A STUDY TO EVALUATE THE EFFECTIVENESS OF YOGA THERAPY IN REDUCING BLOOD PRESSURE AMONG HYPERTENSIVE CLIENTS AT SELECTED VILLAGE, KANYAKUMARI DISTRICT

A DISSERTATION SUBMITTED TO THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI IN PARTIAL FULFILLMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER 2017

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2015-2017

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Internal Examiner **External Examiner**

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OCTOBER 2017

CERTIFICATE

This is to certify that the dissertation entitled, **"A study to evaluate the effectiveness of yoga therapy in reducing blood pressure among hypertensive clients at selected village, Kanyakumari district"** is a bonafide work done by Mis. vinitha. V.L, II year M.Sc (N), Global College of Nursing, Nattalam in partial fulfilment of the University rules and regulations for the award of M.Sc (N) degree under my guidance and supervision during the academic year October 2015-2017.

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ABSTRACT

INTRODUCTION

Hypertension also known as high blood pressure is a long-term medical condition in which the blood pressure in the arteries is persistently elevated. High blood pressure usually does not cause symptoms. Long-term high blood pressure, however, is a major risk factor for coronary artery disease, stroke, heart failure, peripheral vascular disease, vision loss, and chronic kidney disease.

STATEMENT

A study to assess the effectiveness of yoga therapy in reducing blood Pressure among clients in selected village of Kanyakumari district.

OBJECTIVES

- To assess the pre and post test level of the blood pressure among hypertensive clients in control group and experimental group
- To compare the pre and post test level of blood pressure among hypertensive clients in control group and experimental group.
- To compare the pre and post test level of blood pressure among hypertensive clients between control group and experimental group.
- To find out association between the pretest blood pressure level among client with hypertension with their selected demographic variables such as age, gender, educational status, occupation, duration of illness, family history, food pattern

RESEARCH METHODOLOGY

The research design adopted for this study was true experimental design. The sample size was 60 and was drawn through simple random sampling technique. The feasibility of the study and the refinement of the tool were assessed through pilot study. The blood pressure level among Hypertensive clients was assessed by using sphygmomanometer.

The data collection for the main study was done from 03-04-2017 to 03-04-2017. Yoga was given for experimental group. Post test was done after intervention period. The data gathered were analyzed by descriptive and inferential statistical method.

FINDINGS OF THE STUDY

In experimental group the mean score was 3.0 in pre test and 1.70 in post test. The paired 't' value was 7.28 which is significant at p>0.05. It shows that yoga was effective in reducing the blood pressure level among clients with hypertension. In control group the mean score on blood pressure level was 2.96 in pretest and 2.83 in post test. The paired't' value was 0.75 which is not significant. The mean score of blood pressure level in experimental group was 1.70 in post test and 2.83 in control group post test. The estimated value was 5.16 which is significant at p>0.05. It shows that yoga was effective in reducing the blood pressure level among client with hypertension. There is no association between pre test level of blood pressure among the hypertensive clients and their selected demographic variables like occupation, Gender, Duration of illness, family history expect age, Food pattern

CONCLUSION

This study inference revealed that regular practice of yoga could bring about desired reduction in the blood pressure level among clients with Hypertension.

CHAPTER -1
INTRODUCTION

"Health and cheerfulness naturally beget each other."
– Joseph Addison

Good health is a pre-requisite of human productive and development process. In the past most individuals and societies viewed good health or wellness as the opposite or absence of disease. Health is a multidimensional concept and must be viewed broader perspective. An assessment of the client's state of health is an important aspect of nursing. (Polit. F Denise, 2008)

High blood pressure, also called "hypertension," is a serious medical condition. It happens when the force of the blood pumping through your arteries is too strong.

When your heart beats, it pushes blood through your arteries to the rest of your body. When the blood pushes harder against the walls of your arteries, your blood pressure goes up. Your blood pressure may be different at different times of the day. It is usually higher when you first wake up, after you exercise, or when you are under stress.

Hypertension also known as high blood pressure is a long term medical condition in which the blood pressure in the arteries is persistently elevated .High blood pressure usually does not cause symptoms. Long term high blood pressure, however, is a major risk factor for coronary artery disease, stroke, heart failure, peripheral vascular disease, vision loss, and chronic kidney disease.(Wikipedia)

High blood pressure is classified as either primary high blood pressure or secondary high blood pressure. About 90–95% of cases are primary, defined as high blood pressure due to nonspecific lifestyle and genetic factors. Lifestyle factors that increase the risk include excess salt, excess body weight, smoking, and alcohol. The remaining 5–10% of cases are categorized as secondary high blood pressure, defined as high blood pressure due to an identifiable

cause, such as chronic kidney disease, narrowing of the kidney arteries, an endocrine disorder, or the use of birth control pills.(Wikipedia)

Around 85 million people in the United States (U.S.) have high blood pressure. Hypertension and heart disease are global problems. The World Health Organization (WHO) suggests that the growth of the processed food industry has impacted the amount of salt consumed, and that this plays a role in hypertension.

Yoga therapy is the adaptation of yoga practices for people with health challenges. Yoga therapists prescribe specific regimens of postures, breathing exercises, and relaxation techniques to suit individual needs. The challenges may be an illness, a temporary condition like pregnancy or childbirth, or a chronic condition associated with old age or infirmity.

Yoga therapy is a type of therapy that uses yoga postures, breathing exercises, meditation, and guided imagery to improve mental and physical health. The holistic focus of yoga therapy encourages the integration of mind, body, and spirit. Modern yoga therapy covers a broad range of therapeutic modalities, incorporating elements from both physical therapy and psychotherapy.

Yoga can be a very beneficial therapy for controlling and lowering high blood pressure naturally. The gentle, soothing practice of yoga asana settles both mind and body and reduces stress a leading cause of hypertension.

NEED FOR THE STUDY

Globally, the overall prevalence of raised blood pressure in adults aged 25 and over was around 40% in 2013.17.3% people died from cardio vascular disease, 80% of non communicable disease death occurs in low and middle income countries.

Internationally in 2010, the age-standardized prevalence of hypertension decreased by 2.6% in high-income countries, but increased by 7.7% in low- and middle-income countries. During the same period, the proportions of awareness (58.2% versus 67.0%), treatment (44.5% versus 55.6%), and control (17.9% versus 28.4%) increased substantially in high-income countries, whereas awareness (32.3%

versus 37.9%) and treatment (24.9% versus 29.0%) increased less, and control (8.4% versus 7.7%) even slightly decreased in low- and middle-income countries.

In united states About 75 million American adults (32%) have high blood pressure that's 1 in every 3 adult About 1 in 3 American adults has pre hypertension—blood pressure numbers that are higher than normal but not yet in the high blood pressure range Only about half (54%) of people with high blood pressure have their condition under control. High blood pressure was a primary or contributing cause of death for more than 410,000 Americans in 2014that's more than 1,100 deaths each day. High blood pressure costs the nation 48.6 billion each year. This total includes the cost of health care services, medications to treat high blood pressure, and missed days of work.

Overall prevalence for hypertension in India was 29.8%. Significant differences in hypertension prevalence were noted between rural and urban parts 27.6%. Regional estimates for the prevalence of hypertension were as follows: 14.5%, 31.7%, 18.1%, and 21.1% for rural north, east, west, and south India; and 28.8%, 34.5%, 35.8%, and 31.8% for urban north, east, west, and south India, respectively. Overall estimates for the prevalence of awareness, treatment, and control of BP were 25.3%, 25.1%, and 10.7% for rural Indians; and 42.0%, 37.6%, and 20.2% for urban Indians. (Hira pant,)

National level of hypertension during 2007–2010, the response rate among persons screened was 76.3%. Data were analyzed for 11,782 participants who had adequate data from the interview and examination components of the survey necessary to determine hypertension status. Blood pressure was determined by an average of up to three measurements taken during a single examination. Hypertension was defined as an average systolic blood pressure (SBP) ≥140 mmHg, an average diastolic blood pressure ≥90 mmHg, or if the participant reported the current use of blood pressure lowering medication. Blood pressure control was defined as an average SBP <140 mmHg and an average DBP <90 mmHg among persons with hypertension.

In Tamilnadu a study published in the International Journal of Public Health reported 21.4 per cent hypertension prevalence in about 10,500 people aged 25-64 in

11 villages in the State. Prevalence was nearly the same in both sexes. In rural areas the prevalence of hypertension is 20 per cent. Prevalence of hypertension in urban areas is 22-30 in 2016 .

In kanayakumari districts 17.67% of population lives in rural areas of villages. About 71%of people had stage 1 hypertension and 20.3% of people had stage2 hypertension. Prevalence was same in both sex.

In palliyadi village the total number of population under the primary health centre is 46,630, among them 1326 of total population are diagnosed as hypertension.

Dr. A Maria Therese (2016) conducted a study on effectiveness of yoga in reducing the blood pressure among the hypertensive clients in research institute of health science puducherry among 46 hypertensive client in experimental &control group. A true experimental study, pre test post control group design with multiple observation was conducted at PHC, Kalapet. Subject were selected by using simple random sampling techniques. The blood pressure was assessed by sphygmomanometer. The study revealed that effectiveness of yoga in reducing blood pressure level among hypertensive clients.

Jasmine Sharmilla (2017) conducted a quasi experimental study to evaluate the effectiveness of yoga therapy on blood pressure among adult with hypertension in nanchipalayam, Dharapuram among 60 hypertensive client in experimental and control group. The blood pressure was assessed by sphygmomanometer. The intervention was performing yoga therapy for 30 minutes for a period of 15 days. The study revealed that effectiveness of yoga therapy in reducing the blood pressure level in hypertensive clients.

During the community posting the investigator experienced that most of the adults were suffering from hypertension between the age group of 36-65 years. While taking medication not reduction in blood pressure level. So the researcher interested to do the alternative therapy to reduce the risk of hypertension.

STATEMENT OF THE PROBLEM

" A study to evaluate the effectiveness of yoga therapy in reducing blood pressure among hypertensive clients at selected village, Kanyakumari District".

OBJECTIVES

- To assess the pre and post test level of the blood pressure among hypertensive clients in control group and experimental group
- To compare the pre and post test level of blood pressure among hypertensive clients in control group and experimental group.
- To find out the effectiveness of yoga on post test level of blood pressure among hypertensive clients between control group and experimental group.
- To determine association between the pretest blood pressure level among client with hypertension with their selected demographic variables such as age, gender, educational status, occupation, duration of hypertension, family history, food pattern.

HYPOTHESIS

H_1: There will be a significant difference in pre and post test level of blood pressure level among hypertensive client in experimental and control group

H_2: There will be a significant difference between the post test level blood pressure among hypertensive clients in experimental and control group.

H_3: There will be significant association between pre test level of blood pressure among hypertensive clients with their selected demographic variables like age, gender, educational status, occupation, duration of hypertension, food pattern, Family history

OPERATIONAL DEFINITIONS

Effectiveness

Effectiveness is the capability of producing a desired result or the ability to produce desired output. When something is deemed effective, it means it has an intended or expected outcome, or produce a deep, vivid impression .

In this study effectiveness refers to the decreased level of blood pressure obtained after yoga therapy.

Yoga Therapy

Yoga therapy is the adaptation of yoga practices for people with health challenges. Yoga therapists prescribe specific regimens of postures, breathing exercises, and relaxation techniques to suit individual needs.

In this study it refers to yoga therapy is Pranayama (Bhastrika pranayama, Kapalbhathi pranayama, Anulom pranayama, Babramari pranayama, Udgeeth pranayama, Pranav pranayama) .

Reducing blood pressure

A blood pressure reducing lower than 90mm for the systolic and 60mm for diastolic generally considered as low blood pressure.

In this study it refers to reduction of systolic blood pressure above 130 and diastolic blood pressure above 90 measured by using cuff and dial sphygmomanometer

Hypertensive clients

Hypertension is high blood pressure. Blood pressure is the force of blood pushing against the walls of arteries as it flows through them. Arteries are the blood vessels that carry oxygenated blood from the heart to the body tissues.

It refers to the known hypertensive clients with systolic blood pressure above 130 diastolic blood pressures above 90 between the age group 36-65 years.

ASSUMPTION

The study assumes that

- Yoga may reduce blood pressure level among hypertensive client

DELIMITATION

The study is delimited to:

- Only hypertensive clients aged 36-65 years
- Cherikadai village at Kanayakumari district

CONCEPTUAL FRAME WORK

The conceptual frame work is a group of concepts and a set of pre position that spells out the relationship between them. The overall purpose is to make scientific findings more meaning and generalizable. (Polit & Hungler 1995)

It is the process of forming ideas. The major goal of her conceptual model act as a guide to research process. The major goals of conceptual frame work are to clarity the concept used in the study to find the purpose and relationship between the concepts.

The present study was aim to evaluate the effectiveness of yoga on blood pressure level among client with hypertension residing in selected villages at kanayakumari district. The frame work of the study is based on the general system theory.

The number of parts of the system is totally dependent on what is needed to accomplish for any system to function. The aim of the study to evaluate the effectiveness of yoga Therapy on blood pressure among hypertensive client residing in cherikadai village at Kanayakumari district. The **Ludwig von Bertalanffy** explained that the system has four major aspects.

- Input
- Through put
- Output
- Feed back

Input

It is the type of information that enter into the system from the environment through it's boundaries.

In this study input refers to the demographic variables such as age, sex, educational status, occupation, duration of illness, family history, food pattern.

Through put

Throughput makes use of persons processes &effectors processes refers to the control mechanism that a person uses as an adaptive system. Effectors refers to the physiological function self concept &role confusion involves in adaptation.

