFERENCE STATISTICS**

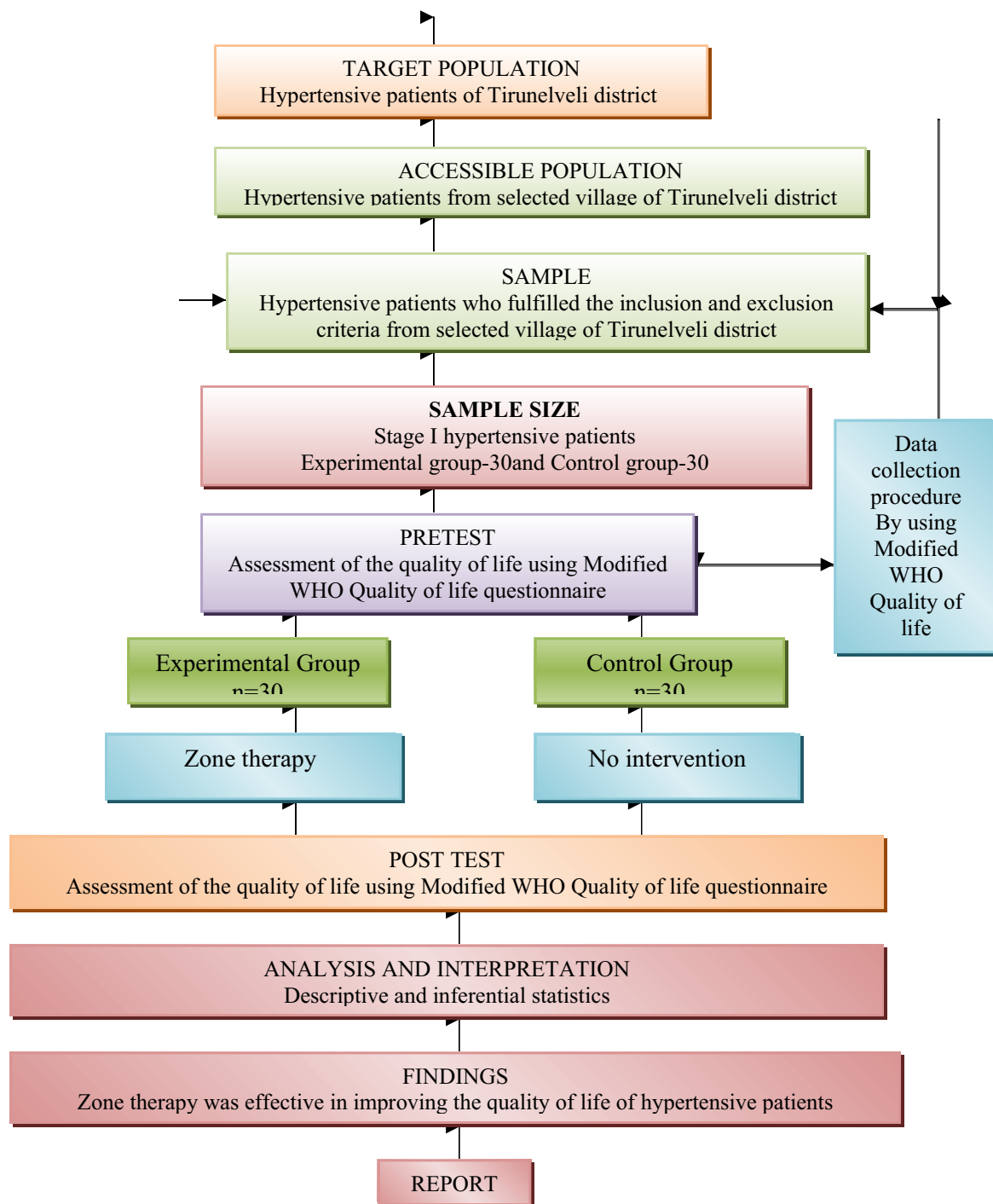
- Paired “t” test was used to compare the pretest and post test level of quality of life of hypertensive patients in experimental group.
- Unpaired “t” test was used to compare post test level of quality of life of hypertensive patients between experimental group and control group.
- Chi- square test was used to find out the association between the post tests level of quality of life of hypertensive patients with their selected demographic variables in experimental group and control group.

### **PROTECTION OF HUMAN RIGHTS**

Research proposal was approved by the research and ethical committee prior to the pilot study and the main study formal permission was obtained from the Head of the department of Medical surgical Nursing, Sri.k.Ramachandran Naidu college of Nursing, Sankarankovil. Informed consent from each participant was obtained before starting the

data collection. Assurance was given to the participants that confidentiality was maintained throughout data collection period the study subject were safe and no adverse effects because of intervention done by the researcher.





**Figure: 3 Schematic representation of Research methodology.**

## CHAPTER IV

### DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data related to the assessment of the effectiveness of zone therapy on quality of life among patients with hypertension in selected villages at Tirunelveli district.

Descriptive and inferential statistics were used for analyzing the data on the basis of the objectives of the study. The data has been tabulated and organized as follows.

#### ORGANISATION OF DATA

##### **Section A: Description of demographic variables of hypertensive patients in experimental group and control group.**

- Frequency and percentage distribution of demographic variables of hypertensive patients with regard to age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment in experimental group and control group.

##### **Section B: Assessment of the level of quality of life among hypertensive patients in experimental group and control group.**

- Frequency and percentage distribution of the pre test and post test level of quality of life among hypertensive patients in experimental group.
- Frequency and percentage distribution of the pre test and post test level of quality of life among hypertensive patients in control group.



**Section C: Comparison of the effectiveness of zone therapy on quality of life among hypertensive patients in experimental group and control group.**

- Mean and standard deviation of the pre test level of quality of life among hypertensive patients in experimental group and control group.
- Mean and standard deviation of the post test level of quality of life among hypertensive patients in experimental group and control group.
- Mean and standard deviation of pre test and post test level of quality of life among hypertensive patients in experimental group and control group.

**Section D: Association between the post test level of quality of life among hypertensive patients in experimental group and control group.**

- Association between the post test level of quality of life among hypertensive patients with their selected demographic variables like age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment in experimental group.
- Association between the post test level of quality of life among hypertensive patients with their selected demographic variables like age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment in control group.

**SECTION A: DESCRIPTION OF DEMOGRAPHIC VARIABLES OF HYPERTENSIVE PATIENTS IN EXPERIMENTAL GROUP AND CONTROL GROUP.**

**Table: 1 Frequency and percentage distribution of demographic variables of hypertensive patients with regard to age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment in experimental group and control group.**

(N=60)

S.No	DEMOGRAPHIC VARIABLES	EXPERIMENTAL GROUP		CONTROL GROUP	
		f	%	f	%
		1.	<b>Age</b>		
	a. 35 – 45 years	3	10	2	6.67
	b. 46 – 55 years	8	26.67	9	30
	c. 56 – 65 years	15	50	13	43.33
	d. 66 – 70 years	4	13.33	6	20
2	<b>Sex</b>				
	a. Male	17	56.67	19	63.33
	b. Female	13	43.33	11	36.67
3	<b>Religion</b>				
	a. Hindu	28	93.33	29	96.67
	b. Christian	2	6.67	1	3.33
	c. Muslim	0	0	0	0
	d. Others	0	0	0	0
4	<b>Education</b>				
	a. Illiterate	16	53.34	18	60
	b. Primary education	9	30	7	23.33
	c. Higher secondary education	4	13.33	3	10
	d. Diploma or degree education	1	3.33	2	6.67
5	<b>Occupation</b>				
	a. Unemployed	2	6.66	3	10
	b. coolie	11	36.67	13	43.33
	c. Private employee	3	10	3	10
	d. Government employee	0	0	0	0
	e. Self employed	14	46.67	11	36.67

6	<b>Monthly income</b>				
	a. Below Rs.3000	2	6.66	3	10
	b. Rs.3001 – Rs.6000	22	73.33	18	60
	c. Rs.6001 – Rs.9000	4	13.33	5	16.67
	d. Above Rs.9001	2	6.67	4	13.33
7	<b>Marital status</b>				
	a. Unmarried	2	6.66	0	0
	b. Married	28	93.34	30	100
8	<b>Type of family</b>				
	a. Joint family	11	36.67	17	56.67
	b. Nuclear family	19	63.33	13	43.33
9	<b>Number of children</b>				
	a. None	3	10	4	13.33
	b. 1	4	13.33	3	10
	c. 2	6	20	5	16.67
	d. More than 2	17	56.67	18	60
10	<b>Dietary habits</b>				
	a. Vegetarian	4	13.33	3	10
	b. Non-vegetarian	26	86.67	27	90
11	<b>Duration of illness</b>				
	a. 2 years	9	30	11	36.67
	b. 3 years	16	53.33	14	46.66
	c. 4 years	3	10	3	10
	d. 5 years	2	6.67	2	6.67
12	<b>Following DASH</b>				
	a. Yes	4	13.33	4	13.33
	b. No	26	86.67	26	86.67
13	<b>Mode of treatment</b>				
	a. Medication	26	86.67	28	93.33
	b. Both medication and exercise	4	13.33	2	6.67

Table 1 reveals the frequency and percentage distribution of demographic variables of hypertensive patients with regard to age, sex, religion, education, occupation,

monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment in experimental group and control group.

With regard to the variable age in experimental group, out of 30 samples, 3 (10%) of them were in the age group of 35 – 45 years, 8 (26.67%) of them were in the age group of 46 – 55 years, 15 (50%) of them were in the age group of 56 – 65 years and 4 (13.33%) of them were in the age group of 66 – 70 years whereas in the control group out of 30 samples, 2 (6.67%) of them were in the age group of 35 – 45 years, 9 (30%) of them were in the age group of 46 – 55 years, 13 (43.33%) of them were in the age group of 56 – 65 years and 6 (20%) of them were in the age group of 66 – 70 years.

Pertaining to the variable sex in experimental group, out of 30 samples, 18 (60%) of them were males and 12 (40%) of them were females whereas in the control group out of 30 samples, 19 (63.33%) of them were males and 11 (36.67%) of them were females.

With respect to the variable religion in experimental group, out of 30 samples, 28 (93.33%) of them were Hindus, 2 (6.67%) of them were Christians, and none of them were Muslims and belong to other category whereas in the control group out of 30 samples, 29 (96.67%) of them were Hindus, 1 (3.33%) of them was Christians, and none of them were Muslims and belong to other category.

With regard to the variable education in experimental group, out of 30 samples, 16 (53.34%) of them were illiterates, 9 (30%) of them were having primary education, 4 (13.33%) of them were having higher secondary education and 1 (3.33%) of them was having diploma or degree education whereas in the control group out of 30 samples, 18

(60%) of them were illiterates, 7 (23.33%) of them were having primary education, 3 (10%) of them were having higher secondary education and 2 (6.67%) of them were having diploma or degree education.

Pertaining to the variable occupation in experimental group, out of 30 samples, 2 (6.66%) of them were unemployed, 11 (36.67%) of them were coolie workers, 3 (10%) of them were private employees, 14 (46.67%) of them were self employed none of them were government employees whereas in the control group out of 30 samples, 3 (10%) of them were unemployed, 13 (43.33%) of them were coolie workers, 3 (10%) of them were private employees, 11 (36.67%) of them were self employed and, none of them were government employees

Concerning the variable monthly income in experimental group, out of 30 samples, 2 (6.67%) of them having the income below Rs.3000, 22 (73.33%) of them were having the income of Rs.3001 – Rs.6000, 4 (13.33%) of them were having the income of Rs.6001 – Rs.9000, and 2 (6.67%) of them were having the income of above Rs.9001 whereas in the control group out of 30 samples, 3 (10%) of them having the income below Rs.3000, 18 (60%) of them were having the income of Rs.3001 – Rs.6000, 5 (16.67%) of them were having the income of Rs.6001 – Rs.9000, and 4 (13.33%) of them were having the income of above Rs.9001.

With regard to the variable marital status in experimental group, out of 30 samples, 2 (6.67%) of them were unmarried and 28 (93.33%) of them were married whereas in the control group out of 30 samples, all 30 (100%) of them were married and none of them were unmarried.

With respect to the variable type of family in experimental group, out of 30 samples, 11 (36.67%) of them were from joint family and 19 (63.33%) of them were from nuclear family whereas in the control group out of 30 samples, 17 (56.67%) of them were from joint family and 13 (43.33%) of them were from nuclear family.

Pertaining to the variable number of children in experimental group, out of 30 samples, 3 (10%) of them were having no children, 4 (13.33%) of them were having one child, 6 (20%) of them were having 2 children, and 17 (56.67%) of them were having more than 2 children whereas in the control group out of 30 samples, 4 (13.33%) of them were having no children, 3 (10%) of them were having one child, 5 (16.67%) of them were having 2 children, and 18 (60%) of them were having more than 2 children.

