"A STUDY TO ASSESS THE EFFECTIVENESS OF BENSON'S RELAXATION THERAPY ON LEVEL OF BLOOD PRESSURE AMONG PREGNANCY INDUCED HYPERTENSIVE MOTHERS IN SELECTED HOSPITAL BANGALORE"

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ABSTRACT

Introduction: Benson's relaxation technique is a simple method which helps to reduce blood pressure. Apart from the pharmacological measure, were it complicated to fetus. Nurse can implement certain non pharmacological methods into practice for reducing BP in PIH mothers. Based on the studies related to the effectiveness of breathing exercises, and relaxation therapy the investigator feel it as a strong need to study the effect of Benson's relaxation therapy on antenatal mother with PIH in relation to the reduction in the level of BP.

Methodology: A evaluative approach and quasi experimental pre test post test control group design was adopted for the study. The samples from the selected maternity hospital were selected using convenient sampling technique. The samples consisted 60 mothers with pregnancy induced hypertension. The tools used for data collection was structured spigmomanometer and stethoscope.

Data collection procedure: Data was collected from 01.06.2022 to 30.06.2022 after obtaining administrative permission from selected hospital, Bangalore. The investigator personally explained the participants the need and assured them of the confidentiality of their responses. The data analysis was done by using both descriptive and inferential statistics.

Results:

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level ($P<0.05$) with a paired 't' value of

11.77. There exists a statistical significance in the difference of blood pressure score indicating the positive impact of Benson's relaxation therapy.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level (P<0.05) with a paired 't' value of

8.40. There exists a statistical significance in the difference of blood pressure score indicating the positive impact of Benson's relaxation therapy.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically not significant at 5% level (P<0.05) with a paired 't' value of 1.88. There exists a statistical no significance in the difference of blood pressure score indicating the no change in systolic BP among participants of control group.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically not significant at 5% level (P<0.05) with a paired 't' value of 1.57. There exists a statistical no significance in the difference of blood pressure score indicating the no change in systolic BP among participants of control group.

The present study revealed that, the computed Chi-square value for association between pretest level of blood pressure of participants of both groups and their selected demographic variables is found to be statistically significant at 0.05 levels for participant's gravid, parity and family history of PIH/HTN.

Conclusion: The primigravida woman had grade 1 and 2 pregnancy induced hypertension before Benson's relaxation therapy and is reduced after exposure to Benson's relaxation therapy among participants of experimental group. Since a very few studies have been conducted regarding this topic in India, so the nurse researcher can take further studies on the same topic.

Key Words: Pregnancy induced hypertension, Benson's relaxation therapy, effectiveness, mothers diagnosed with PIH

CHAPTER 1 INTRODUCTION

Pregnancy is a wonderful period in a woman's life where she spends each and every day in pleasant anticipation, waiting to hold her bundle of joy in her arms at the end of the ninth month. Most of the women may not have many problems during pregnancy, but some are not so lucky, face various problems related to

pregnancy and child birth.

Every year nearly 5, 29,000 women die globally due to pregnancy related causes for each death nearly 118 women suffer from life threatening events or sever acute morbidity.[1] A pregnancy can be considered as high risk pregnancy for a variety of reasons. Maternal factors include age (younger than age 15, older than age 35); weight (pre pregnancy weight under 100 lb or obesity); height (under 5 feet); history of complications during previous pregnancies including still birth, fetal loss, preterm labour and pre eclampsia or ecampsia; more than five pregnancies; bleeding during the third trimester; Rh incompatibility; gestational diabetics; post term pregnancy and pre existing chronic illness etc.[2]

Hypertension is one of the common complications met in pregnancy and it is one of the major causes of maternal morbidity and mortality leading to 10-15% of maternal deaths specially in developing world.[3] World health organization estimate that at least one woman dies every seven minutes from complications of hypertensive disorders of pregnancy.[4]

The incidence of PIH is about 5-10% of pregnancies, the range is considered to be about 5-7/10000 deliveries, in developing nation's 1/100 to 1/700 pregnancies.