In this study throughput refers to the yoga therapy at morning for a period of 30 days

Output

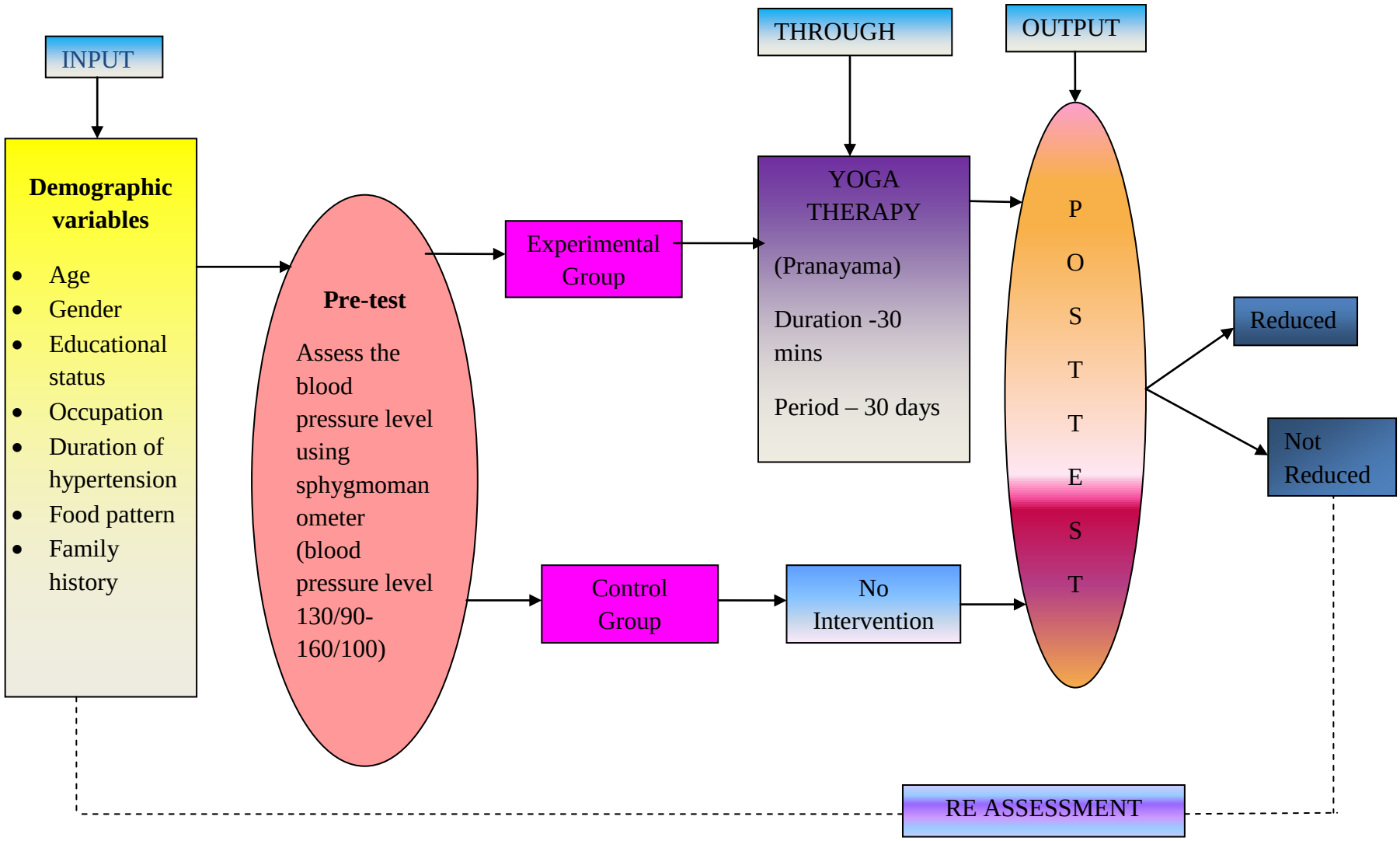
Output is any information that leaves the system & enters the environment through system boundary.

In this study output refers to the reduced blood pressure level.

Feedback

Feedback refers to the output what is returned to the system & it allows it to monitor itself. In this study the feedback the reduction of blood pressure level

MODIFIED CONCEPTUAL FRAME WORK BASED ON LUDWIN BERTALANFFY (1968)
GENERAL SYSTEM THEROY



CHAPTER – II

REVIEW OF LITERATURE

The literature review involves the systematic identification , location, scrutiny and summary of written materials that contain information of a research problem **(Polit and Hungler 2004).**

A review of literature is a key step in research process and it refers to extensive, exhaustive review of literature so as to gain an insight into the various aspects of the problem understudy such as design, methods, instruments measures and techniques of data collection that may prove useful in the proposed project.

The review of literature provides a basis for future investigation ,justifies the need for replication, throws light on the feasibility of the study, indicates constrains of data collection and helps to relate findings of one study to another. It also helps to establish a comprehensive body of scientific knowledge in a professional from which valid and pertinent theories may be developed.

The researcher presents the review of literature for the present study under the following headings.

1. Studies related to hypertension
2. Studies related to yoga
3. Studies related to yoga on hypertension

SECTION- A STUDIES RELATED TO HYPERTENSION

Jugal Kishore, et.al (2016), conducted A community based cross-sectional study conducted in two rural areas in Delhi among 1005 subjects selected using systematic random sampling method Blood pressure, body mass index, and blood sugar were measured. Data analysis was done using SPSS version 16. Odds of hypertension among subjects with risk factors were calculated. Value less than 0.05 was considered significant. The prevalence of hypertension was 14.1% among study subjects. Hypertension was significantly higher in individuals more than 35 years than those less than 35 years. Hypertension was significantly higher in those who take

alcohol and in subjects with raised total cholesterol level but in multivariate analysis only age, education, and cholesterol levels were independently associated with hypertension. There is significant burden of hypertension in rural areas in Delhi. Age, education, and cholesterol levels were independent risk factors of hypertension.

Kaur Amandeep (2015), conducted a Quasi experimental with two group pre and post test design was used. Sixty primary hypertensive subjects were selected (30 subjects each in experimental and control group). Experimental group had done abdominal breathing exercise twice a day for continuous 10 days. The socio demographic and clinical data of the patient was collected through interview schedule. Sphygmomanometer and Stethoscope were used to assess the blood pressure. Descriptive statistics, t test and ANOVA were used to analyze the data. There was significant reduction in blood pressure in experimental group ($p = 0.00$). The study showed that there was significant association between blood pressure and age of hypertensive patients. The study concludes that Abdominal breathing exercise is an effective complementary therapy in reducing blood pressure among hypertensive patients.

MF Tringler (2014), conducted a population based study in which prevalence of hypertension in adult. A total of 30 peer-reviewed publications were identified that reported the prevalence of hypertension in 33 143 patients. The crude hypertension prevalence reported from rural Ibero-America was 32.6% (95% confidence interval: 31.4–32.5%; range: 1.8–52%). The prevalence of hypertension was lower in aboriginal populations than in other rural communities (19.5% vs. 36%). Only nine studies assessed the awareness, treatment, and level of control of hypertension (means 54%, 57%, and 14% respectively). The most prevalent cardiovascular risk factors were abdominal obesity (39%) and overweight (39%). The study concludes that hypertension is of public health importance in rural Ibero-America and the Caribbean, with evidence of considerable under-diagnosis, treatment, and control. There is an urgent need to develop strategies to prevent, detect, treat, and control hypertension effectively in this region.

Haryana Surinder (2013), conducted experimental study was to evaluate the effectiveness of health education programme on management of hypertension for hypertensive client in terms of knowledge, compliance and life style in Khan

Ahmedpur village of district Ambala, Haryana. A sample comprised of 30 hypertensive clients were selected purposively. The tools used for data collection were structured knowledge interview schedule, compliance rating scale and life style rating scale. Data analysis was done by using descriptive and inferential statistics. Finding of the study revealed that mean post test knowledge scores was significantly higher than the mean pre test knowledge scores, the mean post test compliance scores was significantly higher than the mean pre test compliance scores and the mean post test life style was significantly higher than the mean pre test life style scores of hypertensive clients. There was no significant association of post test knowledge, compliance and life style scores of subjects irrespective of demographic variables of hypertensive clients. Study concluded that the health education programme was effective in terms of enhancing knowledge, compliance and life style of hypertensive clients.

Amonov Malik, (2012), conducted a cross-sectional study was conducted among 209 patients with the diagnosis of primary hypertension at the Samarkand State Medical Institute. The study was conducted from June to September 2012. Drug adherence was studied using the Morisky 4-item self-report measure of medication-taking behavior. The reasons for drug non-adherence were assessed using a self-administered questionnaire. Odds ratio (OR) and 95% confidence interval (CI) were estimated by a logistic model. The BP control rate and drug adherence of the patients were suboptimal (24.4% and 36.8%, respectively). Overall, 64.6% of patients had good or adequate and 35.5% had inadequate knowledge about hypertension. Good knowledge of patients was significantly associated with controlled BP (OR=5.4, 95% CI, 1.7–16.2) and drug adherence (OR=3.8, 95% CI, 1.4–10.8). In conclusion, the inpatients of the secondary hospital had sufficient general knowledge about hypertension, but they had inadequate knowledge about specific issues such as treatment for and symptoms of hypertension. Both drug adherence and BP control rate were suboptimal and significantly associated with hypertension knowledge. This study conclude that potential areas of hypertension education that could be improved by patients' knowledge of hypertension.

Kearney, et.al (2011), conducted a cross-sectional study assessed knowledge, attitude and practice of exercise for blood pressure control among Nigerian patients

with hypertension. A total of 150 (male, 66 and female, 84) patients with hypertension whose ages were 20 years and older participated in this study. A structured questionnaire which sought information on socio-demographics, knowledge, attitude and practice of exercise for blood pressure control was used to obtain data from the respondents who were recruited from selected government hospitals. Data were analyzed using descriptive and inferential statistics at 0.05 Alpha level. More than half of the respondents, 90(60.0%) demonstrated poor exercise practice. A majority, 101(67.3%) had poor knowledge of exercise for hypertension control while a quarter, 39(26.0%) had positive attitude towards exercise. There were significant associations between knowledge of exercise and level of education ($\chi 2$=28.337; p=0.001), attitude ($\chi 2$=38.297; p=0.001) and practice of exercise ($\chi 2$=12.757; p=0.001) respectively. Significant association was found between knowledge and each of socio-economic status ($\chi 2$=19.192; p=0.001) and attitude ($\chi 2$=25.634; p=0.001). Practice of exercise for blood pressure control was low among Nigerian patients with hypertension which was significantly influenced by poor knowledge of and negative attitude towards exercise practice for blood pressure control.

Tanu, et.al (**2010**), conducted a cross-sectional study conducted on 800 samples aged 20 years and above, 400 from urban and 400 from rural area of Luck now. The result revealed the overall prevalence of hypertension was 26% (95% C.I. 23, 29), the prevalence among males (34%) was higher than females (24%). The mean age of participants was 35+14 years, the prevalence of hypertension increased with age. Proportionately there were more cases of hypertension among male participants over 35 years of age as compared to female participants of the same age (p=<0.001). Fifty-eight percent of hypertensive's were unaware of their hypertension. None of the hypertensive subjects who were aware of their condition had blood pressure under 140/90 mmHg. . Hypertension was 1.7 (OR 95% C.I. 1.14, 2.42) times more common among males then females. Males were 1.7 (OR 95% C.I. 1.06, 2.6) times less likely to have been aware of their hypertension status. Age analysis revealed that the prevalence of hypertension increased with age and hypertensive subjects were 5.6 (OR 95% C.I. 3.9, 8.1) times more likely to be over 35 years of age.

STUDIES RELATED TO YOGA

Dhivya mohanan, et.al (2016), conducted a study on effectiveness of yoga in treating the high blood pressure. 100 subjects with complaints of high blood pressure attending the outpatient department of cardiology of Narayana medical college and hospital, Nellore are recruited into the study and after obtaining informed consent; yoga session was conducted in Narayana Yoga and Naturopathy Medical College and Hospital for a period of 12 weeks. The same number of age/sex matched control group with high blood pressure were also enrolled and kept without yoga techniques. During the period of treatment the symptom relief in the subjects is assessed periodically by a sphygmomanometer. The results conclude that yoga is a effective method of hypertension.

Deepthi Tripathi (2016), conducted a study on effect of yoga hand mudra reducing the blood pressure level. Study was carried out on 34 subjects randomly, out of which 15 were diagnosed as hypertensive and 19 as normal. Yoga hand mudra was tried out on patients suffering from high blood pressure aged between 35-65 years. Blood pressure and heart rate measurements of the subjects were recorded before and after performing yoga hand mudra. After practicing the yoga hand mudra, there was a significant reduction in both systolic and diastolic blood pressure. The yoga hand mudra was found to be effective in normalizing high blood pressure in a novel way.

Jeenath justin (2016), conducted a study on assess the effectiveness of yoga (alternate nostril breathing) on blood pressure among hypertensive clients. The research design adopted was Quasi Experimental design. The conceptual framework for this study was based on modified Ludwig Von Bertalanffys General System Theory. The study has been conducted in Unicare Hospital, Rajkot. Purposive sampling technique has been adopted to select the desired sample. The sample size was 40 (20 under Experimental group and 20 under Control group). As an intervention of 15 days alternate nostril breathing exercise was practiced for experimental group. The data was collected through sphygmomanometer. The collected data were analyzed by using both descriptive and inferential statistical methods. “t” test was used to assess the effectiveness alternate nostril breathing on blood pressure among hypertensive clients. The obtained “t” value for systolic blood pressure was 31.2 and for diastolic blood pressure was 29.8 which is greater than

tabulated “t” value 3.8 which was highly significant at 0.001. The findings of the study reveals that the alternate nostril breathing helps in reducing in high blood pressure among hypertensive clients.