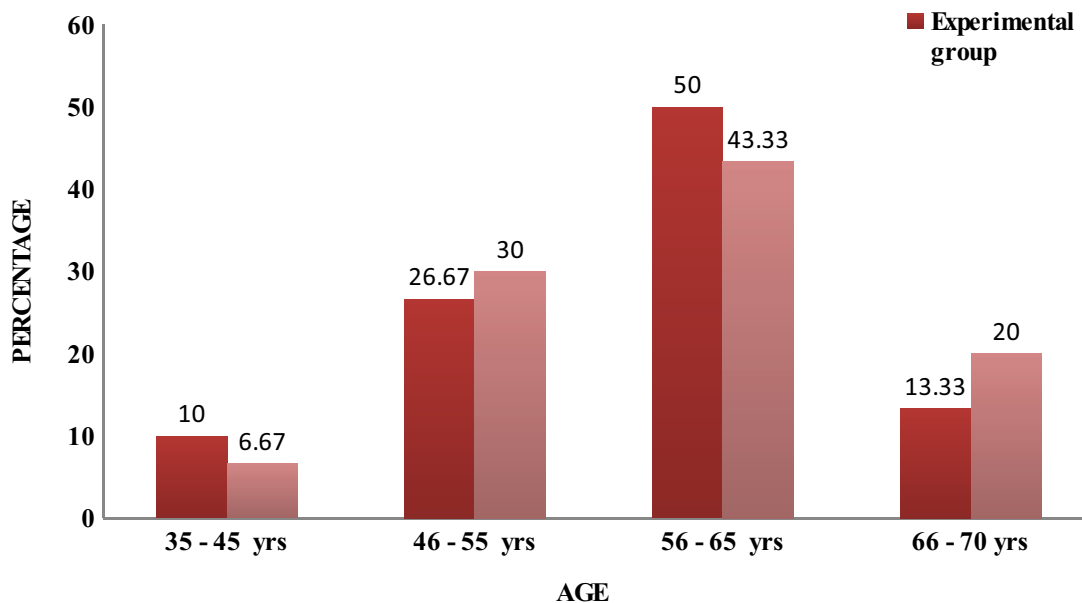
With respect to the variable dietary habits in experimental group, out of 30 samples, 4 (13.33%) of them were vegetarian and 26 (86.67%) of them were non-vegetarian whereas in the control group out of 30 samples, 3 (10%) of them were vegetarian and 27 (90%) of them were non-vegetarian.

With regard to the variable duration of illness in experimental group, out of 30 samples, 9 (30%) of them were suffering for 2 years, 16 (53.33%) of them were suffering for 3 years, 3 (10%) of them were suffering for 4 years, and 2 (6.67%) of them were suffering for 5 years whereas in the control group out of 30 samples, 11 (36.67%) of them were suffering for 2 years, 14 (46.66%) of them were suffering for 3 years, 3 (10%) of them were suffering for 4 years, and 2 (6.67%) of them were suffering for 5 years.

With respect to the variable following DASH in experimental group, out of 30 samples, 4 (13.33%) of them were following DASH and 26 (86.67%) of them were not

following DASH whereas in the control group out of 30 samples, 4 (13.33%) of them were following DASH and 26 (86.67%) of them were not following DASH.

Pertaining to the variable mode of treatment in experimental group, out of 30 samples, 26 (86.67%) of them were taking medication, and 4 (13.33%) of them were following both medication and exercise whereas in the control group out of 30 samples, 28 (93.33%) of them were taking medication, 2 (6.67%) of them were following both medication and exercise.



**Figure: 4 Percentage distribution of demographic variables of age in experimental and control group.**

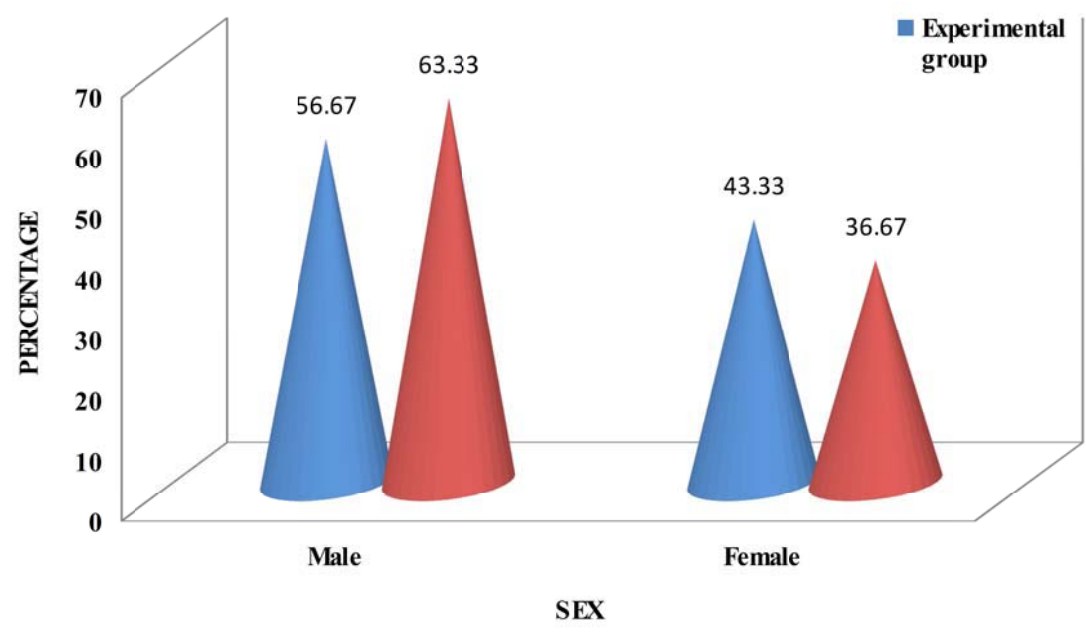


Figure: 5 Percentage distribution of demographic variables of sex in experimental and control group.

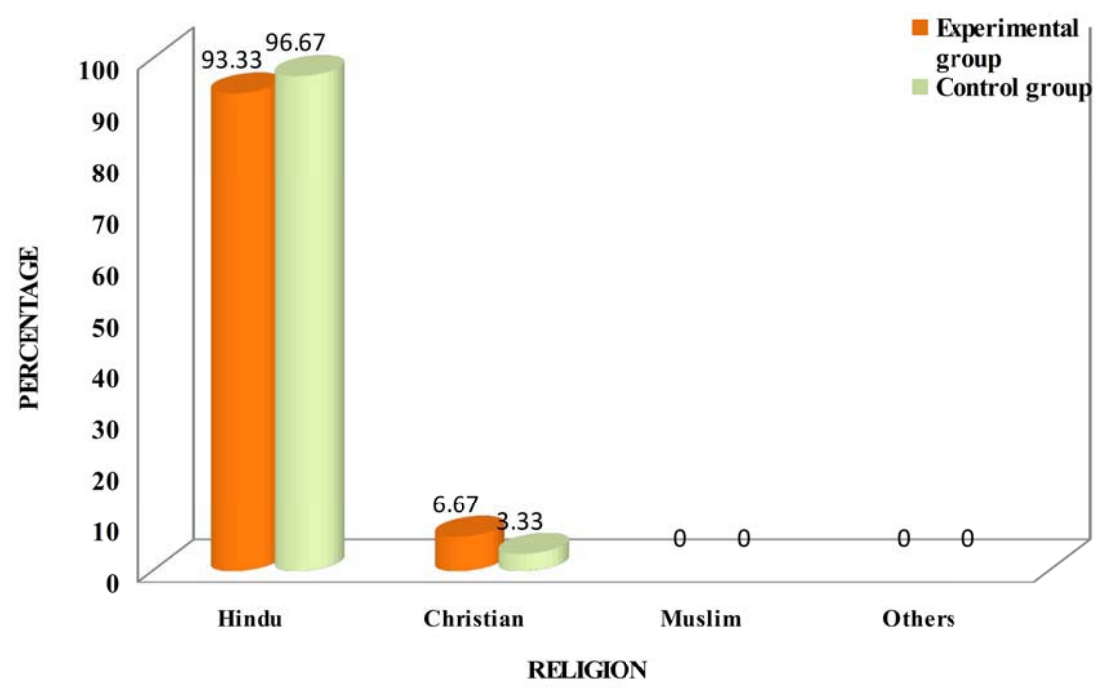


Figure: 6 Percentage distribution of demographic variables of religion in experimental and control group



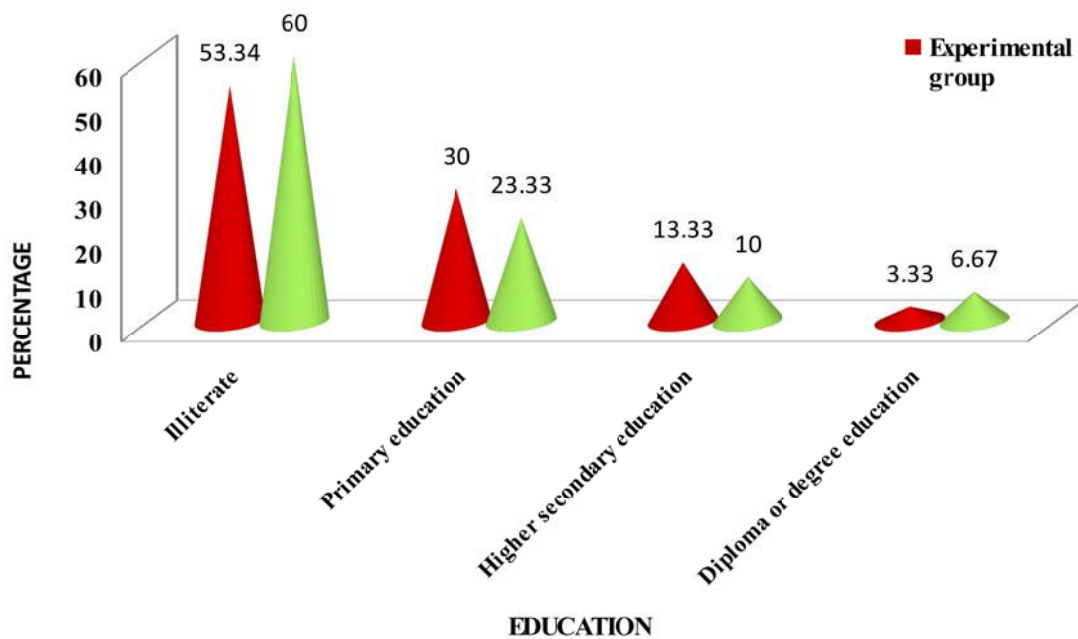


Figure: 7 Percentage distribution of demographic variables of education in experimental and control group