Ranjana Ganpat (2013), conducted a quasi experimental study on effectiveness of pranayama on blood pressure level. 60 hypertensive clients selected in this study. A selected intervention includes pranayama was given morning and evening in 10 days for 30 minutes. The post test was done in after 10^{th} day. The blood pressure level before and after Pranayama shows highly significant difference between blood pressure from day 1, day 8, day 9 and day 10. Systolic blood pressure from 154.53 mmHg (SD 7.53) to 133.2 mmHg (SD 6.14) and diastolic blood pressure from 93.8 mmHg (SD 4.99) to 82.26 mmHg (SD 5.24). Paired t-test for blood pressure before and after Pranayama shows p value 0.000000034, which very less than 0.01, therefore the effect of Pranayama on blood pressure of hypertensive samples is highly significant. The mean blood pressure on day 1 and day 10 shows the difference in systolic blood pressure was 21.33 mmHg and diastolic blood pressure was 11.54 mmHg. The severity of blood pressure before and after Pranayama was seen. Before Pranayama moderate blood pressure is 71.66%, mild is 19.99% and severe 8.33% and after Pranayama mild blood pressure is 54.99%, normal 36.66% and moderate is 4.99%. The severity of blood pressure before and after Pranayama in reduction of blood pressure. This study revealed that yoga can reduce blood pressure level.

Sharma. R(2013), conducted a study on effectiveness of yogasana in hypertension. The study conducted on 50 hypertensive clients aged 40-50 years, who are on anti hypertensive drugs.They where randomized into two groups control group and study group. The study group practice yoga for 45 mins 5day/week 3 month. The control group did not practice the yoga.The blood pressure level were assessed by day 1^{st} and monthly for 3 month. The data were analyzed by ‘t’ test. After 12 weeks of yogic practices in study group as compared to control group in whom mean values of the systolic blood pressure (138.16±12.98), diastolic blood pressure (94.24±12.32). The study conclude that yogasana reduce the blood pressure level.

Kozsa EH (2008), conducted the study on effectiveness of yoga on strees. Siddha Samadhi yoga is a programme in which meditation is associated with

pranayama. 22 volunteers with anxiety compliant. Were assigned to two groups, 14 attend the yoga and 8 attend waiting list or control group. They were evaluated before the intervention and after one month . A significant reduction in score on tension was found in yoga group.

STUDIES RELATED TO YOGA ON HYPERTENSION

Chauhan (2017), conducted a study on evaluate the effect of yoga practice on reducing hypertension. In this study to select the 60 participants. 30 experimental and 30 control groups. The result where compared with 26 healthy volunteers. We examined the effect of yoga on physiological parameters in a 1 month pilot study. The participants practice yoga for 1 month daily morning . We studied before and after one month of yoga practice. This study conclude that yoga practice reducing the blood pressure level.

Vungarala satyanand (2016), conducted a study on effectiveness of yoga on hypertension. In this study 100 subjects with complaints of high blood pressure attending the outpatient department of cardiology of Narayana medical college and hospital, Nellore are recruited into the study and after obtaining informed consent, yoga session was conducted in Narayana Yoga and Naturopathy Medical College and Hospital for a period of 12 weeks. The same number of age/sex matched control group with high blood pressure were also enrolled and kept without yoga techniques. During the period of treatment the symptom relief in the subjects is assessed periodically by a sphygmomanometer. The study concludes that yoga is reducing the blood pressure level.

Jitendra Kumar (et.al) (2015), conducted a study on effectiveness of yoga hand mudra for hypertension. The study was carried out 0n 34 subjects randomly, out of which 15 were diagnosed as hypertensive and 19 were normal. Yoga hand mudra was tried out on patients suffering from high blood pressure aged between 35-65 years. Blood pressure was recorded before and after performing yoga hand mudra. After performing the yoga hand mudra there was a significant reduction in both systolic and diastolic blood pressure. Finally this study concludes that yoga hand mudra is reducing the high blood pressure level.

Marshall Hagins (2013), conducted a study on systematically review and meta analyse the effectiveness of yoga for reducing blood pressure in adult with hypertension. Two authors independently assessed risk of bias using the Cochrane risk bias tool. All 17 studies included in the review. Yoga had a modest but significant effect on systolic blood pressure(4.17[6.35, 1.99]) and diastolic blood pressure(3.62[4.92, 1.60]). Sub group analyse demonstrated significant reduction in blood pressure for intervention incorporating 3 basic element of yoga practice.(SBP : 8.17mmHg[12.45,3.89]; DBP: 6.14mmHg[9.39,2.89]. finally the study conclude that yoga can be effective intervention for reducing blood pressure level.

Sharma, (et.al) (2013) conducted a study on the effect of yoga training on hypertension. The study was conducted on 50 hypertensive patients aged 40-50 years, who are on salt reduction and antihypertensive drugs. They were randomized into two groups: control group and study group. The study group practiced yoga for 45 mines, 5 day/week for 3 months. The control group did not participate the yoga session. Blood pressure level assessed at day 1st and monthly for 3 month. The data were analyzed using paired and un paired t test. After 12 weeks of yogic practice in study group as compared to control group in whom mean values of the systolic blood pressure (121.12+8.18), diastolic blood pressure (94.24+12.32).This study conclude that yoga can be reduce the blood pressure level.

Devasena (2011), conducted a study on effect of yoga on blood pressure level in healthy volunteers above the age of 40 years. The blood pressure was assessed before the start of yoga practice and again after 6 months of yoga practice. The result were compared and analysed with respect of age, sex, and body mass index. From the study it was observed the systolic blood pressure was lowered to a highly significant level($p<0.001$). The diastolic blood pressure was reduced significantly ($p<0.001$). This shows that yoga is reducing the blood pressure level.

Moa Wolff (2010), conducted a study on effect of yoga on blood pressure in patient with hypertension. The study was structured as a randomized controlled study. Half of the 24 patients that applied to participate in the study were randomized into the intervention group 15minutes of yoga twice daily, the other half to the control group 15 minutes rest twice daily. All the patients were given 24 hour blood pressure readings ahead of the after six weeks with/without intervention. The findings no

significant lowering of blood pressure could be observed in either of the groups. The 24 hour average systolic blood pressure went down by 4.4 mmHg in the yoga group while this remained completely unchanged in the control/rest group (±0 mmHg). The study concludes that blood pressure level is lowering the yoga group.

CHAPTER 3
METHODOLOGY

RESEARCH METHODOLOGY

The methodology of research refers to the principle and idea on which researcher base their procedure and strategies (Polit and Hungler, 2002).

Methodology is a significant part of any research which enables the researcher to organize the procedure of collecting reliable data for the problem under study or investigation. This chapter deals with the description of methodology and the various steps adopted to collect and organize data for the study.

Research methods are the techniques used the researcher to structure a study to gather and analyse information relevant to research question (Polit and Black, 2004).

The methodology section includes the research approach, research design, variables, settings, population, sample, sample size, sampling techniques, sampling criteria, development and description of the tool, content validity, reliability, pilot study, ethical consideration, method of data collection, plan for data analysis and protection of human rights.

RESEARCH APPROACH

The research approach involves the description of in the plan to investigate the phenomenon understudy in a quanlitative or a combination of the two methods. Furthermore, it helps to decide whether the presence or absence as well as manipulation and control over variables(Derise F Polit,2011)

Quantitative research approach was used for this study

RESEARCH DESIGN

A research design is the master plan specifying the methods and procedures for collecting and analyzing the needed information in a research study. (Hungler,2004).

The research design adopted for this study was True experimental pre and post test design. The research design chosen for this study is presented in the figure as follows

Group	Pre-test	Intervention	Post-test
Experimental	O_1	X	O_2
Control	O_1	-	O_2

Key:

O_1- pre test blood pressure level among experimental and control group.

X- practice yoga to the experimental group.

O_2- post test blood pressure level among experimental and control group.

VARIABLES

Variables are concepts at different level of attributes that a consciely defined to promote their measurement or manipulation within study. (Derise F Polit, 2011)

Variables are classified as dependent variables and independent variables.

Independent variables:

It is focus of the study and reflects as the empirical aspects of the concept being studied (Polit and Hungler, 2004)

Yoga Therapy

Dependent variables:

Variables causing change is referred to the dependent variables. It is intervention or treatment that the investigator performs to see the resulting change in the dependent variable (Polit and Hungler, 2004)

Level of blood pressure

Demographic variables

A variable that confounds the relationship between the independent and dependent variables and that needs to be controlled either in the research design or through statistical procedures (Polit and Hungler, 2004)

The present study demographic variables were Age, gender, educational status, occupation, duration of illness, food pattern, Family history.

SETTING OF THE STUDY

Setting is the more specific places where data collection occurs. The selection of setting was done on the basis of feasibility of conducting the study, availability of samples and co- operation of the authorities (Polit and Beck,2004)

The study is planned to be conducted in Cherikadai area in Kanayakumari District which is 4 km away from the college and 1 km away from the primary health centre, Palliyadi and also has the difference of 2 km in between the villages. The population covered in cherikadai area was 43,360.

STUDY POPULATION

A population is defined as the entire set of individuals or objects having some common characteristics (Derise F polit, 2011)

The study population comprised of hypertensive clients aged 36-65 years. Whose blood pressure is between 130/90-160/100 residing in cherikadai at kanayakumari district.

SAMPLE

A sample consist of the sub set of the population selected to participate in the research study.(Polit and Beck,2012)

In this study the sample of known hypertensive clients aged 36-65 years the blood pressure level 130/90-160/100mmHg and also who fulfill the inclusion criteria residing in cherikadai village at kanayakumari district

SAMPLE SIZE

Sample size is the total number of study participating in a study. (polit,2008)

The sample size of the study was 60, among them 30 control group 30 Experimental group

SAMPLING TECHNIQUES

It is the process of selecting the subject from a population in order to obtain information regarding a phenomenon in a way that represents the entire population. (Polit, 2010)

In this study samples where selected by simple random sampling techniques by lottery method. The first 30 samples selected by lottery method was included for control group and remaining 30 for control group.

CRITERIA FOR SAMPLE SELECTION

The sample was selected based on the following inclusion and exclusion criteria.

Inclusion criteria :

The criteria designated their specific attributes of the target population by which people are selected for inclusion in a selected study (Polit,2012)

Clients who are

1. diagnosed to as hypertension
2. whose blood pressure level is between 130/90-160/100mmHg
3. willing to participate in the study

Exclusion criteria :

Sampling criteria specifying characteristics that a population does not have (Polit, 2012).

Client who are

- not residing at cherikadai.
- not willing to participate in the study.
- diagnosed as hypertension with other medical disease like cardiac disease, diabetes mellitus etc.

DESCRIPTION OF THE TOOL

The tool is the written device that a researcher uses to collect the data. The tool consists of two sections.

Section A:

Comprised of demographic data of the samples which consist of age, gender, occupation, food pattern, duration of hypertension, education, Family history.

Section B:

Sphygmomanometer is used to determine the blood pressure level

CONTENT VALIDITY

Content validity of the tool was established by 6 experts including 5 nursing experts in the field of Community Health Nursing and a Medical Officer. The experts were requested to give their opinion and suggestion for further modification of items to improve the clarity and content of the items. The final tool was prepared as per the suggestions and advices given by the experts.

RELIABILITY

The degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure.(Sharma)

The reliability was assessed by using test retest method (r=0.9) hence it was highly reliable and the tool was used in this study.

PILOT STUDY

The pilot study was done after obtaining the permission from the College and Ethical committee of Global College of Nursing, Medical Officer of primary health centre, Palliyadi. The investigator introduced herself to the study subject and established good rapport. Then the investigator gave a short introduction about her study. Oral consent from the subjects was obtained. The samples were selected using simple random sampling techniques. Six samples were selected for my study. In that three sample were allotted for control group and three samples were allotted for experimental group through lottery method. The pre test blood pressure level was assessed by sphygmomanometer on the 1st day. Yoga therapy was given for the experimental group . The posttest blood pressure level was evaluated for both groups after a week by using sphygmomanometer.

METHOD OF DATA COLLECTION

After obtaining formal approval from the College, Ethical committee of Global college of Nursing, Medical Officer, written consent from each participant and also with the approval of the study by the dissertation committee of global college of nursing, the investigator preceded with the data collection.

The study was conducted at Cherikadai village from 03-04-2017 to 04-05-2017. The investigator screened the hypertensive cases from the primary health centre palliyadi. 1324 hypertensive cases were identified. Introduction about investigator and study was given to the samples. 60 samples were selected according to inclusion criteria. Sampling technique used to select the sample was lottery method. Samples were divided into control and experimental group. Consisting of 30 hypertensive clients in each group. pretest score of blood pressure was assessed by using sphygmomanometer. Yoga therapy was given for experimental group for 30 days, 30 minutes per day. Post test score of blood pressure was assessed for both control and experimental group.

PLAN FOR DATA ANALYSIS

Both descriptive and inferential statistics were used to analysis the data.

Descriptive statistics:

- Frequency and percentage distribution was to used to analyse the demographic variables.
- Mean and standard deviation was used to evaluate effectiveness of yoga in blood pressure level.

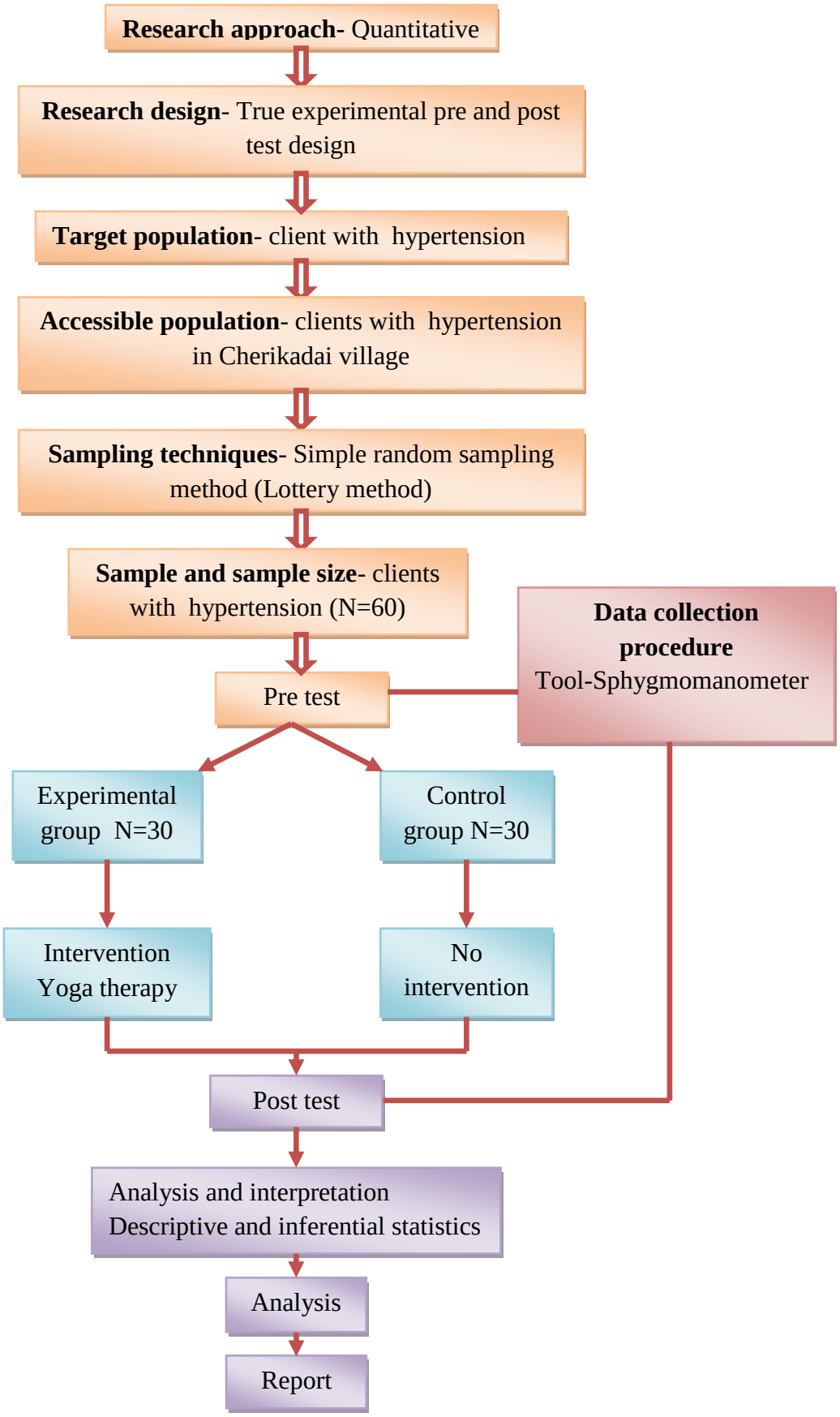
Inferential statistics

- Paired ‘t’ test was used to compare the pre test and post test blood pressure level in experimental and control group.
- Chi- square test was used to find out the association of the pre test blood pressure level in experimental group and control group with the selected demographic variables.

ETHICAL CONSIDERATION

The proposed study was conducted after the approval of the dissertation and ethical clearance committee of Global College Of Nursing. Formal permission was obtained from the medical officer of primary health centre palliyadi. Informed written consent was obtained from each participants of the family before starting the data collection

Schematic representation of research design



CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

Research data must be processed and analyzed in an orderly fashion so that patterns and relationship can be discerned and validated and hypothesis can be tested. Quantitative data analyzed through statistical analysis includes simple procedures as well as complex and sophisticated methods

This chapter deal with the analysis and interpretation of the data collected from clients with hypertension. The interpretation of tabulated data can bring to light the real meaning of findings of the study. In order to find meaningful answers to the research questions the collected data must be processed and analyzed in some orderly coherent fashion so that patterns and relationships can be discerned. In this study, the data was analyzed based on the objectives and hypothesis of the study using descriptive and inferential statistics.

The study findings are presented in sections as follows:

Section A:

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

Section B:

(i) Assessment of blood pressure level among client with hypertension control group and experimental group before intervention.

(ii) Assessment of blood pressure level among client with hypertension in control group and experimental group after intervention.

Section C:

(i) Comparison of pre test and post test level of blood pressure level among the hypertensive client in control group and experimental group

(ii) Comparison of post test blood pressure level among client with hypertension in control group and experimental group.

Section D:

Association between the pre test blood pressure level among client with hypertension in experimental group and control group with their demographic variable.

SECTION A:

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

Table : 1

Frequency and percentage distribution of demographic variables among client with hypertension with respect to age, gender, occupation, food pattern, duration of illness, education, Family history in experimental group and control group

(N =60)

Sl.No	Variables	Experimental group		Control group	
		f	%	f	%
1.	Age				
	a) 36-45 years	7	23.33	8	26.67
	b) 46-55 years	10	33.33	10	33.33
	c) 56-65years	13	43.34	12	40.00
2.	Gender				
	a) Male	14	46.67	15	50.00
	b) Female	16	53.33	15	50.00
3.	Occupation				
	a) Sedentary worker	8	26.67	9	30.00
	b) Moderate worker	13	43.33	12	40.00
	c) Heavy worker	9	30.00	9	30.00
4.	Food pattern				
	a) Vegetarian	8	26.67	9	30.00
	b) Non vegetarian	22	73.33	21	70.00
5.	Duration of hypertension				
	a) Since 3 month	9	30.00	10	33.34
	b) Since 6 month	14	46.67	13	43.33
	c) Since 1 year	7	23.33	7	23.33
6.	Education				
	a) Literate	30	100.00	30	100.00
	b) Illiterate	0	0.00	0	0.00
7.	Family history				
	a) Hereditary	14	46.67	15	50.00
	b) Non- Hereditary	16	53.33	15	53.33

Table:1 shows the distribution of sample according to the age in experimental group, out of 30 samples 7(23.33%) were 36-45 years of age,10(33.33%)were 46-55 years of age, 13(43.34%) were 56-65 years of age , in control group 8(26.67%)were 36-45 years of age,10(33.33%)of them were 46-65 years of age, 12(40.00%)were 56-65years of age.

Dispersion of sample according to the gender in experimental group out of 30samples 14(46.67%) were males, 16(53.33%) were females, and in control group 15(50%) were males,15 (50%)were females.

Distribution of sample according to the occupation in the experimental group, out of 30 samples 8(26.67%) belonged to sedentary worker, 13(43.33%) of them belonged to moderate worker, 9(13.00%)belonged to heavy worker, and in control group 9(30.00%)belonged to sedentary worker 12(14.00%) of them belonged to moderate worker, and 9(30%) belonged to heavy worker.

Distribution of sample according to the food pattern in experimental group, out of 30 samples 8(26.67%) belonged to vegetarian, 22(73.33%) belonged to non vegetarian and in control group 9(30.00%) of them belonged to vegetarian and 21(70.00%) of them belonged to non vegetarian.

Distribution of sample according to the duration of hypertension in experimental group out of 30 samples 9(30%) belonged to since 3 month, 14(46.67%) belonged to since 6 months, 7(23.33%) belonged to since 1year and in control group out of 30 samples 10(33.34%) belonged to since 3 months, 13(43.33%) belonged to since 6 months and 7(23.33%) belonged to since 1 year.

Distribution of samples according to the education in experimental group out of 30 samples 30(100.00%) belonged to literate and 0(0.00%) in belonged to illiterate and in control group out of 30 samples 30(00.00%) belonged to literate and 0(0.00%) belonged to illiterate.

Distribution of sample according to the family history in experimental group out of 30 samples 14(46.67%)belonged to Hereditary, 16(53.33%) belonged to Non hereditary and in control group out of 30 samples 15(50.00%) belonged to Hereditary, 15(50.00%) belonged to Non hereditary.