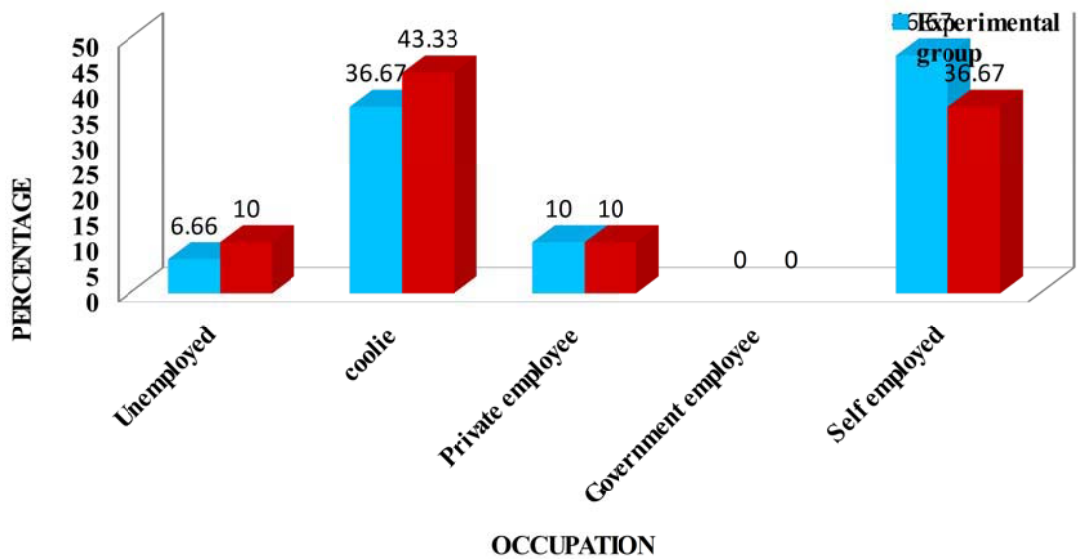
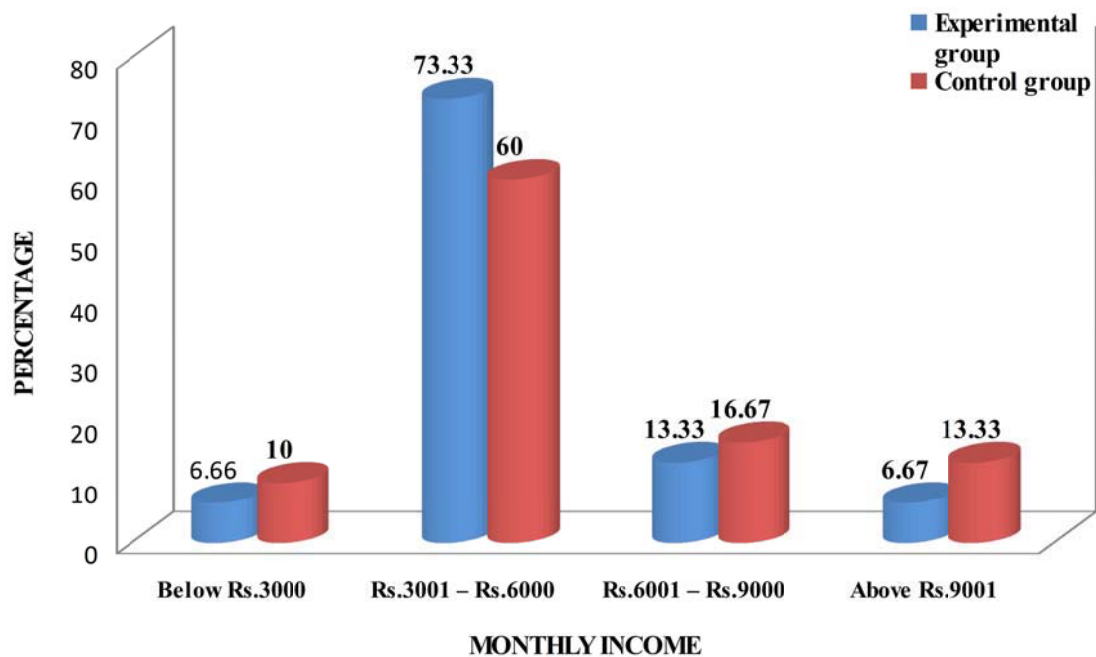
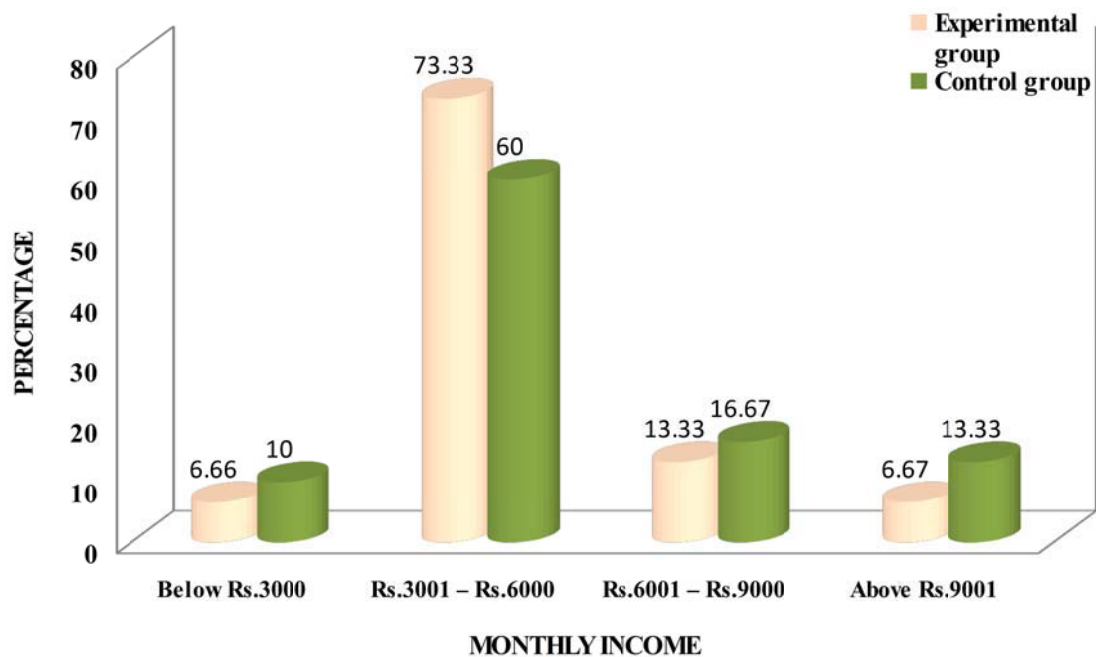
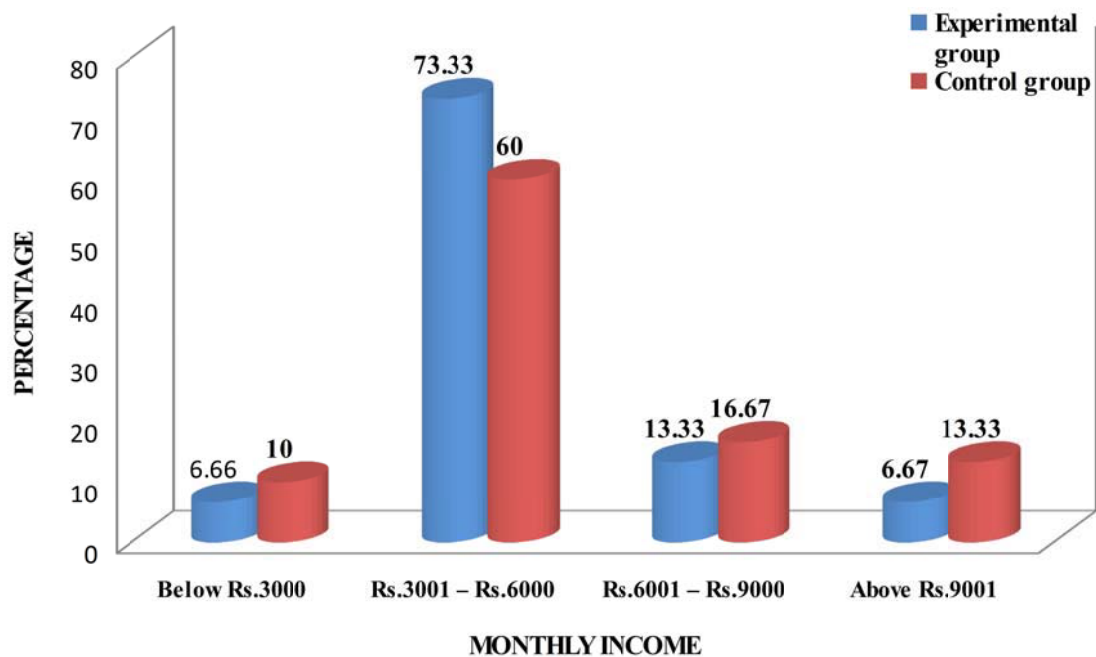
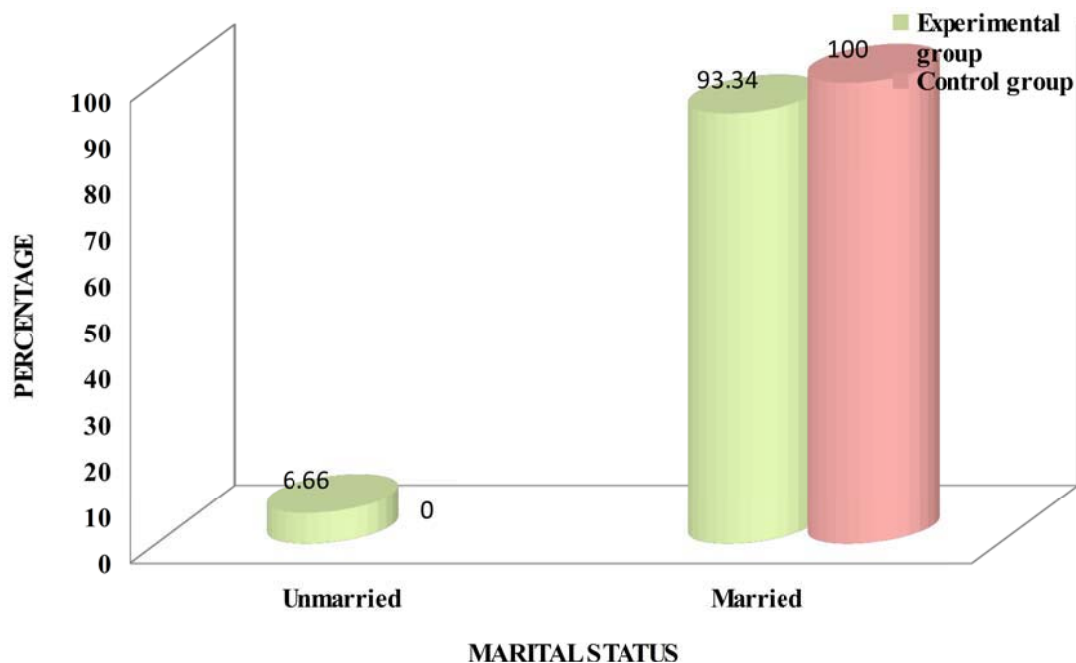


Figure: 8 Percentage distribution of demographic variables of occupation in experimental and control group.

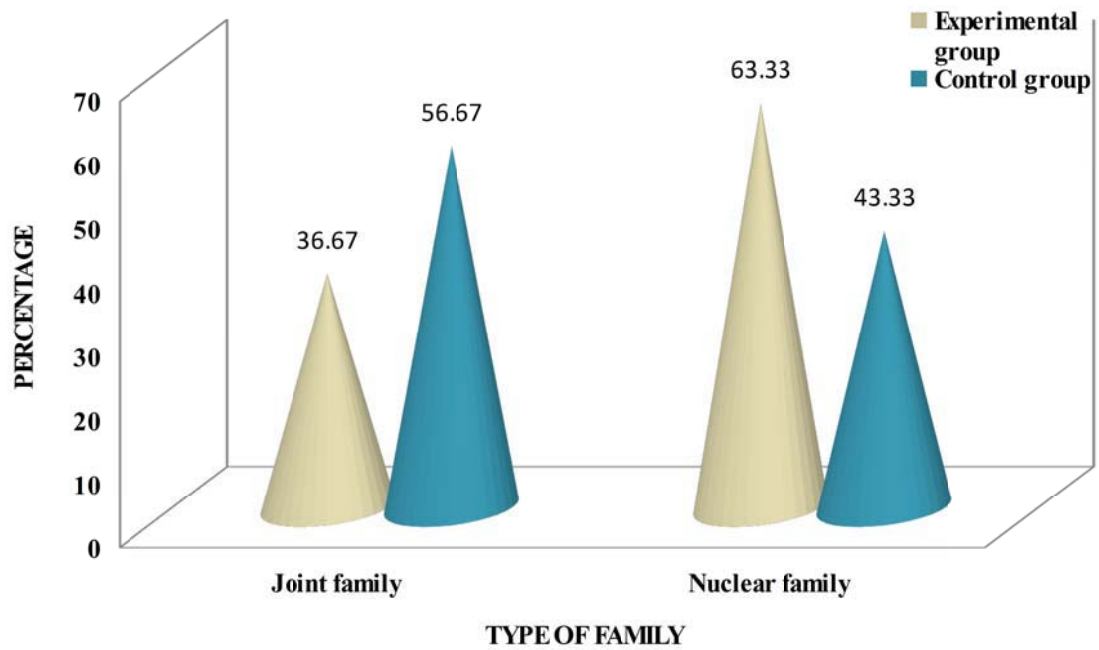




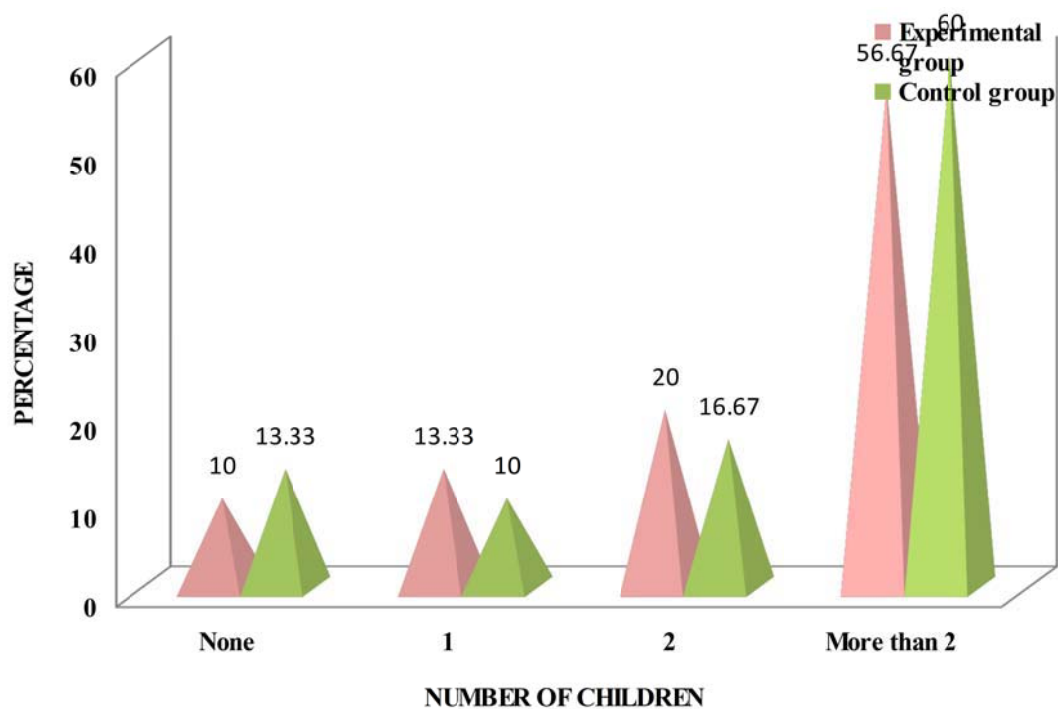
**Figure: 9 Percentage distribution of demographic variables of monthly income in experimental and control group.**



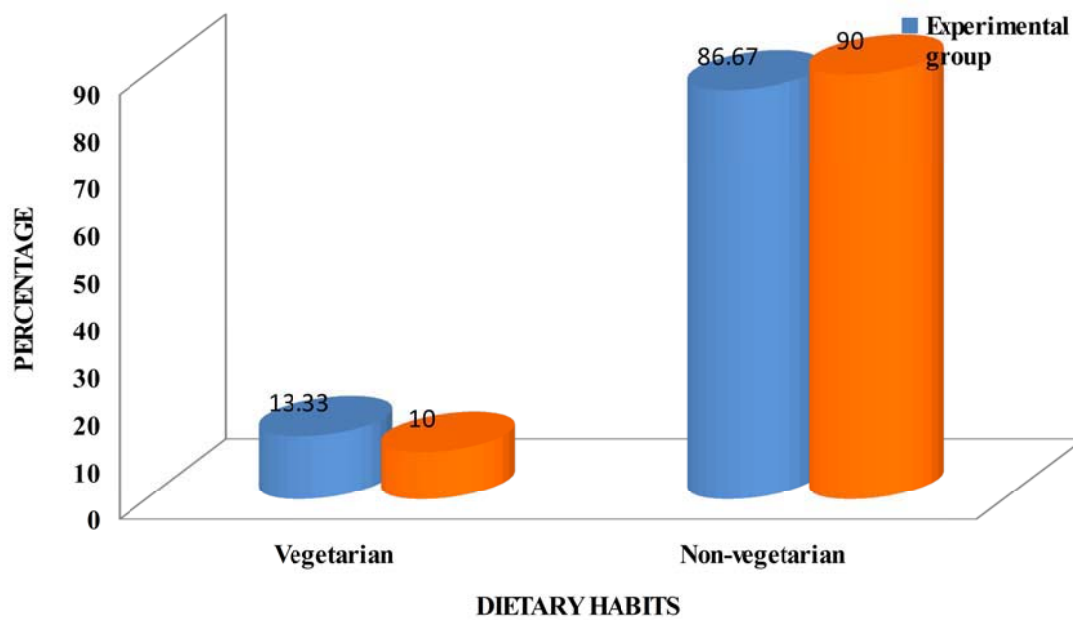
**Figure: 10 Percentage distribution of demographic variables of marital status in experimental and control group**



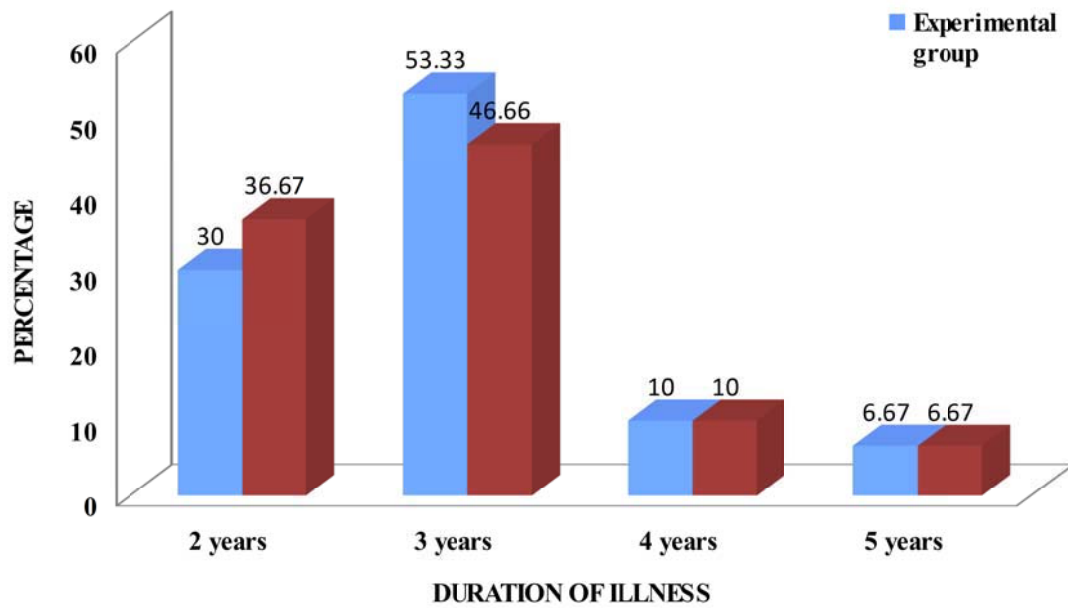
**Figure: 11 Percentage distribution of demographic variables of type of family in experimental and control group.**



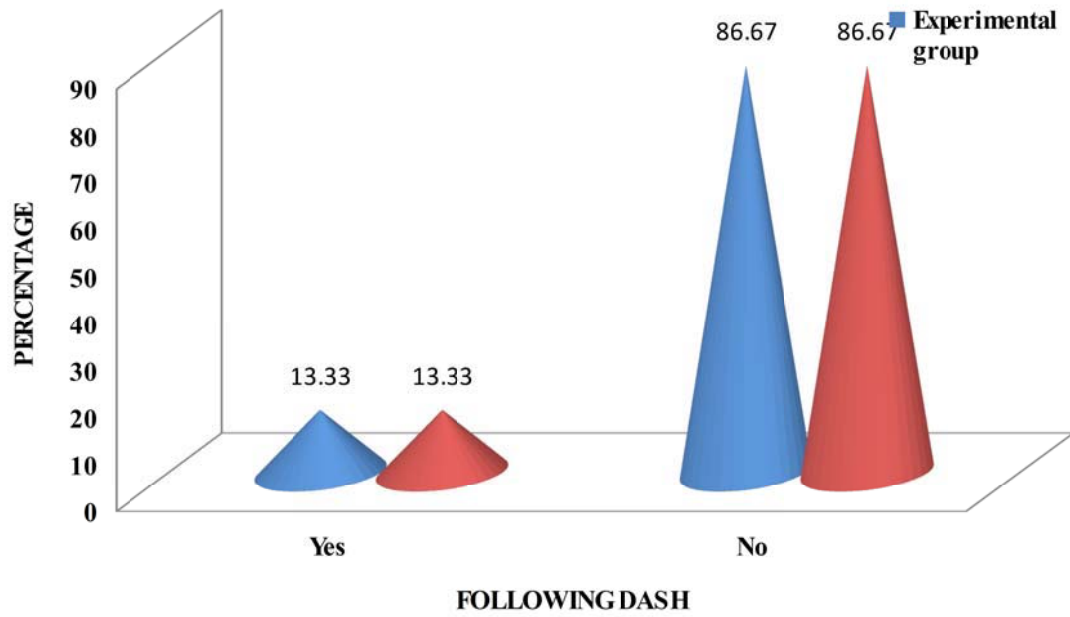
**Figure: 12 Percentage distribution of demographic variables of number of children in experimental and control group**



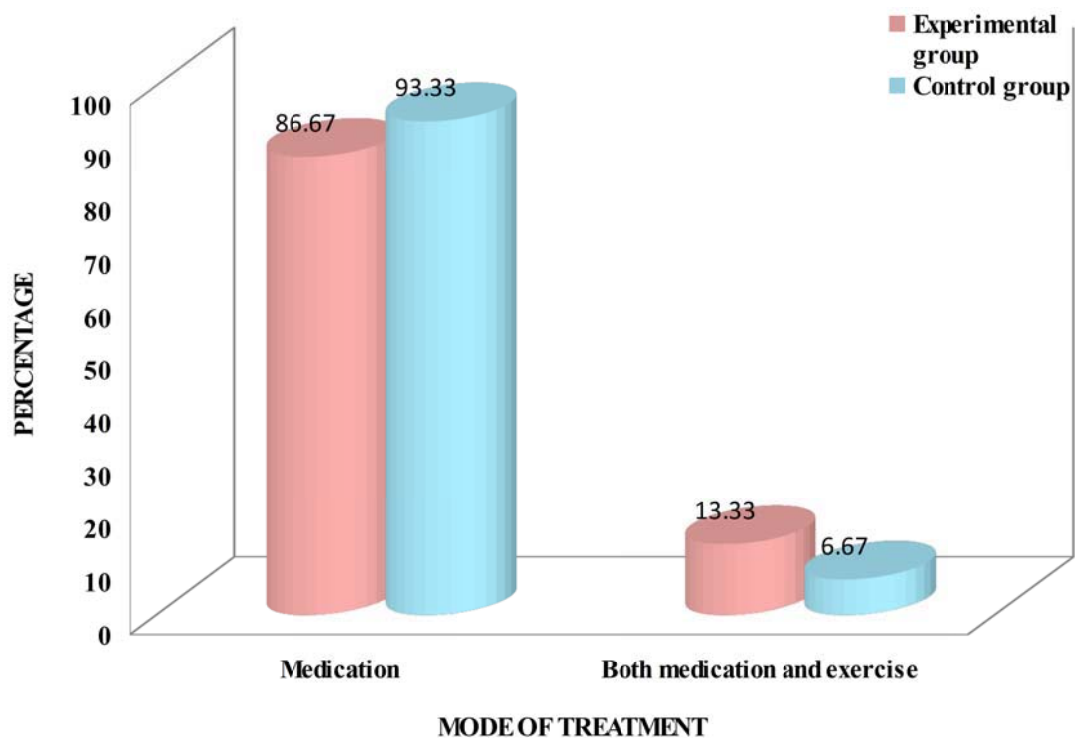
**Figure: 13 Percentage distribution of demographic variables of dietary habits in experimental and control group.**



**Figure: 14 Percentage distribution of demographic variables of duration of illness in experimental and control group.**



**Figure: 15 Percentage distribution of demographic variables of following DASH in experimental and control group.**



**Figure: 16 Percentage distribution of demographic variables of mode of treatment in experimental and control group**

**Section B: Assessment of the level of quality of life among hypertensive patients in experimental group and control group.**



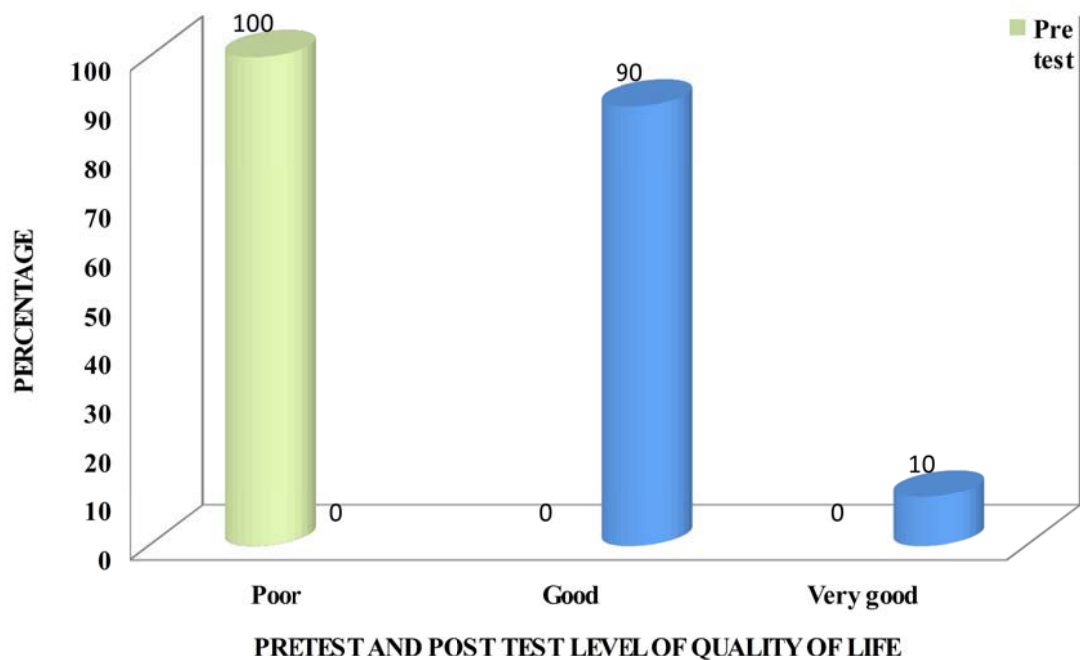
**Table: 2 Frequency and percentage distribution of the pre test and post test level of quality of life among hypertensive patients in experimental group.**

**(N=30)**

S.N O	EXPERIMENTAL GROUP	LEVEL OF QUALITY OF LIFE					
		POOR		GOOD		VERY GOOD	
		f	%	f	%	f	%
1	Pre test	30	100	0	0	0	0
2	Post test	0	0	27	90	3	10

Table 2 reveals the frequency and percentage distribution of the pre test and post test level of quality of life among hypertensive patients in experimental group.

With respect to the pre test level of quality of life of hypertensive patients in experimental group, out of 30 samples all 30 (100%) of them were having poor quality of life and none of them were having good and very good quality of life. And in the post test, out of 30 samples 27 (90%) of them were having good quality of life, 3 (10%) of them were having very good quality of life, and none of them were having poor quality of life.



**Figure: 17 Percentage distribution of the pre test and post test level of quality of life among hypertensive patients in experimental.**

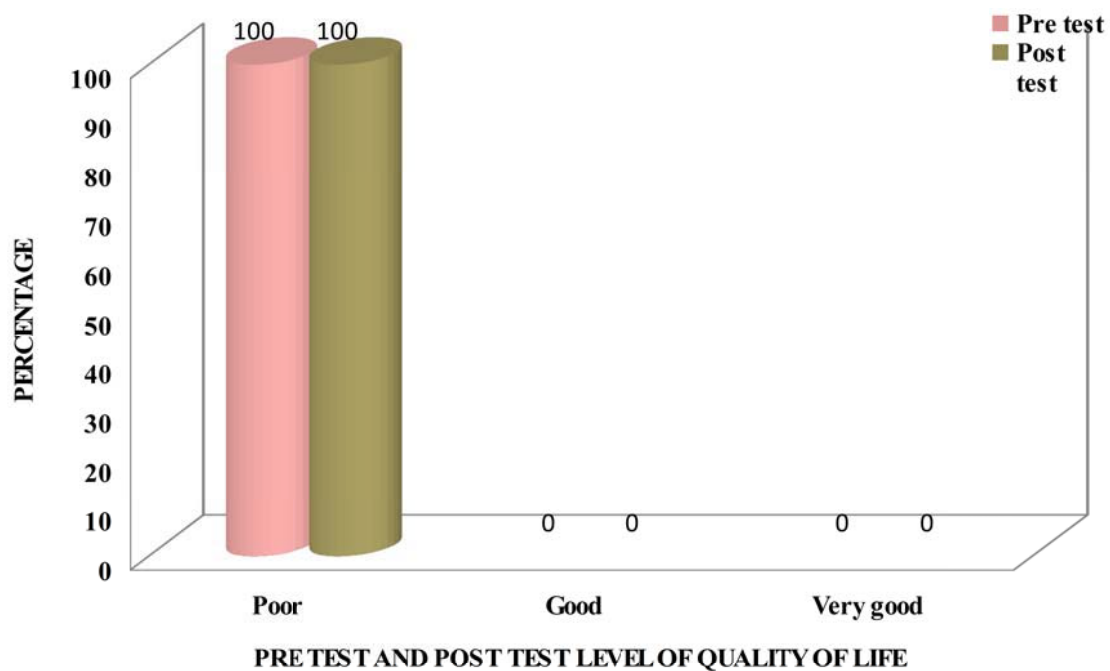
**Table: 3 Frequency and percentage distribution of the pre test and post test level of quality of life among hypertensive patients in control group.**

(N=30)

S.N O	CONTROL GROUP	LEVEL OF QUALITY OF LIFE					
		POOR		GOOD		VERY GOOD	
		f	%	f	%	f	%
1	Pre test	30	100	0	0	0	0
2	Post test	30	100	0	0	0	0

Table 3 reveals the frequency and percentage distribution of the pre test and post test level of quality of life among hypertensive patients in control group.