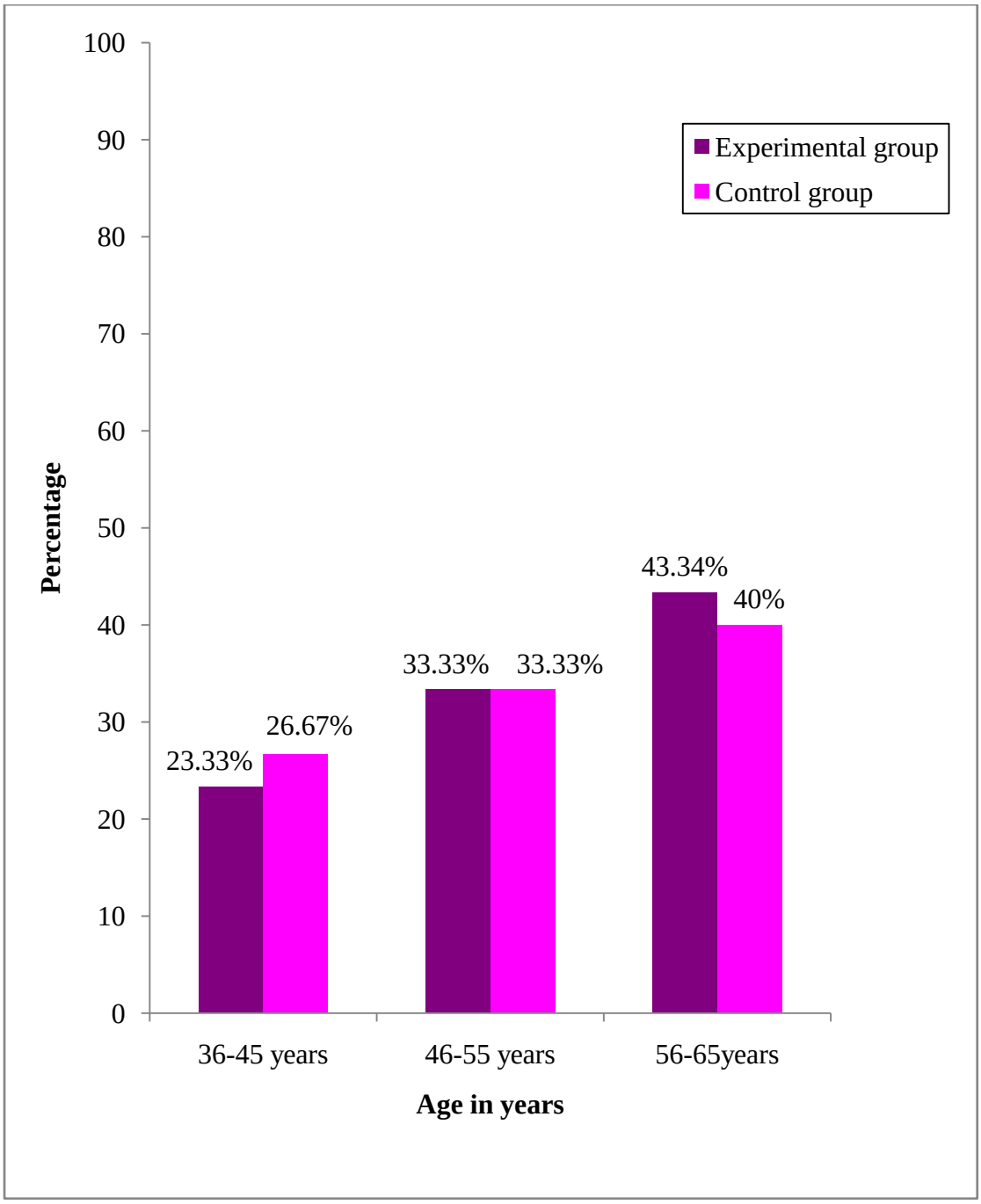


Figure 3: Percentage distribution of samples according to their Age

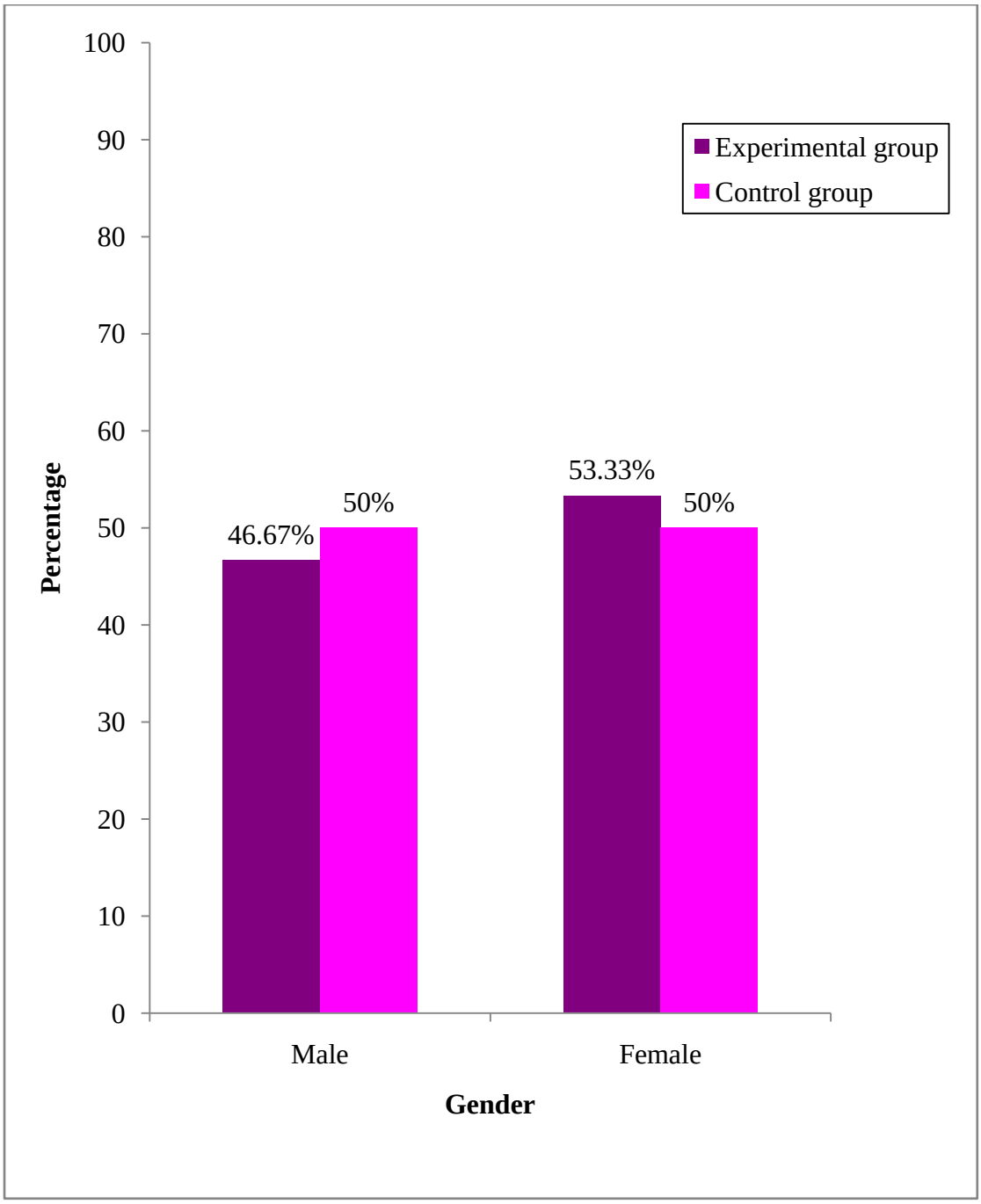


Figure 4: Percentage distribution of samples according to their Gender

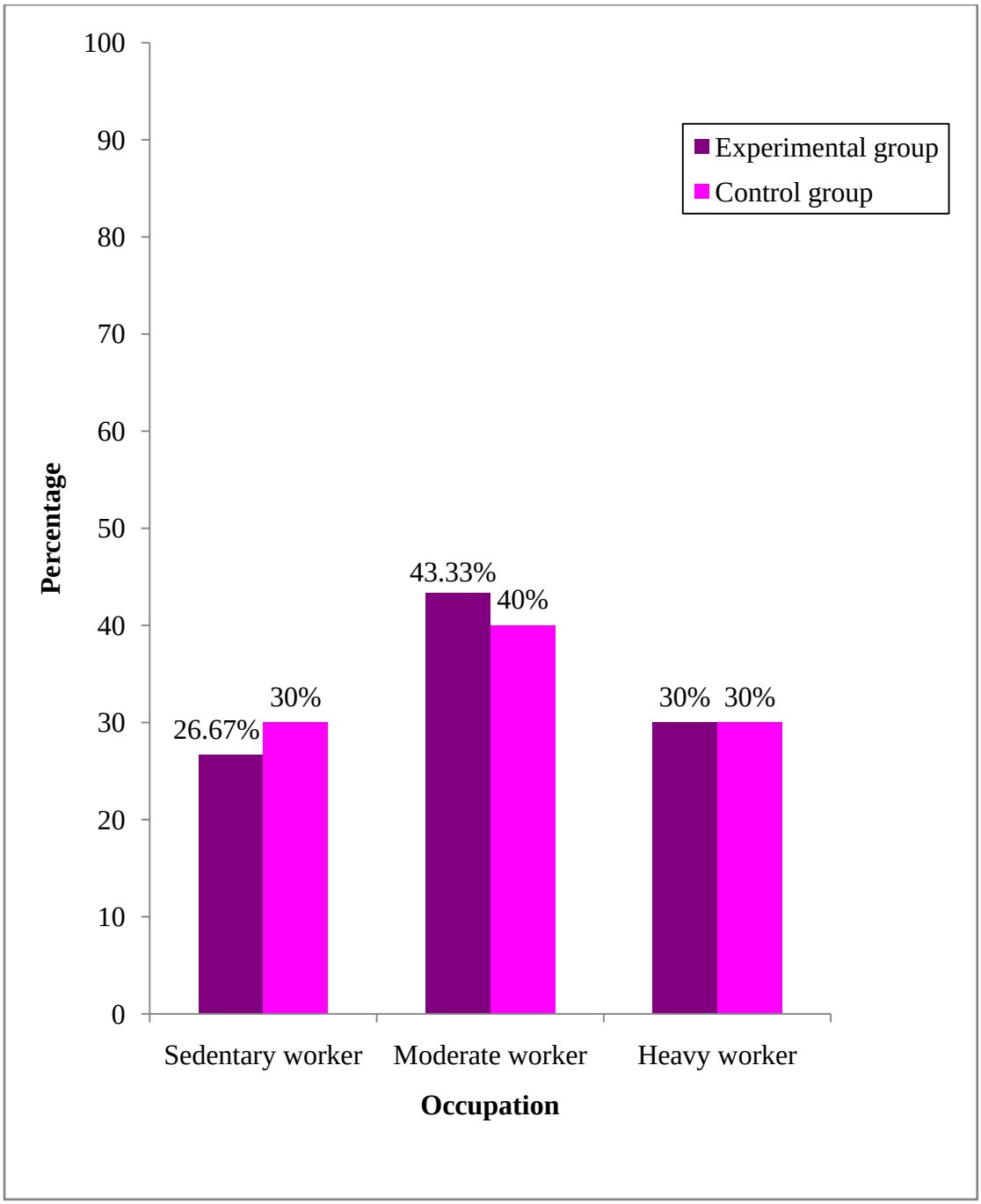


Figure 5: Percentage distribution of samples according to their Occupation

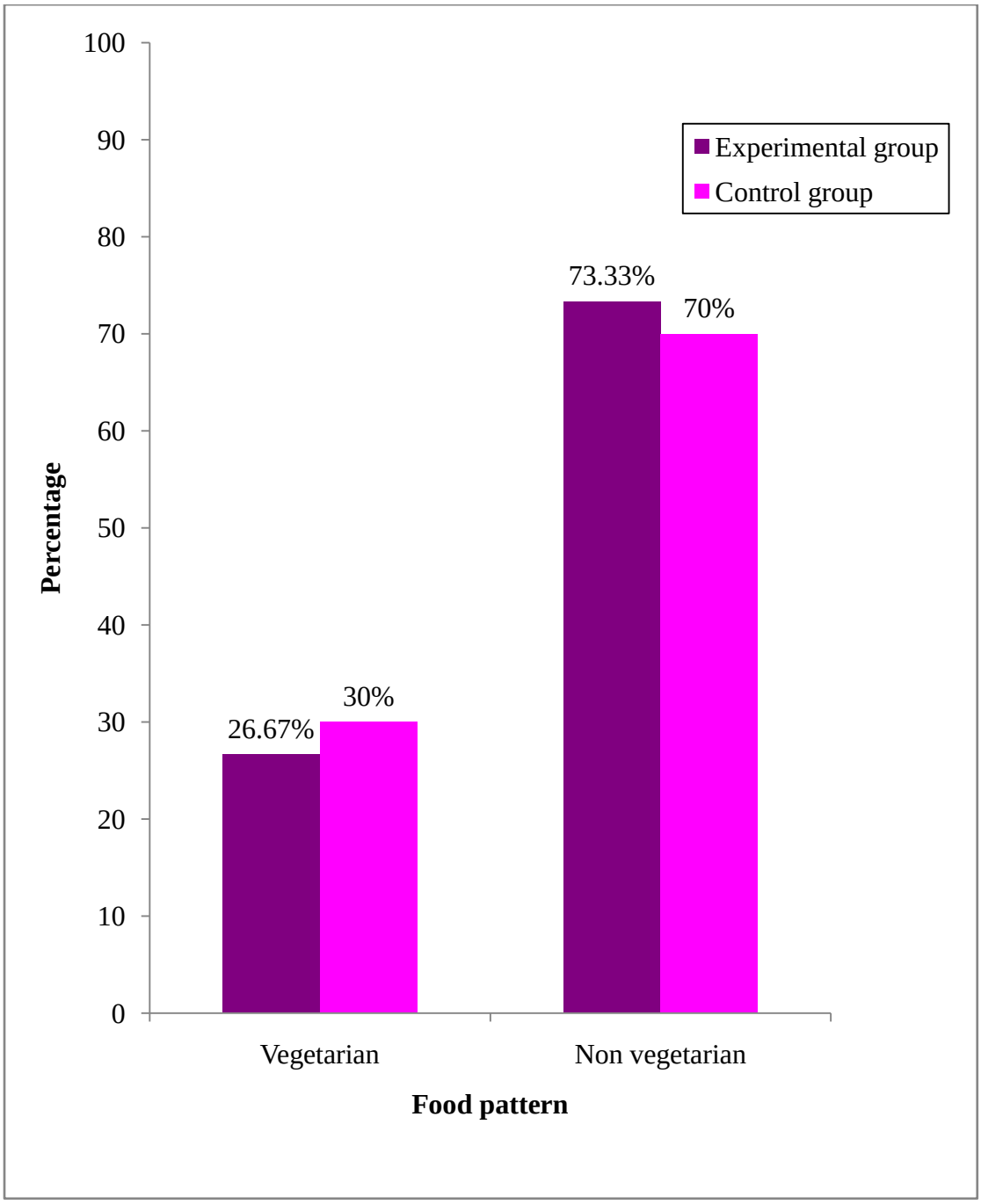


Figure 6: Percentage distribution of samples according to their Food pattern

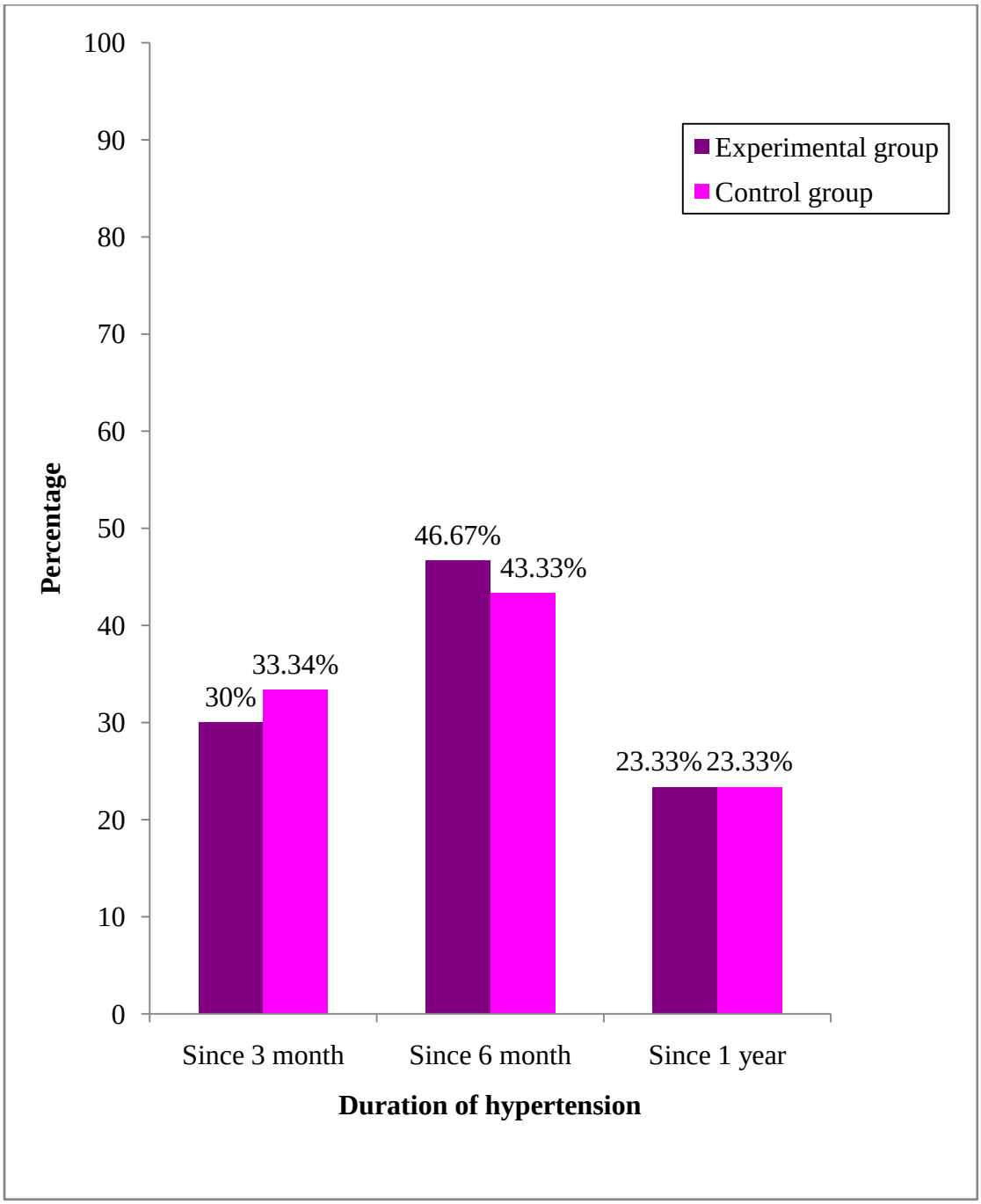


Figure 7: Percentage distribution of samples according to their Duration of hypertension