With respect to the pre test and post test level of quality of life of hypertensive patients in control group, out of 30 samples all 30 (100%) of them were having poor quality of life and none of them were having good and very good quality of life.



**Figure: 18 Percentage distribution of the pre test and post test level of quality of life among hypertensive patients in control group.**

**Section C: Comparison of the effectiveness of zone therapy on quality of life among hypertensive patients in experimental group and control group.**

**Table: 4 Mean and standard deviation of the pre test level of quality of life among hypertensive patients in experimental group and control group.**

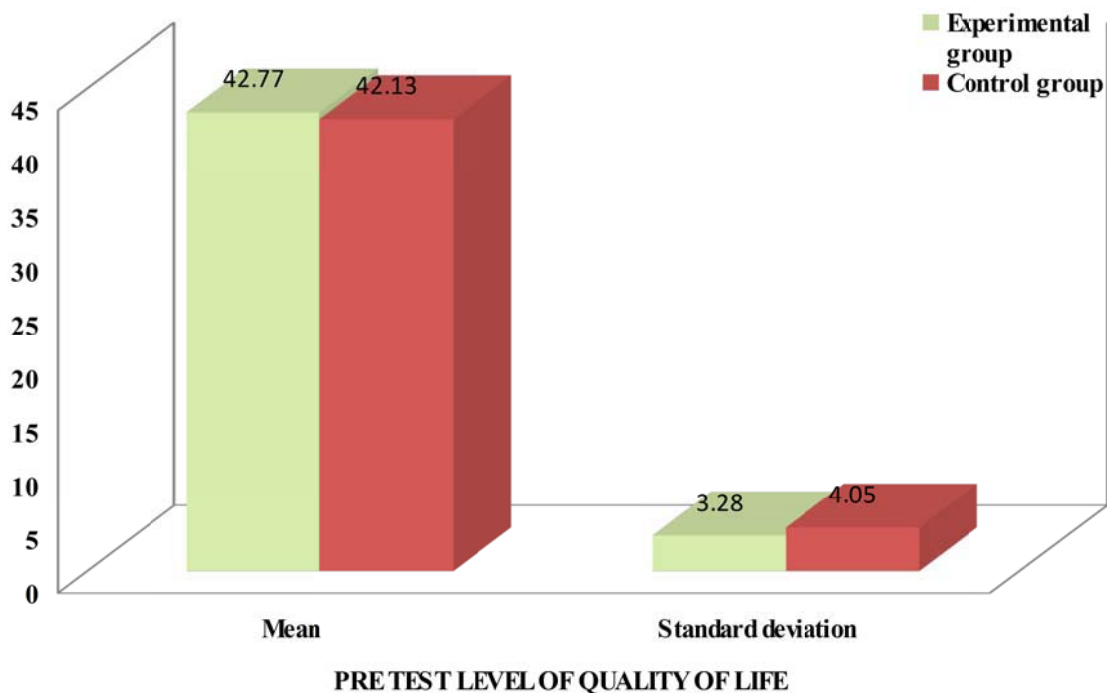
(N=60)

<b>S.N O</b>	<b>PRE TEST</b>	<b>EXPERIMENTAL GROUP</b>	<b>CONTROL GROUP</b>	<b>'t' Value</b>
<b>1</b>	<b>Mean</b>	<b>42.76</b>	<b>42.14</b>	<b>0.66 # NS</b>
<b>2</b>	<b>Standard Deviation</b>	<b>3.28</b>	<b>4.05</b>	

# NS = Nil significance

Table 4 reveals the mean and standard deviation of the pre test level of quality of life among hypertensive patients in experimental group and control group.

In pre test experimental group showed a mean value of 42.76 with the standard deviation of 3.28 and the control group showed a mean value of 42.14 with the standard deviation of 4.05. The calculated 't' value was 0.66.



**Figure: 19 Mean and standard deviation of the pre test level of quality of life among hypertensive patients in experimental group and control group.**

**Table: 5 Mean and standard deviation of the post test level of quality of life among hypertensive patients in experimental group and control group.**

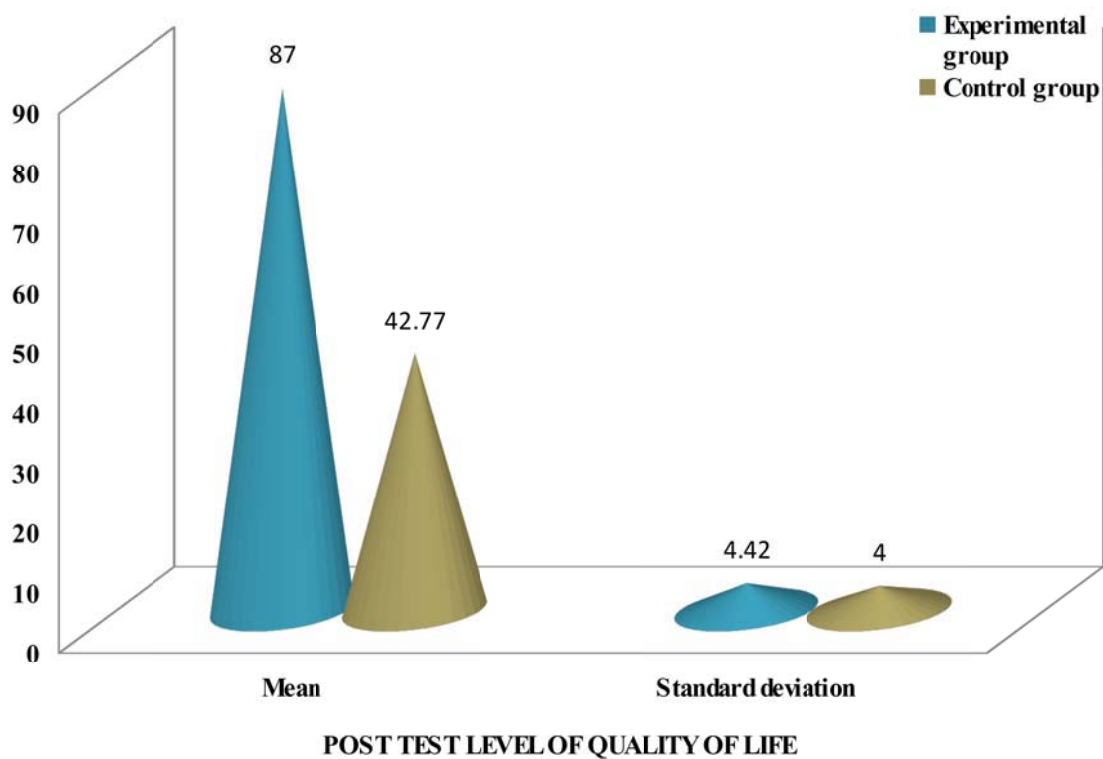
(N=60)

S.N O	POST TEST	EXPERIMENTAL GROUP	CONTROL GROUP	't' Value
1	Mean	87	42.76	40.66* S
2	Standard Deviation	4.42	3.99	

\* S = Significance       $p < 0.05$

Table 5 reveals the mean and standard deviation of the post test level of quality of life among hypertensive patients in experimental group and control group.

In post test experimental group showed a mean value of 87 with the standard deviation of 4.42 and the control group showed a mean value of 42.76 with the standard deviation of 3.99. The calculated 't' value was 40.66 at  $P < 0.05$  level. Hence the stated hypothesis "The mean post test level of quality of life in experimental group will be significantly higher than the mean post test level of quality of life in control group" was accepted.



**Figure: 20 Mean and standard deviation of the post test level of quality of life among hypertensive patients in experimental group and control group.**

**Table: 6 Mean and standard deviation of pre test and post test level of quality of life among hypertensive patients in experimental group.**



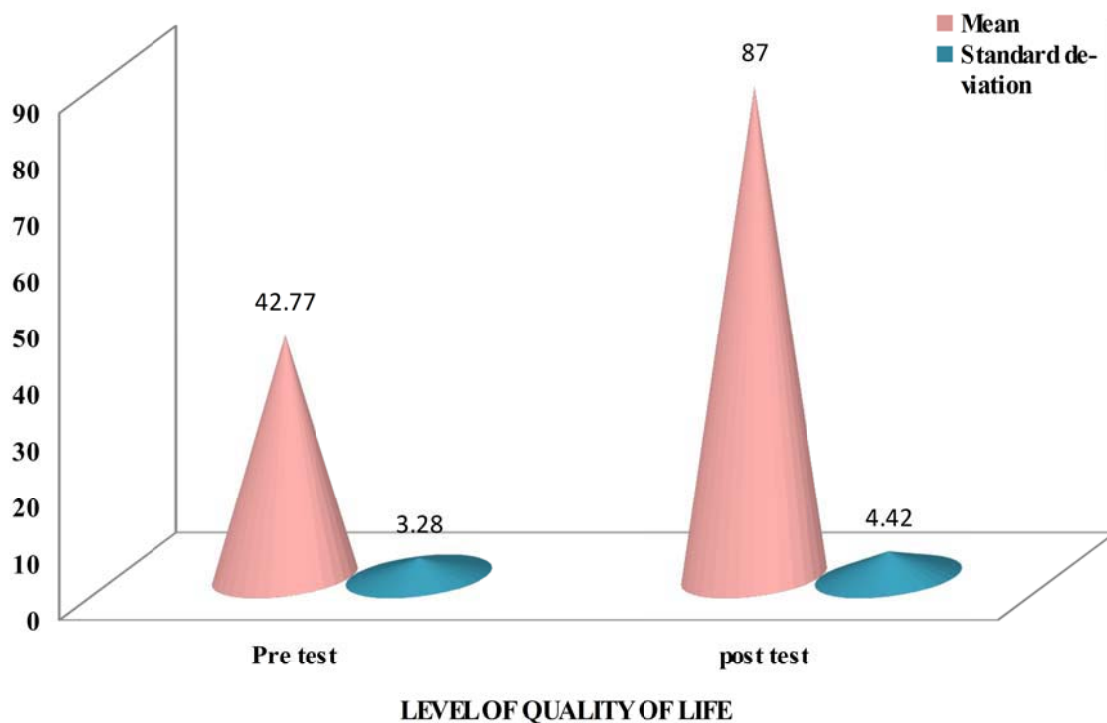
(N=30)

S.N O	GROUP	PRE TEST		POST TEST		Mean Difference	't' Value
		MEAN	SD	MEAN	SD		
1	Experimental group	42.76	3.28	87	4.42	44.23	44.02 * S

\*S = Significance                      p<0.05

Table 6 reveals the mean and standard deviation of pre test and post test level of quality of life among hypertensive patients in experimental group.

The experimental group showed a mean value of 42.76 with the standard deviation of 3.28 in the pre test and a mean value of 87 with the standard deviation of 4.42 in the post test. The mean difference was 44.23. The calculated "t" value was 44.02 at P< 0.05 level. Hence the stated hypothesis "The mean post test level of quality of life in experimental group will be significantly higher than their mean pre test level of quality of life" was accepted.



**Figure: 21 Mean and standard deviation of pre test and post test level of quality of life among hypertensive patients in experimental group.**

**Section D: Association between the post test level of quality of life among hypertensive patients in experimental group and control group.**



	employee e. Self employed	-	-	0	0	0		
		-	-	13	43.33	1	3.33	
6	<b>Monthly income</b>							
	a. Below Rs.3000	-	-	2	6.67	0	0	13.33* df=3 S
	b. Rs.3001 – Rs.6000	-	-	22	73.33	0	0	
	c. Rs.6001 – Rs.9000	-	-	2	6.67	2	6.67	
	d. Above Rs.9001	-	-	1	3.33	1	3.33	
7	<b>Marital status</b>							3.80# df=1
	a. Unmarried	-	-	1	3.33	1	3.33	NS
	b. Married	-	-	26	86.67	2	6.67	
8	<b>Type of family</b>							0.015# df=1
	a. Joint family	-	-	10	33.33	1	3.33	NS
	b. Nuclear family	-	-	17	56.67	2	6.67	
9	<b>Number of children</b>							
	a. None	-	-	2	6.67	1	3.33	3.80# df=3 NS
	b. 1	-	-	3	10	1	3.33	
	c. 2	-	-	6	20	0	0	
	d. More than 2	-	-	16	53.33	1	3.34	
10	<b>Dietary habits</b>							8.20* df=1
	a. Vegetarian	-	-	2	6.67	2	6.67	S
	b. Non-vegetarian	-	-	25	83.33	1	3.33	
11	<b>Duration of illness</b>							
	a. 2 years	-	-	6	20	3	10	7.77# df=3 NS
	b. 3 years	-	-	16	53.33	0	0	
	c. 4 years	-	-	3	10	0	0	
	d. 5 years	-	-	2	6.67	0	0	
12	<b>Following DASH</b>							8.2051* df=1
	a. Yes	-	-	2	6.67	2	6.67	S
	b. No	-	-	25	83.33	1	3.33	
13	<b>Mode of treatment</b>							8.20* df=1
	a. Medication	-	-	25	83.33	1	3.33	S
	b. Both medication and exercise	-	-	2	6.67	2	6.67	

**\*S – Significant # NS – Nil significant p<0.05**

Table 7 reveals the association between the post test level of quality of life among hypertensive patients with their selected demographic variables like age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment in experimental group.