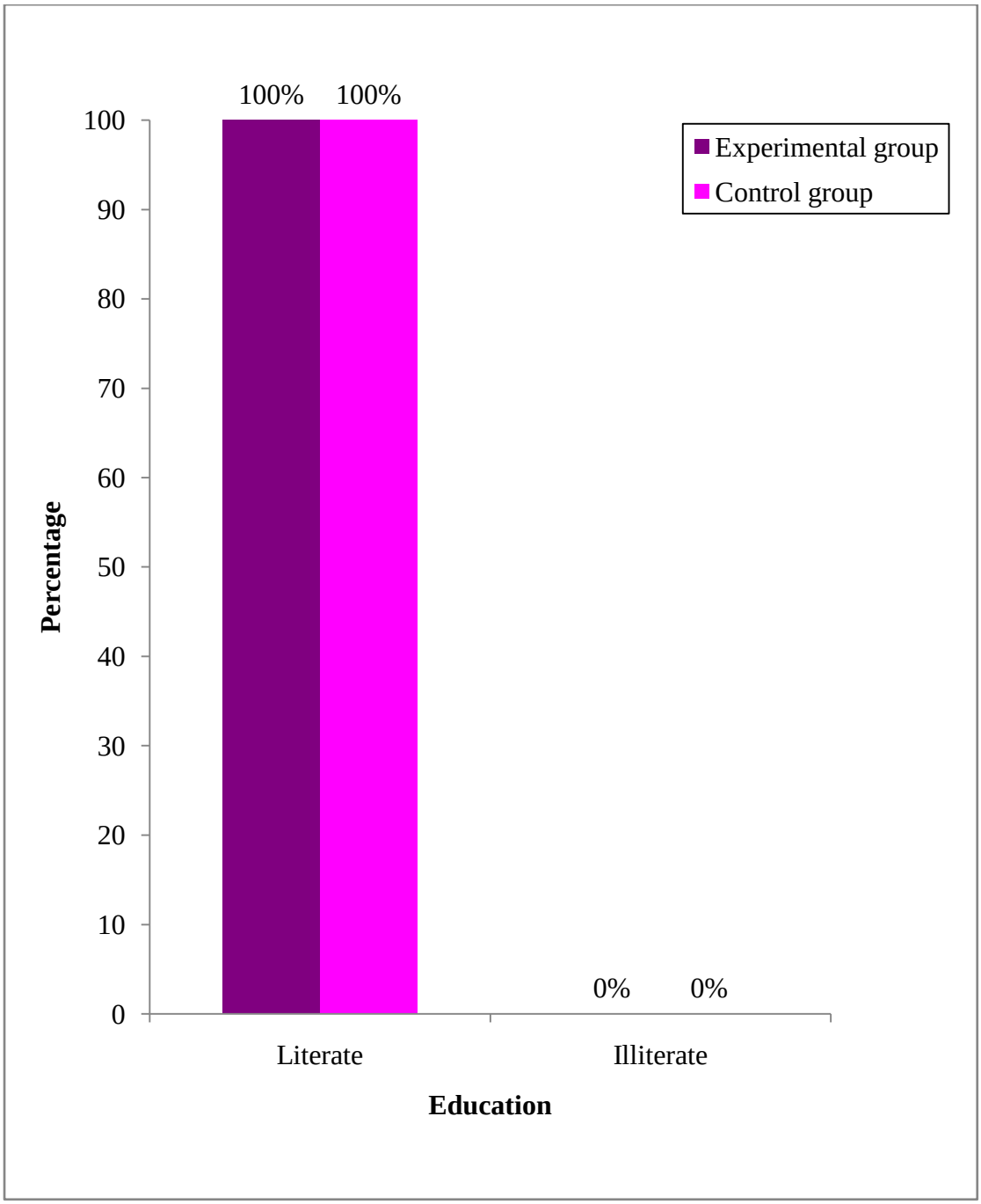


Figure 8: Percentage distribution of samples according to their Duration of Education

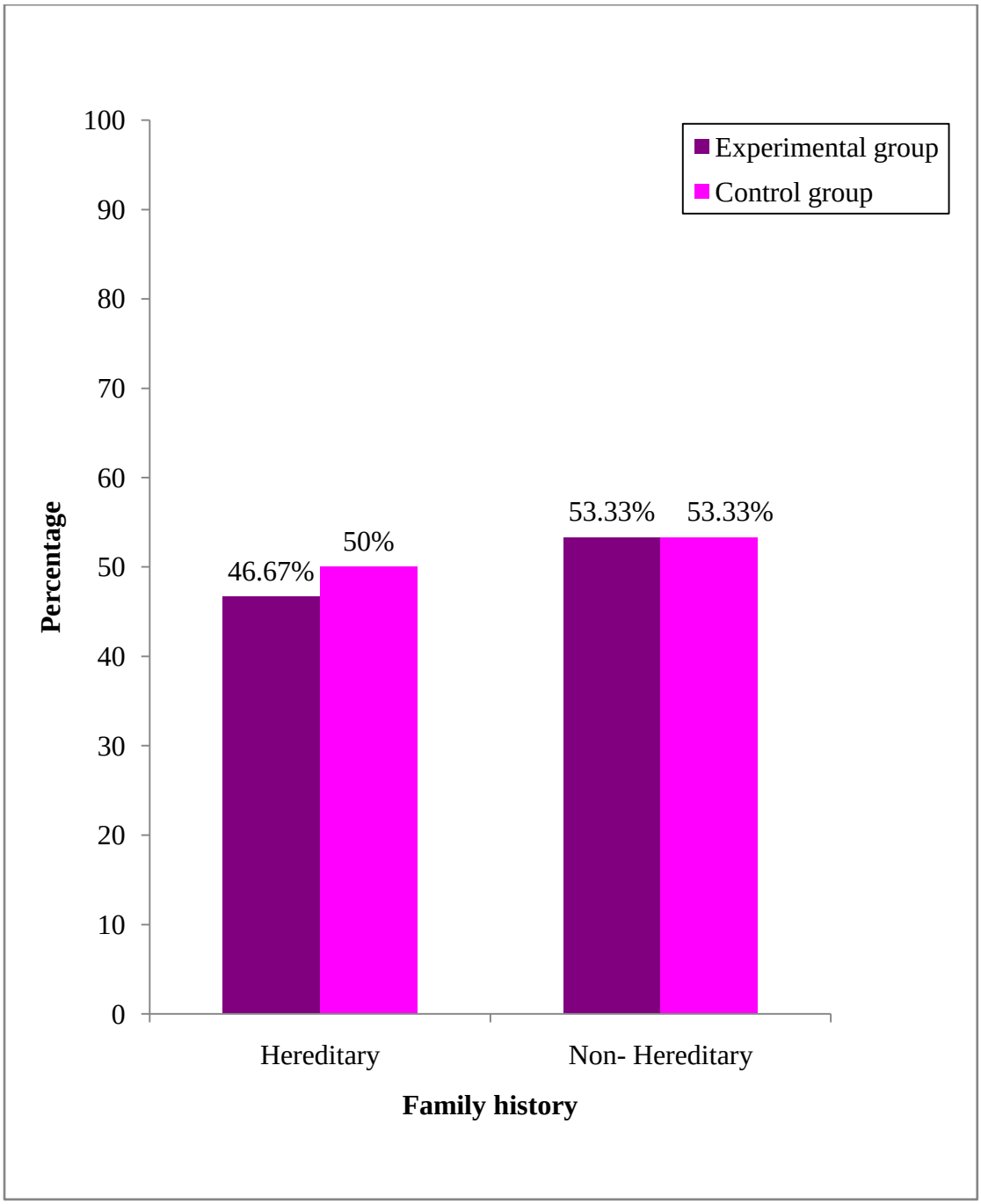


Figure 8: Percentage distribution of samples according to their Duration of Family history

SECTION B

Assessment of blood pressure level among client with hypertension in experimental group and control group before intervention.

Table : 2

Frequency and percentage distribution among client with hypertension according to the blood pressure level in experimental group and control group before intervention

(N=60)

Level of blood pressure	Experimental group		Control group	
	f	%	f	%
Normal	0	0.00	0	0.00
Pre hypertension	6	20.00	7	23.33
Stage 1 hypertension	18	60.00	17	56.67
Stage 2 hypertension	6	20.00	6	20.00

Table:2 represent during pre test, in experimental group the blood pressure level 0(0%) had normal blood pressure, 6(20.00%) had pre hypertension,18(60%) had stage 1 hypertension, 6(20.00%) had stage 2 hypertension. In control group the blood pressure level 0(0%) had normal blood pressure level, 7(23.33%) had pre hypertension, 17(56.67%) had stage 1 hypertension, 6(20.00%) had stage 2 hypertension

Assessment of blood pressure level among client with hypertension in experimental group and control group after intervention.

Table : 3

Frequency and percentage distribution among clients with hypertension according to the blood pressure level in Experimental group and control group after intervention

(N=60)

Level of blood pressure	Experimental group		Control group	
	f	%	f	%
Normal	9	30.00	3	10.00
Pre hypertension	12	40.00	4	13.33
Stage 1 hypertension	9	30.00	18	60.00
Stage 2 hypertension	0	0.00	5	16.67

Table: 3 shows that during post test, in experimental group the blood pressure level 9 (30.00%) had normal blood pressure, 12(40.00%) had pre hypertension, 9(30.00%)had stage1 hypertension, 0(0.00%) had stage 2 hypertension. In control group the blood pressure level 3(10.00%) had normal blood pressure, 4(13.33%) had pre hypertension, 18(60.00%) had stage 1 hypertension, 5(16.67%) had stage 2 hypertension.

SECTION C:

Comparison of pre test and post test blood pressure level among client with hypertension in experimental group and control group.

Table : 4

Mean, standard deviation and paired 't' test value on pre and post test blood pressure level among clients with hypertension in experimental group and control group N=60

Group	Test	Mean	SD	Mean Difference	Paired 't' test	5% level of significance
Experimental	Pre test	3.0	1.0	1.3	7.28	29,df
	Post test	1.70	.80			2.042
Control	Pre test	2.96	.98	0.13	.75	29,df
	Post test	2.83	.91			2.042

Table: 4 represent, the mean score on blood pressure level in experimental group was 3.0 in pre test and 1.70 in post test. The paired 't' value was 7.28 which is significant at $p>0.05$. It shows that yoga was effective in reducing the blood pressure level among clients with hypertension. Hence the research hypothesis (H1) is accepted.

In control group the mean score on blood pressure level was 2.96 in pretest and 2.83 in post test. The paired 't' value was 0.75 which is not significant.