The findings showed that there was a significant association between the post test level of quality of life among hypertensive patients in experimental group with their selected demographic variables age, education, monthly income, dietary habits, following DASH, and mode of treatment and there was no significant association between the post test level of quality of life among hypertensive patients with their selected demographic variables sex, religion, occupation, marital status, type of family, number of children, and duration of illness.

**Table :8 Association between the post test level of quality of life among hypertensive patients with their selected demographic variables like age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, following DASH, and mode of treatment in control group.**

(N=30)

S.N o	DEMOGRAPHIC VARIABLES	QUALITY OF LIFE			$\chi^2$
		POOR	GOOD	VERY GOOD	

		f	%	f	%	f	%	
1.	<b>Age</b>							
	a. 35 – 45 years	2	6.67	-	-	-	-	0#
	b. 46 – 55 years	9	30	-	-	-	-	df=0
	c. 56 – 65 years	13	43.33	-	-	-	-	NS
	d. 66 – 70 years	6	20	-	-	-	-	
2	<b>Sex</b>							
	a. Male	19	63.33	-	-	-	-	0#
	b. Female	11	36.67	-	-	-	-	df=0
								NS
3	<b>Religion</b>							
	a. Hindu	29	96.67	-	-	-	-	0#
	b. Christian	1	3.33	-	-	-	-	df=0
	c. Muslim	0	0	-	-	-	-	NS
	d. Others	0	0	-	-	-	-	
4	<b>Education</b>							
	a. Illiterate	18	60	-	-	-	-	0#
	b. Primary education	7	23.33	-	-	-	-	df=0
	c. Higher secondary education	3	10	-	-	-	-	NS
	d. Diploma or degree education	2	6.67	-	-	-	-	
5	<b>Occupation</b>							
	a. Unemployed	3	10	-	-	-	-	0#
	b. coolie	13	43.33	-	-	-	-	df=0
	c. Private employee	3	10	-	-	-	-	NS
	d. Government employee	0	0	-	-	-	-	
	e. Self employed	2	6.67	-	-	-	-	
6	<b>Monthly income</b>							
	a. Below Rs.3000	3	10	-	-	-	-	0#
	b. Rs.3001 – Rs.6000	18	60	-	-	-	-	df=0
	c. Rs.6001 – Rs.9000							

	d. Above Rs.9001	5	16.67	-	-	-	-	NS
		4	13.33	-	-	-	-	
7	<b>Marital status</b>							0# df=0
	a. Unmarried	30	100	-	-	-	-	NS
	b. Married	0	0	-	-	-	-	
8	<b>Type of family</b>							0# df=0
	a. Joint family	17	56.67	-	-	-	-	NS
	b. Nuclear family	13	43.33	-	-	-	-	
9	<b>Number of children</b>							0# df=0
	a. None	4	13.33	-	-	-	-	NS
	b. 1	3	10	-	-	-	-	
	c. 2	5	16.67	-	-	-	-	
	d. More than 2	18	60	-	-	-	-	
10	<b>Dietary habits</b>							0# df=0
	a. Vegetarian	27	90	-	-	-	-	NS
	b. Non-vegetarian	3	10	-	-	-	-	
11	<b>Duration of illness</b>							0# df=0
	a. 2 years	11	36.67	-	-	-	-	NS
	b. 3 years	14	46.67	-	-	-	-	
	c. 4 years	3	10	-	-	-	-	
	d. 5 years	2	6.66	-	-	-	-	
12	<b>Following DASH</b>							0# df=0
	a. Yes	3	10	-	-	-	-	NS
	b. No	27	90	-	-	-	-	
13	<b>Mode of treatment</b>							0# df=0
	a. Medication	28	93.33	-	-	-	-	NS
	b. Yoga / Exercise	0	0	-	-	-	-	
	c. Both	2	6.67	-	-	-	-	

# NS – Nil significant

Table 8 reveals the association between the post test level of quality of life among hypertensive patients with their selected demographic variables like age, sex, religion, education, occupation, monthly income, marital status, type of family, number of

children, dietary habits, duration of illness, following DASH, and mode of treatment in control group.

The findings showed that there was no significant association between the post test level of quality of life among hypertensive patients in control group with their selected demographic variables age, sex, religion, education, occupation, monthly income, marital status, type of family, number of children, dietary habits, duration of illness, duration of treatment, following DASH, and mode of treatment.



## **CHAPTER V**

### **DISCUSSION**

This chapter deals with the discussion of the result of the data analysis to evaluate the effectiveness of zone therapy on quality of life among patients with hypertension.

The discussion is based on the objectives of the study and the hypotheses specified in the study.

#### **MAJOR FINDINGS OF THE STUDY WERE,**

On analysis of frequency and percentage distribution of demographic variables in age out of 30 samples, majority 15 (50%) of them were in the age group of 56 – 65 years, 3 (10%) of them were in the age group of 35 – 45 years, 8 (26.67%) of them were in the age group of 46 – 55 years, and 4 (13.33%) of them were in the age group of 66 – 70 years whereas in the control group out of 30 samples, majority 13 (43.33%) of them were in the age group of 56 – 65 years, 2 (6.67%) of them were in the age group of 35 – 45 years, 9 (30%) of them were in the age group of 46 – 55 years, and 6 (20%) of them were in the age group of 66 – 70 years.

With regard to the variable sex in experimental group, out of 30 samples, majority 18 (60%) of them were males and 12 (40%) of them were females whereas in the control group out of 30 samples, majority 19 (63.33%) of them were males and 11 (36.67%) of them were females.

With respect to the variable religion in experimental group, out of 30 samples, majority 28 (93.33%) of them were Hindus, 2 (6.67%) of them were Christians, and none of them were Muslims and belong to other category whereas in the control group out of 30 samples, majority 29 (96.67%) of them were Hindus, 1 (3.33%) of them was Christians, and none of them were Muslims and belong to other category.

Pertaining to the variable education in experimental group, out of 30 samples, majority 16 (53.34%) of them were illiterates, 9 (30%) of them were having primary education, 4 (13.33%) of them were having higher secondary education and 1 (3.33%) of them was having diploma or degree education whereas in the control group out of 30 samples, majority 18 (60%) of them were illiterates, 7 (23.33%) of them were having primary education, 3 (10%) of them were having higher secondary education and 2 (6.67%) of them were having diploma or degree education.

With regard to the variable occupation in experimental group, out of 30 samples, majority 14 (46.67%) of them were self employed, 11 (36.67%) of them were coolie workers, 3 (10%) of them were private employees, 2 (6.66%) of them were unemployed, and none of them were government employees whereas in the control group out of 30 samples, majority 13 (43.33%) of them were coolie workers, 11 (36.67%) of them were self employed, 3 (10%) of them were unemployed, 3 (10%) of them were private employees and none of them were government employees.

Concerning the variable monthly income in experimental group, out of 30 samples majority 22 (73.33%) of them were having the income of Rs.3001 – Rs.6000, 2 (6.67%) of them having the income below Rs.3000, 4 (13.33%) of them were having the

income of Rs.6001 – Rs.9000, and 2 (6.67%) of them were having the income of above Rs.9001 whereas in the control group out of 30 samples majority 18 (60%) of them were having the income of Rs.3001 – Rs.6000, 3 (10%) of them having the income below Rs.3000, 5 (16.67%) of them were having the income of Rs.6001 – Rs.9000, and 4 (13.33%) of them were having the income of above Rs.9001.

With regard to the variable marital status in experimental group, out of 30 samples, majority 28 (93.33%) of them were married and 2 (6.67%) of them were unmarried whereas in the control group out of 30 samples, all 30 (100%) of them were married and none of them were unmarried.

Pertaining to the variable type of family in experimental group, out of 30 samples, majority 19 (63.33%) of them were from nuclear family and 11 (36.67%) of them were from joint family whereas in the control group out of 30 samples, majority 17 (56.67%) of them were from joint family and 13 (43.33%) of them were from nuclear family.

With respect to the variable number of children in experimental group, out of 30 samples majority 17 (56.67%) of them were having more than 2 children, 3 (10%) of them were having no children, 4 (13.33%) of them were having one child and 6 (20%) of them were having 2 children whereas in the control group out of 30 samples majority 18 (60%) of them were having more than 2 children, 4 (13.33%) of them were having no children, 3 (10%) of them were having one child and 5 (16.67%) of them were having 2 children.

Concerning the variable dietary habits in experimental group, out of 30 samples majority 26 (86.67%) of them were non- vegetarian and 4 (13.33%) of them were

vegetarian whereas in the control group out of 30 samples majority 27 (90%) of them were non- vegetarian and 3 (10%) of them were vegetarian.

With regard to the variable duration of illness in experimental group, out of 30 samples majority 16 (53.33%) of them were suffering for 3 years, 9 (30%) of them were suffering for 2 years, 3 (10%) of them were suffering for 4 years, and 2 (6.67%) of them were suffering for 5 years whereas in the control group out of 30 samples majority 14 (46.66%) of them were suffering for 3 years, 11 (36.67%) of them were suffering for 2 years, 3 (10%) of them were suffering for 4 years, and 2 (6.67%) of them were suffering for 5 years.

With respect to the variable following DASH in experimental group, out of 30 samples majority 26 (86.67%) of them were not following DASH and 4 (13.33%) of them were following DASH whereas in the control group out of 30 samples majority 26 (86.67%) of them were not following DASH and 4 (13.33%) of them were following DASH.

Pertaining to the variable mode of treatment in experimental group, out of 30 samples majority 26 (86.67%) of them were taking medication, and 4 (13.33%) of them were following both medication and exercise whereas in the control group out of 30 samples majority 28 (93.33%) of them were taking medication and 2 (6.67%) of them were following both medication and exercise.

On analysis of the mean and standard deviation in post test experimental group showed a mean value of 87 with the standard deviation of 4.42 and the control group

showed a mean value of 42.76 with the standard deviation of 3.99. The calculated 't' value was 40.66 at  $P < 0.05$  level. This shows improvement in quality of life.

There was a significant association between the post test level of quality of life among hypertensive patients with their selected demographic variables age, education, monthly income, dietary habits, following DASH, and mode of treatment and there was no significant association between the post test level of quality of life among hypertensive patients with their selected demographic variables sex, religion, occupation, marital status, type of family, number of children, and duration of illness.

**The first objective was to assess the pre test and post test level of quality of life among patients with hypertension in experimental group and control group.**

On analysis of the pre test level of quality of life of hypertensive patients in experimental group, out of 30 samples all 30 (100%) of them were having poor quality of life and none of them were having good and very good quality of life. And in the post test, out of 30 samples 27 (90%) of them were having good quality of life, 3 (10%) of them were having very good quality of life, and none of them were having poor quality of life.

On analysis of the pre test and post test level of quality of life of hypertensive patients in control group, out of 30 samples all 30 (100%) of them were having poor quality of life and none of them were having good and very good quality of life.

The above result was supported by a study conducted by **Barbar Kunz et al (2007)** on effectiveness of zone therapy on 48 hypertensive patients. The study indicates that hypertensive patients experienced significant improvement in the quality of life.

**The second objective was to find out the effectiveness of zone therapy on quality of life among patients with hypertension in experimental group.**

On analysis of the post test the experimental group showed a mean value of 87 with the standard deviation of 4.42 and the control group showed a mean value of 42.76 with the standard deviation of 3.99. The calculated 't' value was 40.66 at  $P < 0.05$  level. This shows improvement in quality of life.

Hence the stated hypothesis "The mean post test level of quality of life in experimental group will be significantly higher than the mean post test level of quality of life in control group" was accepted.

The above result was supported by a study conducted by **Boston and jamiz (2002)** simple cross over design used to study the effect of zone therapy on quality of life of hypertensive patients. 20 samples were selected by using purposive sampling technique during experimental period patients received zone therapy for 1 hour per day for 7 days and in the control period patients did not received zone therapy for 7 days. The instruments used for data collection were demographic data, and WHO quality of life questionnaire. The data analyzed by using frequency, mean, standard deviation and ANOVA. The results of the study shown that the quality of life score in the experimental period after receiving zone therapy was statistically higher than the control period

( $P < .001$ ). So the study revealed that zone therapy can be used as a complementary therapy to improve the quality of life.

**The third objective was to compare the pre test and post test level of quality of life among patients with hypertension in experimental group.**

On analysis of the experimental group it showed a mean value of 42.76 with the standard deviation of 3.28 in the pre test and a mean value of 87 with the standard deviation of 4.42 in the post test. The mean difference was 44.23. The calculated “t” value was 44.02 at  $P < 0.05$  level. This shows improvement in quality of life.

Hence the stated hypothesis “The mean post test level of quality of life in experimental group will be significantly higher than their mean pre test level of quality of life” was accepted.

The above result was supported by a study conducted by **Mohammed nizam et al (2006)** to find out the effectiveness of foot reflexology on hypertensive patients in Korea. The foot reflexology was applied to the experimental group 3 times a week for 4 weeks 30 minutes each. For the data analysis conducted to verify the quality of life. After foot reflexology, the subjects in experimental group show significant improvement in quality of life. The results suggest that the foot reflexology is effective in improving the quality of life.

**The fourth objective was to associate the post test level of quality of life among patients with hypertension in experimental group and control group with their selected demographic variables.**

The chi square test findings showed that there was a significant association between the post test level of quality of life among hypertensive patients in experimental group with their selected demographic variables age, education, monthly income, dietary habits, following DASH, and mode of treatment and there was no significant association between the post test level of quality of life among hypertensive patients in experimental group with their selected demographic variables sex, religion, occupation, marital status, type of family, number of children, and duration of illness.

Hence the stated hypothesis “There will be a significant association between the post test level of quality of life among patients with hypertension in experimental and control group with their selected demographic variables” was accepted for the variables age, education, monthly income, dietary habits, following DASH, and mode of treatment and rejected for the variables sex, religion, occupation, marital status, type of family, number of children, and duration of illness.

The above result was supported by a study conducted by **Nessrin & Maxwell Heinrich (2001)** to assess the effect of foot reflexology on quality of life of hypertensive patients in Ohio territory hospital. The samples consisted of 143 inpatients (age, sex, occupation, duration of illness etc) and the tool included WHO quality of life questionnaire. Researchers noted a significant association with the variables occupation, duration of illness and marital status.



## **CHAPTER VI**

### **SUMMARY, CONCLUSION, IMPLICATION, LIMITATIONS AND RECOMMENDATIONS**

This chapter deals with summary, findings, conclusion, implications, limitations and recommendations, which creates a base for evidence based practice.

#### **SUMMARY**

High blood pressure termed “hypertension” is a condition that afflicts almost 1 billion people worldwide and is a leading cause of morbidity and mortality. More than 20% of Americans are hypertensive, and one third of these Americans are not even aware they are hypertensive. Therefore, this disease is sometimes called “silent killer”. The disease is usually asymptomatic until the damaging effects of hypertension such as stroke, myocardial infarction, renal dysfunction, visual problems etc are observed.

**(Richard E.klabunde, 2007)**

In general, quality of life (QOL) is the perceived quality of an individual's daily life, that is, an assessment of their well-being or lack thereof. This includes all emotional, social, and physical aspects of the individual's life. In health care, health-related quality of life (HRQOL) is an assessment of how the individual's well-being may be affected over time by a disease, disability, or disorder. **(wikipedia.com )**

The term quality of life (QOL) refers to the general well-being of individuals and societies. The term is used in a wide range of contexts, including the fields

of international development, healthcare, and politics. Quality of life should not be confused with the concept of standard of living, which is based primarily on income. Instead, standard indicators of the quality of life include not only wealth and employment but also the built environment, physical and mental health, education, recreation and leisure time, and social belonging. **(Pubmed.com )**

Association of physicians of India conducted a survey and concluded urban areas in the counts had a significantly higher incidence of hypertension 27-37% as compared to rural areas 2-8%. In India about 20% of adults' population suffers from hypertension making it the country's highest silent killer from this almost 90% of the cases fall into the category of primary essential hypertension **(Agarwal ,2001)**

Three hundred and eighty five camps in rural areas in Tamilnadu and 7.35 lakhs people were screened and found out that 5.02% of population was affected with hypertension **(Tamilnadu Government public and preventive medicine, 2003)**

The quality of life of hypertensive patients is not good. There are many ways to improve the quality of life of hypertensive patients. Among one is zone therapy. Zone therapy is a well known complementary therapy which claims to help the body achieve homeostasis. It is believed that pressing specific areas on the feet related to specific glands or organs of the body can help these glands and organs to function at their peak, allowing the body to heal itself. The principle difference between massage and touch and zone therapy is that zone therapy provides not only the relaxation effect obtained from massage or touch is said to also improve body's immunity contributing to healing process **(Byers 2001; Dougans ,2002)**

Zone therapy has been scientifically researched in many studies to explore the claimed benefits. Some studies have supported its ability to reduce anxiety and pain. There has been scientific evidence to support the claim that zone therapy can reduce blood pressure and serum lipids, and can improve the quality of life in patients with hypertension. (Hodgson 2000; Milligan et al 2002; Park & Cho 2004)

**The Objectives of the study were:**

- To assess the pre test and post test level of quality of life among patients with hypertension in experimental group and control group.
- To find out the effectiveness of zone therapy on quality of life among patients with hypertension in experimental group
- To compare the pre test and post test level of quality of life among patients with hypertension in experimental group.
- To associate the post test level of quality of life among patients with hypertension in experimental group and control group with their selected demographic variables.

**The Hypotheses formulated were:**

**H1:** The mean post test level of quality of life in experimental group will be significantly higher than the mean post test level of quality of life in control group.

**H2:** The mean post test level of quality of life in experimental group will be significantly higher than their mean pre test level of quality of life.

**H3:** There will be a significant association between the post test level of quality of life among patients with hypertension in experimental and control group with their selected demographic variables.

**The assumptions of the study were:**

- Hypertensive patients may not have adequate quality of life.
- Zone therapy may improve the quality of life of hypertensive patients.
- Quality of life may differ from individual to individual.

The review of literature collected for the study provided a strong basis for the study. It provided the basis for creating conceptual frame work and formation of tool. It was categorized under three headings.

Section A: Studies related to prevalence and risk factors of hypertension.

Section B: Studies related to zone therapy on hypertension.

Section C: Studies related to zone therapy on quality of life of hypertensive patients.

The conceptual frame work of this study was based on Modified Wiedenbach's Helping Art of Clinical Nursing Theory and it provided a complete frame work for achieving the central purpose of the study. The research methodology adopted for the study was quasi experimental pre-test and post-test with control group design.

The content validity of the tool was established on the basis of opinion given by four nursing experts and one medical expert in the field of medical surgical nursing.

Pilot study was conducted in perumpattur village of Tirunelveli district. The pilot study findings showed that there was a significant difference between the post test level of quality of life of hypertensive patients in experimental group and control group at  $P < 0.05$  level.

The village selected for data collection was puliampatti and perumpattur. In that puliampatti was allotted for experimental group and perumpattur was allotted for control group. The period of data collection was 30 days. Purposive sampling technique was used to select samples for experimental group and control group. The Sample size for the study was 60. Among 60 samples, 30 persons were in experimental group and another 30 persons were in control group. The collected data was analyzed and interpreted based on the objectives using descriptive and inferential statistics.

The study findings revealed that there was a significant improvement in the quality of life of hypertensive patients after application of zone therapy in the experimental group.

There was a significant association between the post test level of quality of life among hypertensive patients with their selected demographic variables age, education, monthly income, dietary habits, following DASH, and mode of treatment and there was no significant association between the post test level of quality of life among hypertensive patients with their selected demographic variables sex, religion, occupation, marital status, type of family, number of children, and duration of illness.

## **CONCLUSION**

This study assessed the effectiveness of zone therapy on quality of life among patients with hypertension. The study findings revealed that there was a significant improvement in the quality of life of hypertensive patients after application of zone therapy in the experimental group. On the basis of the study, the researcher concluded that application of zone therapy to the hypertensive patients to improve the quality of life. Zone therapy is an effective; easy and potentially risk free intervention.

## **IMPLICATIONS**

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

## **NURSING PRACTICE**

- The nurses have a vital role in providing safe and effective nursing interventions to enhance the quality of life of hypertensive patients.
- Zone therapy can be facilitated by motivating the nurses to have an in depth knowledge regarding non pharmacological therapies to improve the quality of life.
- Develop skill in providing efficient nursing interventions for improving the quality of life and teach the patients about the effectiveness of zone therapy quality of life.
- Nurses need to practice evidence based approach while giving care to the hypertensive patients.

## **NURSING EDUCATION**

Before nurses enter into their practice, they need to have strong foundation in terms of education. Nurse educators not only have a role to educate the students but also to educate the staff nurses in order to prepare them and update their knowledge, to enhance the application of theory into practice. The education in the clinical area should be provided in the form of:

- ☆ Incorporate zone therapy in the curriculum of nursing with clinical experience.
- ☆ Motivate the nursing students to follow zone therapy to improve the quality of life of hypertensive patients.
- ☆ Update the knowledge of student nurses with in-service education programs emphasizing various measures to improve the quality of life of patients.
- ☆ Make use of available studies related to zone therapy and its benefits.

#### **NURSING ADMINISTRATION**

- ✓ Conduct in-service education programs and continuing education programs related to zone therapy on improvement of quality of life of hypertensive patients.
- ✓ Collaborate with governing bodies for the formulation of standard policies and protocols regarding zone therapy to improve the quality of life of hypertensive patients.
- ✓ Provide more opportunities for nurses to attend training programs in zone therapy on quality of life of hypertensive patients.
- ✓ Update the knowledge of staff nurses with in-service education programs emphasizing various measures to improve the quality of life of hypertensive patients.

- ✓ Arrange and conduct workshops, conferences, seminars on zone therapy on improvement of quality of life of hypertensive patients.

## **NURSING RESEARCH**

- ❖ Nurse researcher can disseminate the findings of the studies through conference, seminar and publishing in professional journals to the Medical Surgical nursing staffs.
- ❖ Nurse researcher can encourage conducting further researches related to zone therapy intervention on other psychological parameters.
- ❖ The findings of the research study would help in building and strengthening the body of knowledge of zone therapy.
- ❖ As a nurse researcher, promote more research on effectiveness of zone therapy on other systemic illness.
- ❖ Evidence based nursing practice must take higher profile in order to increase the knowledge about zone therapy intervention for hypertensive patients.

## **LIMITATIONS**

During the period of study the limitations faced by the investigator were as follows,

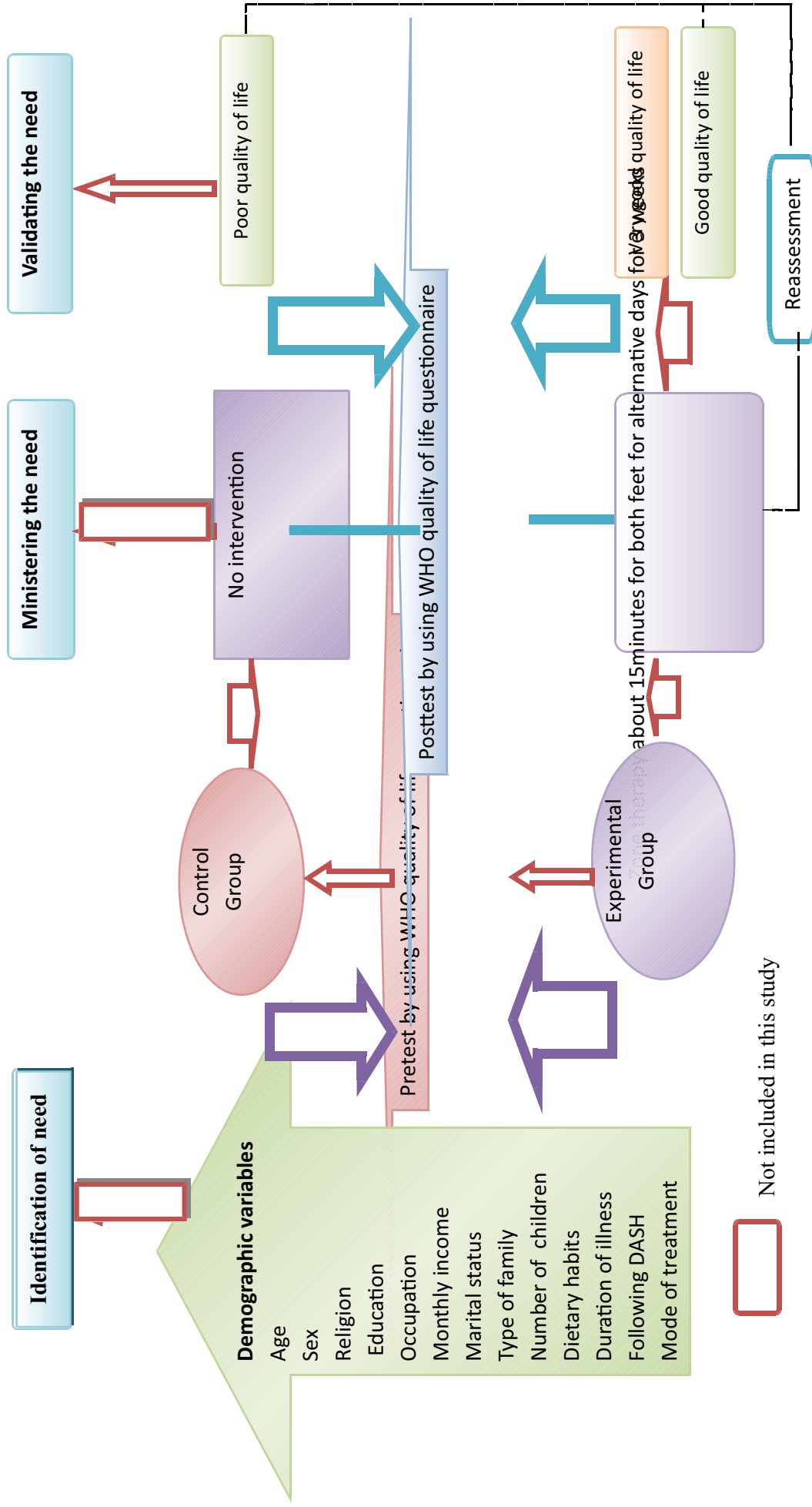
- Only limited literatures and studies were obtained from the Indian context.
- Due to time constraints, the investigator was unable to take larger samples for the study.

## **RECOMMENDATIONS**

Based on the findings of the present study the following recommendations are made,



- ↳ A similar study can be conducted with large samples for better generalisation.
- ↳ A study can be conducted to assess the level of knowledge and practice of nurses with regard to zone therapy in improving the quality of life of hypertensive patients.
- ↳ A comparative study can be conducted by using zone therapy and aroma therapy on improvement of quality of life of hypertensive patients.
- ↳ The same study can be repeated to assess the effectiveness of zone therapy to improve the quality of life of secondary hypertensive patients admitted in hospitals.