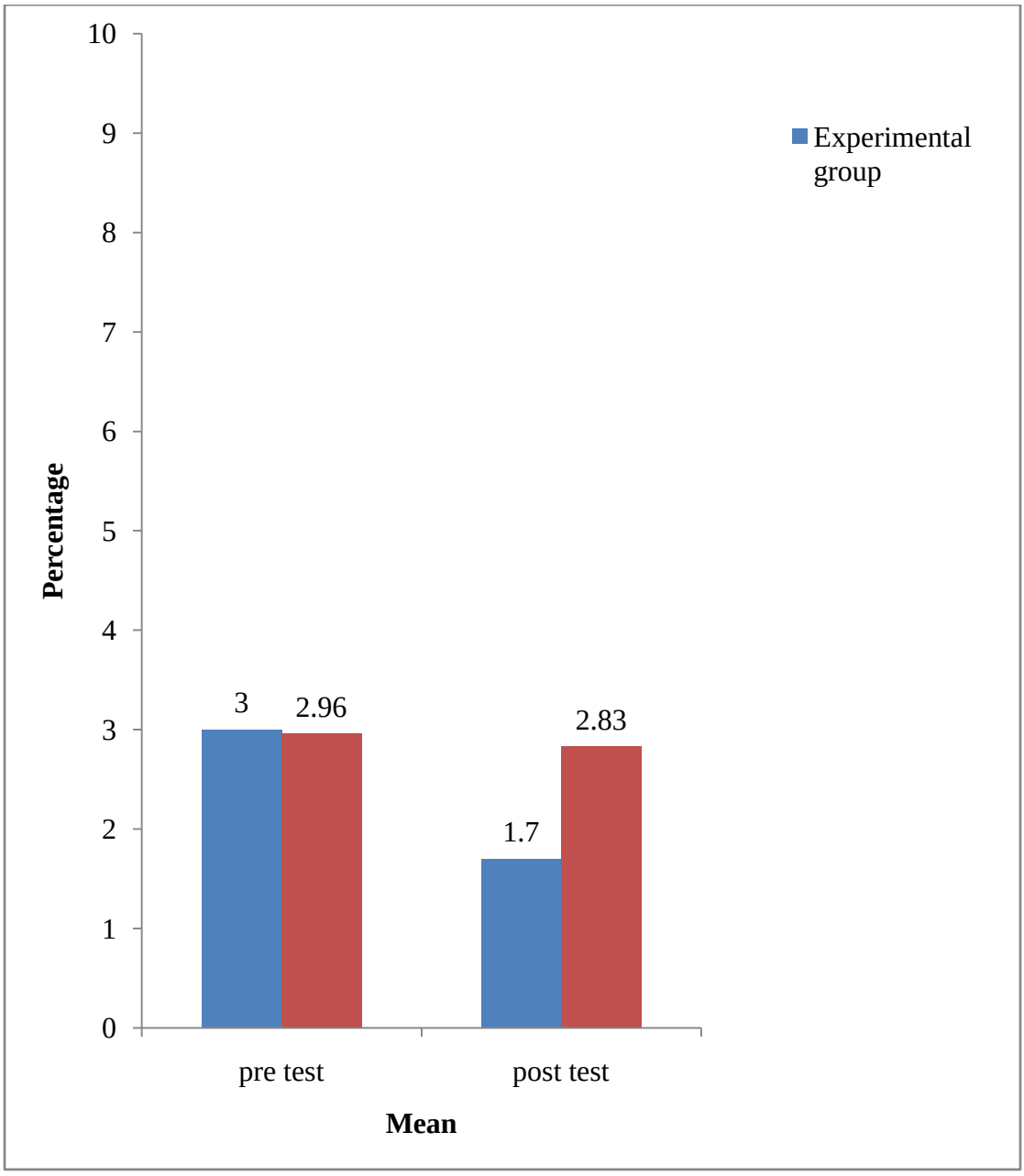


Figure 10: Comparison of mean in experimental group and control group

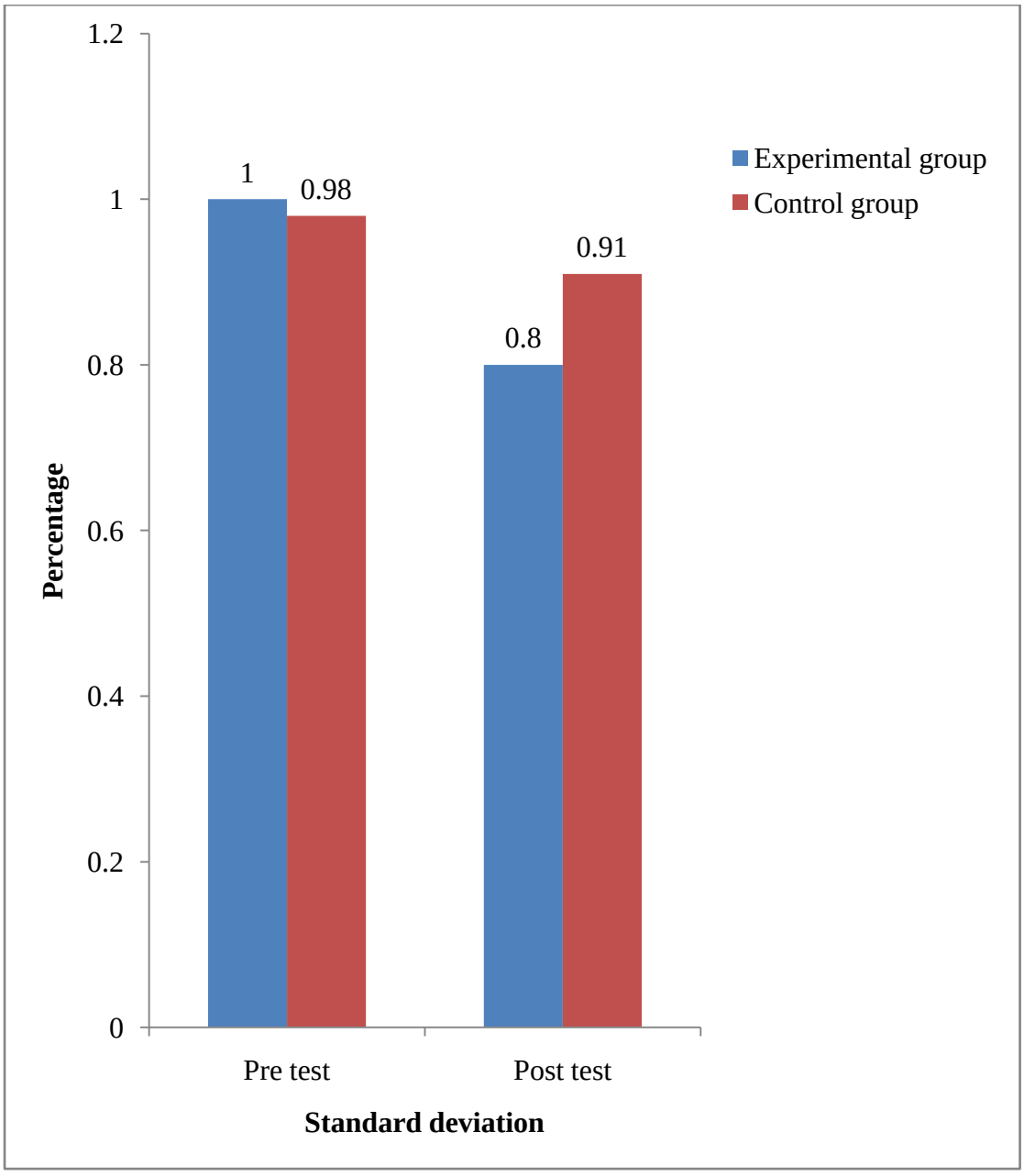


Figure 11: Comparison of standard deviation in experimental group and control group

Comparison of post test blood pressure level among client with hypertension in experimental group and control group.

Table : 5

Mean, standard deviation and 't' value on blood pressure level among client with hypertension in experimental group and control group after intervention

N=60.

Group	Test	Mean	SD	Mean difference	't' value	5% level of significant
Experimental	Post test	1.70	0.88	1.13	5.16	58 df 2.0, significant
Control	Post test	2.83	0.91			

Table:5 represent, the mean score of blood pressure level in experimental group was 1.70 in post test and 2.83 in control group post test. The estimated value was 5.16 which is significant at $p>0.05$. It shows that yoga was effective in reducing the blood pressure level among client with hypertension. Hence the research hypothesis (H2) is accepted

SECTION D:

Table : 6 Association between the pre test blood pressure level among client with hypertension of selected demographic variables in experimental group and control group.

Sl. no	Variables	Experimental group	χ^2	Control group	χ^2	5 % level of significant
1	Age					
	a) 36-45years	7		8		
	b) 46-55years	10	15.73	10	14.61	9.46 S
	c) 56-65years	13		12		
2	Gender					
	a) Male	14	3.2	15	3.15	5.99 NS
	b) Female	16		15		
3	occupation					
	a) Sedentary worker	8		9		
	b) Moderate worker	13	6.22	12	7.06	9.49 NS
	c) Heavy worker	9		9		
4	Food pattern					
	a) vegetarian	8	12.36	9	10.32	5.99 S
	b) Non vegetarian	22		21		
5	Duration of hypertension					
	a) Since3 month	9		10		
	b) Since6month	14	7.36	13	7.53	9.49 NS
	c) Since1 year	7		7		
6	Family history					
	a) Hereditary	14	1.42	15	1.78	5.99 NS
	b) Non hereditary	16		15		

Table:6 shows that there is no association between pre test level of blood pressure among the hypertensive clients and their selected demographic variables like occupation ,Gender, Duration of hypertension, family history expect age, Food pattern

CHAPTER – V

DISCUSSION

This chapter deals with the discussion of the data analyzed based on the objective and hypothesis of the study. The problem stated was an experimental group, a study to evaluate the effectiveness of yoga in reducing the blood pressure level among hypertensive clients in selected village of Kanayakumari District. The discussion was based on the objectives of the study.

Objectives

- To assess the pre and post test blood pressure level among hypertensive clients in experimental control group.
- To compare the pre and post test level of blood pressure among hypertensive clients in control group and experimental group.
- To find out the effectiveness of yoga on post level of blood pressure among hypertensive clients in experimental and control group.
- To determine the association between the pre test blood pressure level among clients with hypertension with their selected demographic variables such as age, sex, education, occupation, food pattern, duration of illness, Family history.

The first objective was to assess the pre and post test blood pressure level among hypertensive client in experimental and control group.

In pre test the blood pressure level in experimental group was 0(0%) had normal blood pressure, 6(20.00%) had pre hypertension,18 (60%) had stage 1 hypertension, 6(20.00%) had stage 2 hypertension. In control group the blood pressure level 0(0%) had normal blood pressure level, 7(23.33%) had pre hypertension, 17(56.67%) had stage 1 hypertension, 6(20.00%) had stage 2 hypertension. In post test, the blood pressure level in experimental group was 9 (30.00%) had normal blood pressure, 12(40.00%) had pre hypertension, 9(30.00%) had stage1 hypertension, 0(0.00%) had stage 2 hypertension. In control group the blood pressure level 3(10.00%) had normal blood pressure, 4(13.33%) had pre hypertension, 18(60.00%) had stage 1 hypertension, 5(16.67%) had stage 2 hypertension.

Pushpanathan punitha, (2015) Conducted a study on assess the effectiveness of yoga for hypertension. Research were randomized into two group control group and yoga group. The control group was treated only with the allopathic medicine . The yoga group was to practice the yoga for 12 weeks. The participants blood pressure level was recorded before and after the yoga. There was a significant decreased in the systolic blood pressure and diastolic blood pressure in the yoga group($p>0.005$) at the end of yoga therapy. The study conclude that twelve weeks of yoga therapy reduced both the systolic blood pressure and diastolic blood pressure in the yoga group. The study coclude that post test value is decreased due to yoga to reduce the blood pressure level. Hence the research hypothesis is accepted.

The second objective was to compare the pre and post test level of blood pressure among hypertensive clients in control group and experimental group.

The mean score on blood pressure level in experimental group was 3.0 in pre test and 1.70 in post test. The paired‘t’ value was 7.28 which is significant at $p>0.05$. In control group the mean score on blood pressure level was 2.96 in pretest and 2.83 in post test It shows that yoga was effective in reducing the blood pressure level among clients with hypertension

Deepak (2017), conducted a study on evaluate the effect of yoga practice on reducing hypertension. In this study to select the 60 participants. 30 experimental and 30 control groups. The result where compared with 26 healthy volunteers. We examined the effect of yoga on physiological parameters in a 1 month pilot study. The participants practice yoga for 1 month daily morning . We studied before and after one month of yoga practice. This study conclude that yoga practice reducing the blood pressure level.

The third objective was to find out the effectiveness of yoga on post test level of blood pressure among hypertensive clients between control group and experimental group.

The mean score of blood pressure level in experimental group was 1.70 in post test and 2.83 in control group post test. The estimated value was 5.16 which is significant at $p>0.05$. It shows that yoga was effective in reducing the blood pressure level among client with hypertension.

Terry Selfe, (2013), Conducted a study on effectiveness of yoga therapy for reducing blood pressure in adults with hypertension. Two authors independently assessed risk of bias using Cochrane risk of bias tool. 17 participants are include in this study. In yoga group significant effect on systolic blood pressure ($p=0.002$) and diastolic blood pressure ($p=0.001$).This study conclude that the blood pressure level in the experimental group due to the yoga therapy. Hence the research hypothesis (H2) is accepted.

The fourth objective was to determine association between the pre test blood pressure level among client with hypertension with their selected demographic variables such as age, gender, education, occupation, duration of illness, food pattern, family history.

There is no association between pre test level of blood pressure among the hypertensive clients and their selected demographic variables like occupation , Gender, Duration of illness, family history expect age, Food pattern

CHAPTER - VI

SUMMARY, CONCLUSION, NURSING IMPLICATION AND RECOMMENDATIONS

This chapter deals with the summary of the study, conclusion drawn, nursing implications and recommendations of the study.

Summary

Quantitative evaluative approach with True experimental design was used to determine the effectiveness of yoga among clients with hypertension in selected village. The conceptual framework was based on General System Theory of Ludwig Von Bertalanffy (modified) (1968) as explained by Newby (1996).The tool used in the study consisted of two parts. Part one was demographic variables and the part two was yoga. Simple random sampling technique was used to collect the sample and the data was collected from the study participant in experimental group and control group. The data were collected and analyzed by using descriptive and inferential statistics. The level of significance was assessed by $p > 0.05$ to test the hypothesis.

Findings

The mean score on blood pressure level in experimental group was 3.0 in pre test and 1.70 in post test. The paired‘t’ value was 7.28 which is significant at $p>0.05$. It shows that yoga was effective in reducing the blood pressure level among clients with hypertension. In control group the mean score on blood pressure level was 2.96 in pretest and 2.83 in post test. The paired‘t’ value was 0.75 which is not significant. There is no association between pre test level of blood pressure among the hypertensive clients and their selected demographic variables like occupation , Gender, Duration of illness, family history expect age, Food pattern

Conclusion

From the result of the study it was concluded that yoga therapy was effective in reducing the blood pressure level among clients with hypertension.

Implications

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

Implications for Nursing Practice

- Nursing person should develop in depth knowledge about hypertension in adults.
- Nurses should be knowledgeable regarding the benefits and effects of yoga.
- Nurses should promote and encourage to practice the yoga for hypertensive clients.

Implications for Nursing Education

- The nurse educators need to be equipped with adequate knowledge regarding the yoga for hypertensive clients.
- Nursing students should receive adequate training regarding the benefits of yoga.
- Conduct workshops or conferences for students regarding the benefits of yoga for hypertensive clients in day today nursing practice.

Implications for Nursing Administration

- Nurse administrator should be take initiate to conduct the periodical in service education programme in order to minimize the complication of hypertension.
- Nurse administrator should emphasize and encourage the staff regarding the practice of yoga.
- Nursing administrator can organize conferences, seminars, and workshops for nurses to encourage the practice yoga for home in hypertensive clients.

Implications for nursing research

- Nurses should conduct research to further clarify the benefits and optimal association of yoga for hypertensive clients.

- Encourage further research to be conducted regarding the effects of yoga for hypertensive clients.
- Disseminate the findings of research through conferences, seminars, and publishing in nursing journals.

Recommendations

The following studies can be undertaken to strengthen yoga on reducing blood pressure level as a good remedy for hypertensive clients.

- A similar study can be conducted with increased in the sample size.
- A similar study can be conducted among another hypertensive clients.
- A similar study can be conducted in various community settings.

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APPENDICES: A

LETTER SEEKING PERMISSION TO CONDUCT A STUDY

Tel. (O) : 273297
270753

GLOBAL COLLEGE OF NURSING

Recognised by the TNC & INC
Affliated to Tamil Nadu Dr. M.G.R. Medical University
Edaivilagam, Nattalam, Kanyakumari District.

Off: S.G. Multi Speciality Hospital, Old Theatre Jn, Pammam, Marthandam - 629 165,
K.K. Dist., Tamil Nadu. Mob : 9443606955, 9944110448.

To

The Medical Officer,
Primary Health Centre,
Cherikadai.

Respected Sir,

Sub: Requisition for the grant of consent for M.Sc. (N) student to conduct research – Reg.

Ms. Vinitha V.L., II year M.Sc. (N) student of Global College of Nursing, Nattalam, requires to conduct a research study at your Community Settings (Rural Community Area, Cherikadai). Hence I request you to kindly grant her your consent to conduct the study on following topic.

The title of the study:

"A STUDY TO EVALUATE THE EFFECTIVENESS OF YOGA IN REDUCING THE BLOOD PRESSURE LEVEL AMONG HYPERTENSIVE CLIENTS IN SELECTED VILLAGES AT KANYAKUMARI DISTRICT".

Thanking You,

Yours faithfully,

Principal
GLOBAL COLLEGE OF NURSING
Edavilagam,Nattalam,
Kanyakumari District - 629 165

(PRINCIPAL)

GLOBAL COLLEGE OF NURSING
NATTALAM, K.K. DIST. 629 165

மருத்துவ அலுவலர்
அரசு ஆரம்ப சுகாதார நிலையம்
பள்ளியாடி - 629 169

APPENDICES: B

ETHICAL CLEARANCE CERTIFICATE

Tel. (O) : 273297
270753

GLOBAL COLLEGE OF NURSING

Recognised by the TNC & INC
Affliated to Tamil Nadu Dr. M.G.R. Medical University
Edaivilagam, Nattalam, Kanyakumari District.

Off: S.G. Multi Speciality Hospital, Old Theatre Jn, Pammam, Marthandam - 629 165,
K.K. Dist., Tamil Nadu. Mob : 9443606955, 9944110448.

GLOBAL COLLEGE OF NURSING
EDAVILAGAM, NATTALAM, KANYAKUMARI

ETHICAL CLEARANCE CERTIFICATE

Dear Ms. Vinitha V.L. (Community Health Nursing)

Sub: Your letter dated 25/04/2016 for the approval of above reference study and its related documents.

Ref: **"A study to evaluate the effectiveness of Yoga Therapy in reducing Blood Pressure among Hypertensive clients at selected Village, Kanayakumari District"**. The Ethics committee of Global College of Nursing, Edavilagam, Nattalam, Marthandam, Reviewed and discussed the study proposal the documents submitted by you related to the content of the above referenced study and its meeting held on 04/05/2016.

The following Ethical committee members were present at the meeting held on 04/05/2016.

S.No.	Name	Profession	Position in the committee
1.	Prof. Josephine Ginigo	Nursing	Chair Person
2.	Dr. Sam.G.Jeba Joselin	Medical	Basic Medical Scientist
3.	Mrs. Vijila Berlin	Nursing	Clinician
4.	Adv. Sreenivasan	Legal	Legal Exports
5.	Prof. A. J. Benzam	Social	Social Scientist
6.	Dr. Ahilan	Management	Philosopher
7.	Mr. Sujin	Lay person	Community Person

After due Ethical and scientific consideration, the ethics committee has approved the above presentation submitted by you.

With Regards

Date: 05/05/2016
Place: Nattalam

Prof. Josephine Ginigo.,
Ethical Committee Chair Person
Global College of Nursing,
Edavilagam, Nattalam

Principal
GLOBAL COLLEGE OF NURSING
Edavilagam,Nattalam,
Kanyakumari District - 629 19

APPENDICES: C

CERTIFICATE FOR YOGA

APPENDICES: D

LETTER SEEKING EXPERTS, OPINION FOR VALIDITY OF TOOL

From

Mis.vinitha v L
MSC Nursing II Years
Global College of Nursing
Nattalam

To

Respected Madam,

Sub: Requisition for expert opinion and suggestion for content validity.

This is to state that myself Vinitha v l of Global College of Nursing has selected the topic "**A Study to evaluate the effectiveness of yoga therapy in reducing the blood pressure among hypertensive clients at selected village, kanayakumari district"**, for my dissertation to be submitted to TamilNadu Dr. MGR Medical University as the partial fulfillment of requirement for the award of Master of Science in nursing.

Here, I request you to go through the items and give your valuable suggestion and opinion to develop the content validity of the tool as well as suggest for the modification in the remark column.

Thanking you

Date: Yours sincerely

Vinitha V L

APPENDICES: E

EVALUATION CRITERIA, CHEKLIST FOR TOOL VALIDATION

Introduction

The expert is requested to go through the following criteria for evaluation. Three columns are given for responses and a coloumn for remarks. Kindly place tick mark in the appropriate column and give remarks.

Interpretation of column

Column I : Meets the criteria

Column II : Partially meet the criteria

Column III : Does not meet the criteria

Serial No	Criteria	1	2	3	Remarks
1	Scoring - Adequacy - Clarity - Simplicity				
2	Content - Logical sequence - Adequacy - Relevance				
3	Language - Appropriate - Clarity - Simplicity				
4	Practicability - It is easy to score - Does it precisely - Utility				

Signature :

Name :

Designation :

Address :

Any other Suggestion

APPENDICES: F

LIST OF EXPERT FOR TOOL VALIDATION

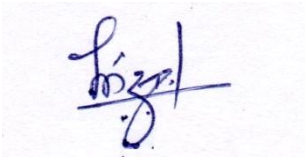
I. **Ashwin Pradeep MBBS,**
Medical officer,
Primary Health Centre
Cherikadai.

II. **Mrs.Anbu Malar (M. Sc.,N)**
Vice principal,
White Memorial College of Nursing,
Attoor.

III. **Mrs. J. Christal Sona (M. Sc.,N)**
Associate Professor,
Sri Ramakrishna College Of Nursing,
Kulasekharam.

IV. **Mrs. S. B. Sulekha (M. Sc.,N)**
Assistant Professor,
White Memorial College of Nursing
Attoor.

V. **Mrs. L. Liza (M. Sc., N)**
Associate Professor,
Grace College Of Nursing
Padanthalumoodu.



VI. **Mrs. S. Subha (M. Sc., N)**
Associate Professor,
Sri Ramakrishna College of Nursing,
Kulasekharam.

APPENDICES: G

TOOLS FOR DATA COLLECTION

SECTION-A

DEMOGRAPHIC VARIABLES

1. Age

a) 36-45years

b) 46-55years

c) 56-65years

2. Sex

a) Male

b) Female

3. Occupation

a) Sedentary worker

b) Moderate worker

c) Heavy worker

4. Food pattern

a) vegetarian

b) Non vegetarian

5. Duration of illness

a) Since 3month

b) Since 6 month

c) Since 1 year

6. Education

a) literate

b) Illiterate

7) Area of residence

a) urban

b) rural

SECTION: B

SPHYGMOMANOMETER

Procedures

- To begin blood pressure measurement, use a properly sized blood pressure cuff. The length of the cuff's bladder should be at least equal to 80% of the circumference of the upper arm.
- Wrap the cuff around the upper arm with the cuff's lower edge one inch above the antecubital fossa.
- Lightly press the stethoscope's bell over the brachial artery just below the cuff's edge. Some health care workers have difficulty using the bell in the antecubital fossa, so we suggest using the bell or the diaphragm to measure the blood pressure.
- Rapidly inflate the cuff to 180mmHg. Release air from the cuff at a moderate rate (3mm/sec).
- Listen with the stethoscope and simultaneously observe the sphygmomanometer. The first knocking sound (Korotkoff) is the subject's systolic pressure. When the knocking sound disappears, that is the diastolic pressure (such as 120/80).

- Record the pressure in both arms and note the difference; also record the subject's position (supine), which arm was used, and the cuff size (small, standard or large adult cuff).
- If the subject's pressure is elevated, **measure blood pressure** two additional times, waiting a few minutes between measurements.

APPENDICES: H

YOGA THERAPY

Pranayama

Pranayama is the conscious awareness of breath: the life force that both energizes and relaxes the body. The term is derived from the Sanskrit, prana, meaning "life force," and *ayama*, meaning "extension."

1. Bhastrika Pranayama

Bhastrika Pranayama is all about blowing your bellows. "Bhastrika" in Sanskrit means bellows. It allows your body to have huge amount of oxygen. It is a breathing exercise which is to be done in fresh air so morning time and evening time is best for this pranayama. This pranayama needs to be done for at least twice a day for 3- 5 minutes. In this pranayama one need to fill the lungs with oxygen by deep inhaling through nostrils and exhaling it out.

Benefits of Bhastrika Pranayama

- Improves the blood circulation
- Keeps away the stress and hypertension by relaxing the body and mind
- Keeps away the heart related problems,
- Releases depression
- Improves neurological problems.

Steps of Bhastrika Pranayama

- Sit on the Padmasana (Lotus Pose) with eye closed.

- Take a deep breath in (inhale), filling the lungs with air.
- After that gently breathe out.
- In this inhaling and exhaling should take the same length of time-2.5 seconds to breathe in and 2.5 seconds to breathe out.
- While you breathe in (inhale) assume that you are taking in positive energy and vibrations, and that you are being energized by them.
- During breathe out (exhale), imagine that you are taking out all the toxins from our body and find. (feel that during breathe out all the toxins comes out through your breathe)

2. Kapalbhati Pranayama

Kapalbhati Pranayam in Sanskrit means skull shining breadth. It is again a breathing exercise where you need to breath in with all pressure on your stomach and exhale out with a hissing sound. It solves all kind of stomach disorders, weight loss and other respiratory problems. Kapalbhati Pranayama can be followed from 5 minutes

Benefits of Kapalbhati Pranayam

- Improves lungs and other respiratory organs.
- Keeps stress away.
- Helps in weight loss.
- Improves respiratory diseases such as asthma.
- Improves reproductive organs.

Steps of Kapalbhati Pranayama

- First sit on the Padmasana and close your eyes and keep the spine straight.
- Now take a deep breath **(inhale deeply)** through your both nostrils until your lungs are full with air.
- Now Exhale through both nostrils forcefully, so your stomach will go deep inside. As you exhale you feel some pressure in your stomach.
- While the process of exhaling there is a hissing sound, at this point try to think that your disorders are coming out of your nose.
- Repeat this process for 5 minutes.

3. Anulom Vilom Pranayama

Anulom Vilom Pranayama is a breathing exercise which helps to purify body and mind. It is helpful to release stress and anxiety it is perfect for any age. It is followed by the process of breathing in through one side of nostril (right /left) and breathing the air out through the other part. This pranayama can be done regularly for 5 minutes.

Benefits of Anulom Vilom Pranayama

- Improves Blood circulation
- Removes artery blockage
- Keeps your heart healthy
- Keeps away stress, depression
- Improves neurological disorder

Steps of Anulom Vilom Pranayama

- Anulom Vilom Pranayama is very easy to do, first of all close your eyes and sit in Padmasana and rest your hands on your knees.
- Close the right nostril with the right thumb. Inhale slowly through the left nostril, inhale the oxygen as much as you can, this will fill your lungs with air.
- Remove your thumb from your right nostril, as you remove your thumb from right nostril just exhale.
- When you exhale use your middle finger to close your left nostril then inhale with our right nostril and remove thumb from right nostril then exhale. Repeat this process for 5 minutes.

4. Bahramari Pranayama

Bahramari Pranayama is also known as" human bee breathing" It is the process of breathing with the humming sound like bees. This exercise is really stress busters. It releases anger, stress and agitation. It is the process where you need to keep your eyes close and inhale through nostril but while exhaling out you need to produce humming sound keeping your mouth closed. This pranayama can be done regularly for 5 minutes.

Benefits of Bahramari Pranayama

- It is excessively effective for high blood pressure.
- It releases stress, anxiety, and hypertension
- Cures nervous and sinus problem
- Helps to have a stable mind

Steps of Bhramari Pranayama (Bee breath): –

- Sit on the Padmasana or any other sitting Asana.
- Close your eyes and breathe deeply.
- Now close your ears lids or flaps with your thumbs.
- Place your index finger just above your eyebrows and the rest of your Fingers over your eyes with your middle fingers.
- Applying very gentle pressure to the sides of your nose.
- Now concentrate your mind on the area between your eyebrows.
- Keep your mouth closed; breathe out slowly through your nose with making a humming sound of Om.
- Repeat this process for 5 times.

5.Udgeeth Pranayama

Udgeeth Pranayama is also known as "Omkari Jap". It's the power of "om" which fills your body and mind with positivity and freshness. This pranayama is so simple. In this pranayama one needs to simply inhale deep and while exhaling do the chant of "om". This exercise can be followed for 5 minutes regularly.

Benefits of Udgeeth Pranayam

- Ii cures high blood pressure
- It releases hypertension
- It relives anxiety, tension, and anger
- It cures nervous problem, insomnia.

Steps of Udgeeth Pranayama: –

- Sit on the Padmasana and Close your eyes, Your spine should be straight.
- Breathe deeply through your nose till diapgram is full with air, and exhale.
- While exhaling chant the word Om.
- Make sure to keep the sound of "O" long and the "M" short (OOOOOOOOm). Udgeeth Pranayama is very simplest pranayama among to all pranayama.Repeat this 3 to five (or 5 minutes if you have time)

6. Pranav Pranayama

Pranav Pranayam is simply the process of inhaling and exhaling concentrating within you and imagining of the soul power of earth that is God. This pranayama can be followed out from 5 minutes to an hour.

Benefits of Pranav Pranayama

- It strengthens the mind and body.
- It relieves mental stress
- It gives relief from physical disorders

Steps for Pranav Pranayama

- Sit in the Padmasana, Vajransana or sukhasana, as you wish.
- Keep your eyes closed, your spine and head should be straight.
- Keep your fingers in '**Gyan mudra'.**
- Focus on your normal breathing as you inhale and exhale or while normal breathing you can also focus on the word Om in your mind.

- Become centered within yourself and feel your connection with the positive energies which is present in the Universe.
- Do this process for 2 or 3 minutes.
- After two or three minutes raise your hands above your head and rub your palms together for about 20 seconds.
- After that place your palms over your eyes, feel the warmness of your palms over your eyes.
- Now slowly – slowly open your eyes (don’t open your eyes immediately) with your hands still in front of your eyes.
- After that slowly lower down your hands and completely open your eyes.
- You can also increase the time limit from 2 minutes to 1 hour as per your available

APPENDICES: I

PHOTOGRAPHS