**Figure 1: Modified Ernestine Widenbach Helping Art of Clinical Nursing Theory Model (1964)**

**Figure 1: Modified Ernestine Widenbach Clinical Nursing Practice Model (1964)**

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## APPENDIX – A

# LETTER SEEKING AND GRANTING PERMISSION FOR CONDUCTING THE STUDY



## SRI K. RAMACHANDRAN NAIDU COLLEGE OF NURSING

Approved by Govt. of Tamilnadu and Indian Nursing Council / T.N.C  
Affiliated to the Tamilnadu Dr. M.G.R. Medical University

K.R. Naidu Nagar - 627 753, Paruvakudi Village, Post Bag No.1, Karivalam (via)  
Sankarankovil (Tk), Tirunelveli (Dt), Ph. : 04636 - 260950, Fax : 04636 - 260377.  
E - Mail : srikncon@yahoo.com Web : srikmaiducollegeofnursing.org

To

The Medical Officer,  
Primary Health Centre,  
Karivalamvanthanallur,  
Tirunelveli.

Respected Sir/Madam,

**Mrs.Jebakani Princes.G** is a bonafide student of our college studying in M.Sc (N) programme. As a partial fulfillment of the university requirement for the award of the M.Sc (N) degree, she needs to conduct research project.

Her chosen research project is as follows “**A study to assess the effectiveness of Zone therapy on Quality of life among patients with hypertension in selected village at Tirunelveli**”.

She will abide by the rules and regulations of the village home and adhere to the policies during her period of data collection. Permission may kindly be granted to her for conduction of the study at your village. The plan for conducting research study is from 01.03.2015 to 31.03.2015.

Further details of the proposal project will be furnished by the student personally, confidentiality will be ensured in the research project.

Thanking you

*Permitted*  
*B. D. D.*  
MEDICAL OFFICER  
Govt. Primary Health Centre  
Karivalamvanthanallur

Yours faithfully,  
*S. Ramachandran*  
Principal  
Sri K. Ramachandran Naidu  
College of Nursing  
K.R. Naidu Nagar - 627 753, Karivalam (Via)  
Sankarankovil (T.K.) Tirunelveli Dt.,



## **APPENDIX – B**

### **LETTER SEEKING EXPERT’S OPINION FOR CONTENT VALIDITY**

From  
Mrs.G.Jebakani princes,  
M.Sc (Nursing) II year,  
Sri.K.Ramachandran Naidu College of Nursing,  
Karivalam via, Sankarankovil.  
Thirunelveli District -627753.

To

**Subject: Seeking Validation of tool and content validity.**

Respected Sir/Madam,

I am M.Sc Nursing Ilyear student studying in Sri.K.Ramachandran Naidu College of Nursing, Sankarankoil, under the Tamilnadu Dr.MGR Medical University working on dissertation titled, **“A study to assess the effectiveness of zone therapy on quality of life among patients with hypertension in selected villages at Tirunelveli”**. The dissertation is to be submitted to the Tamilnadu Dr.MGR Medical University, as a partial fulfillment for the requirement of M.Sc nursing degree.Hence I request you to kindly evaluate the tool items and give your valuable opinion and suggestions for improvement of the tool. I would be highly obliged and thankful to hear from you.

Thanking you in anticipation.

Yours sincerely,

(G.Jebakani Princes)

Enclosures:


1. Statement of the problem
2. Research tool
3. Scoring key
4. Self addressed envelop

**APPENDIX – C**  
**CONTENT VALIDITY CERTIFICATE**

**CONTENT VALIDITY CERTIFICATE**

I **DR. T.K. SENTHIL KUMAR MD** hereby certify that I have validated the tool of Mrs.G.Jebakani princess II year M.Sc (nursing) student of Sri.K.Ramachandran Naidu College of nursing Sankarankovil who is undertaking a study entitled “A study to assess the effectiveness of zone therapy on quality of life among patients with hypertension in selected villages at Tirunelveli”.

Date:

  
Signature

Name and Designation

**Dr. T. K. Senthil Kumar, M.D., F.I.C.P**  
Consultant Physician  
Reg. No: 56869

Seal

**Annaamalai Hospital**  
31, Railway Feeder Road,  
Sankarankovil.

# CONTENT VALIDITY CERTIFICATE

## CONTENT VALIDITY CERTIFICATE

I **Dr.(Mrs).S.S.Sharmila Jansi Rani** hereby certify that I have validated the tool of Mrs.G.Jebakani prances II year M.Sc'(nursing) student of Sri.K.Ramachandran Naidu College of Nursing Sankarankovil who is undertaking a study entitled "A study to assess the effectiveness of zone therapy on quality of life among patients with hypertension in selected villages at Tirunelveli "

Date:

Signature



Name and Designation

**Dr. (Mrs).S.S.Sharmila Jansi Rani Ph.D (N)**  
Professor  
Christian college of nursing  
Neyyoor  
Kanyakumari district

Seal



## **APPENDIX – D**

### **LIST OF EXPERTS FOR CONTENT VALIDITY**

#### **MEDICAL EXPERT**

- 1. Dr.T.K.SENTHIL KUMAR M.B.B.S., M.D.,**  
Medical Director,  
Annamalai Hospital,  
Railway feeder road,  
Sankarankovil,Tirunelveli District.

#### **NURSING EXPERTS**

- 1. Prof. (Mrs).J.M.JerlinPriya M.Sc (N),**  
Principal  
Annammal College of Nursing,  
Kuzhithurai,K.K.Dist.
- 2. Mrs.C.Sheeba M.Sc (N),**  
Reader,  
Christian College of Nursing,  
Neyyoor,K.K.Dist-629802.
- 3. Prof. (Mrs).S.S.SharmilaJancy Rani M.Sc (N),**  
Professor,  
Christian College of Nursing,  
Neyyoor,K.K.Dist-629802.
- 4. Mrs.Tamilselvi M.Sc (N),**  
Reader,  
Bishop College of Nursing,  
Dharapuram,  
Erode Dist-638656.

## APPENDIX-E

### CERTIFICATE OF FOOT ZONE THERAPY TRAINING



# SAMC

**Speciality Alternate Medicine Clinic**  
**Department of Yoga**

Date : 28-01-2015

#### CERTIFICATE

This is to certify that Mrs.Jebakani Princes. S, II year M.Sc(Nursing) student from Sri.K.Ramachandran college of nursing, Sankarankovil has undergone training in Foot Reflexology course at our above mentioned institution from 28.12.2014 to 28.1.2015. She is eligible to teach and demonstrate in **FOOT REFLEXOLOGY**

#### Managing Director

**Dr. B.Vincent Balaji**  
B.A. (Zoo), M.H.M.D.S., D.Acu.,

#### Chief Operational Manager

**Chief Medical Officer**  
**Dr. Morgan Balaji**  
MD (H), MD (Med.A), Ph.D.,

#### Hon. Administrators

**Mr. R.K.Vaz**  
(Tuticorin Division)

**Dr. Mrs. Nisha Balu Ph.D.,**  
(Trichy Division)

**Mr. E.M.S. Fazulullah**  
(Chennai, North Province)

#### Duty Doctors

**Specialty Doctors**  
**On Call**



  
**Chief Operational Manager,**  
**Chief Medical Officer**  
**Dr. Morgan Balaji**  
MD(H), MD(Med.A), Ph.D.,

**Zion Balaji Hospital Campus**

52, Villikudiyiruppu, Udangudi - 628 203.

Thoothukudi Dist. Tamil Nadu.

website : [www.hhcindia.org](http://www.hhcindia.org)

e.mail : [morgan.balaji@gmail.com](mailto:morgan.balaji@gmail.com)

**APPENDIX – F**  
**CERTIFICATE OF ENGLISH EDITING**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mrs.G.JEBAKANI PRINCES** II year M.Sc (Nursing), in Sri.K.Ramachandran Naidu college of Nursing, Sankarankovil (Tk), Thirunelveli District has done a dissertation studyon “A study to assess the effectiveness of zone therapy on quality of life among patients with hypertension in selected villages at Tirunelveli” was edited for English language appropriateness.

Signature

**APPENDIX – G**  
**CERTIFICATE OF INFORMED CONSENT**

**INFORMED CONSENT**

Good Morning,

I, **Mrs.G.Jebakani** **princes**, M.sc Nursing II Year student of Sri.K.Ramachandran Naidu College of Nursing, conducting a study“**A study to assess the effectiveness of zone therapy on quality of life of hypertensive patients in selected villages at Tirunelveli**”as a partial fulfillment of the requirement for the degree of M.Sc Nursing under The Tamil Nadu Dr. M.G.R Medical University. Zone therapy was given to the hypertensive patients 15 minutes a day on alternative days for 3 weeks.

I assure you that information obtained will be kept confidential. So, I request you to kindly co operate with me and participate in this study by giving your frank and voluntary consent.

Thank you.

## **APPENDIX – H**

### **COPY OF THE TOOL FOR DATA COLLECTION**

#### **Section A: Demographic variables**

##### **1. Age**

- a. 35 – 45 years
- b. 46 – 55 years
- c. 56 – 65 years
- d. 66 – 70 years

##### **2. Sex**

- a. Male
- b. Female

##### **3. Religion**

- a. Hindu
- b. Christian
- c. Muslim
- d. Others

##### **4. Education**

- a. Illiterate
- b. Primary education
- c. Higher secondary education
- d. Diploma or degree education

##### **5. Occupation**

- a. Unemployed
- b. coolie
- c. Private employee
- d. Government employee
- e. Self employed

##### **6. Monthly income**

- a. Below Rs.3000
- b. Rs.3001 – Rs.6000



- c. Rs.6001 – Rs.9000
- d. Above Rs.9001

**7. Marital status**

- a. Unmarried
- b. Married

**8. Type of family**

- a. Joint family
- b. Nuclear family

**9. Number of children**

- a. None
- b. 1
- c. 2
- d. More than 2

**10. Dietary habits**

- a. Vegetarian
- b. Non-vegetarian

**11. Duration of illness**

- a. 2 years
- b. 3 years
- c. 3 years
- d. 5 years

**12. Following DASH**

- a. Yes
- b. No

**13. Mode of treatment**

- a. Medication
- b. Both Medication and Exercise

## Section B: Modified WHO Quality of life questionnaire

S. No	QUESTIONNAIRE	4At allNot	3Moderate	2MuchVery	1Extremely
	<b><u>PHYSICAL ASPECTS:</u></b>				
1.	Do you have any trouble in doing strenuous activity?				
2.	Do you have any trouble in taking a long walk?				
3.	Have you felt weak and tiredness often?				
4.	Do you need to stay in bed during the day?				
5.	Do you have any restrictions to take food as you like?				
	<b><u>PHYSIOLOGICAL ASPECTS:</u></b>				
6.	Have you lacked appetite?				
7.	Did pain interfere with your daily activities?				
8.	Have you had a trouble sleeping?				
9.	Did you feel fatigue during physical activity?				
10.	Have you had disturbed in sexual activity?				
11.	Do you need help with eating, dressing, washing yourself?				
12.	Do you have enough energy for everyday life?				
	<b><u>PSYCHOLOGICAL ASPECTS:</u></b>				
13.	Did you feel tense and depressed about your health condition?				
14.	Have you had difficulty in concentrating on things like reading a newspaper or watching television?				
15.	Have you had difficulty in remembering things?				
	<b><u>SOCIAL ASPECTS:</u></b>				
16.	Has your physical condition interfered with your social activities?				
17.	Has your physical condition or medical treatment caused your financial difficulties?				
18.	How you can able to deal with a difficult situation?				
19.	Do you have any restrictions in participating social activities?				
20.	How safe do you feel in daily life?				
21.	Were you limited in pursuing your hobbies or other leisure activities?				

22.	Have you enough money to meet your needs?				
23.	Has your physical condition interfered with your family life?				
<b>S. No</b>	<b>QUESTIONNAIRE</b>	<b>4Extremely</b>	<b>3MuchVery</b>	<b>2Moderate</b>	<b>1Not at all</b>
24.	Do you have enough support from your friends?				
25.	Satisfaction with your transport?				
26.	Satisfied with the conditions of your living place?				
27.	Satisfied with your personal relationship?				
28.	<b><u>PHYSICAL ASPECTS:</u></b> Acceptance of your bodily appearance?				
29.	Satisfaction with your health?				
30.	Satisfaction with your capacity for work?				

### SCORING KEY

SCORE	DESCRIPTION
0- 60	Poor
61-90	Good
91-120	Very good

### APPENDIX –I

#### STEPS OF INTERVENTION

Tell the patient to lie down in supine position in a relaxed manner. Start with a warm up thereby preparing the feet for therapy. Start directly on the heart and lung area. This area stretches from the diaphragm line to the base of the toes on both feet. Using a

technique called the thumb walk, work on this area thoroughly. This area helps strengthen and regulate the heart.

Work over the diaphragm line running just below the ball of the foot using thumb walk. This will help deepen and open breathing and bring more oxygen and ch'i or prana to each cell.

Work on the reflex areas for chest. This area is located on top of both feet, in the troughs between the toes. Starting in zone 1 (at the base of the big toe), work up toward leg, about 2 inches up from the webbing. Continue working each zone, ending in zone 5 near the outside edge of foot using thumb walk.

Around the base of big toe (on the bottom of foot) is the reflex area for the thyroid and parathyroid glands. These regulate the pulse rate and help with calcium absorption. Work the reflex zone for the thyroid gland by thumb walk technique.

Now work on the spine reflexes. These are located on the inside edge of both feet (zone 1), extending from the heel nearly to the top of the big toe, opposite the root of the toenail. Work slowly up the foot and then all the way down using the thumb walk technique.



**Thumb walk technique**

Working on the spine reflexes nourishes the nervous system that feeds the entire body. Now, work on the soft center of foot, from the diaphragm line down to the midline.

This will stimulate the liver, kidneys, adrenals, and other organs vital for circulation and the regulation of water levels in the body. Thoroughly cover this area, moving up, down, and/ or diagonally. Use the thumb walk technique. It was given 15 minutes a day on alternative days for 3 weeks.