PIH is the second leading cause of maternal death and main cause of infant morbidity and mortality. The incidence of PIH in primigravida is 16% and multigravida 7%, primary pre eclampsia occurs in 70% of PIH cases and secondary pre –eclampsia in 30% of all PIH cases. The incidence of PIH was found to be 14% in primigravida and 16% multigravida's in selected hospital of Belgaum, Karnataka.

PIH is defined as a sustained rise of blood pressure to 140/90 mm Hg or more on at least two occasions 4 or more hours apart beyond the 20th week of pregnancy or during the first 24 hours after delivery in a previously normotensive woman[5]. PIH is also more common in pregnant teens and in women over age 40. Many times, PIH develops during the second half of pregnancy, usually after the 20th week, but it can also develop at the time of delivery or right after delivery.

According to WHO expert committee(1996) and Joint National Committee report on prevention, detection and evaluation of high blood pressure recommends non pharmacological treatment as the first measure in control of hypertension. Non pharmacological measures like progressive muscle relaxation, meditation, visualization, yoga. exercise, breathing therapy are used to treat mothers with pregnancy induced hypertension.[6]

Studies have shown that techniques of relaxation and deep breathing go a long way in preparing pregnant women to cope with challenges and discomforts associated with child birth. Practicing relaxation and

breathing techniques also have a positive effect on the fetus. Several studies are being conducted on the impact of relaxation techniques on hypertension. The results revealed that all relaxation therapies were effective in reducing blood pressure.

Dr. Herbert Benson described a physiological response that is the opposite of the fight-or flight response. It results in decreased metabolism, decreased heart rate, decreased blood pressure, and decreased rate of breathing, as well as slower brain waves. Dr. Benson labelled this reaction the "relaxation response". The relaxation therapy is a simple practice that once can learn to take 10 to 20 minutes a day and can help to relive blood pressure and stress.

An experimental study was conducted to evaluate the effectiveness of breathing in reduction of hypertension .Study sample were 70 patients with uncontrolled hypertension treated with 15 minute slow breathing for 4 week. The study concluded that paced breathing is an effective method to treat patient with hypertension.

According to Benson's relaxation therapy due to various causes the body's fight –or –flight response, breathing become quick and shallow, reinforcing the messages of alarm being sent to the brain. If this over breathing continues, too much carbon dioxide is removed from the blood, which then loses its proper activity. Effectiveness of Benson's relaxation therapy helps to calm both the body and mind and helps to turn off the fight –or- flight response and enhance a healthy life.[7]

High blood pressure during pregnancy can decrease the amount of blood flow to the placenta, which affects the baby's supply of oxygen and nutrients. This may slow down the baby's growth and increase the risk of preterm delivery and if left unmanaged, this may result in fetal and maternal mortality. Therefore, antenatal mothers should be periodically investigated to rule out abnormal and sustained elevations in blood pressure, which should be managed appropriately in a timely manner to prevent complications arising from it.

hypertension.

NEED FOR THE STUDY

The current maternal mortality ratio (MMR) in India is 167 per one lack live births (2011- 2013), whereas the country's millennium development goal (MDG) in this respect is 109 per one lack live births by 2015. High levels of infant mortality (50 per 1,000 births), neonatal mortality (29 per 1,000 live births), and maternal mortality (167 per 100,000 live births), and lower levels of deliveries with skilled assistance (45% - NFHS III) remain major public-health challenges in India.[8]

According to a recent report, women in the World's least developed countries are 300 times more likely to die in childbirth or from pregnancy-related complications than women in developed countries.

According to a study in National Hospital, Abuja there were 11 maternal deaths giving a case fatality rate of 29% due to eclampsia. This fatality rate is higher than that detailed in the reports reviewed in this study. Early referral of eclamptics or at risk patients to a tertiary care institution may help reduce morbidity and mortality. Another important factor in the correct diagnosis of pre-eclampsia during antenatal and post partum care is by screening, noting blood pressure levels, performing urinanalysis for protein and asking about warning signals such as headache, blurred vision, epigastric pain etc.[9]

The relationship between hypertension in pregnancy and poor maternal and fetal out come had long been recognized and the thrust of prenatal care is laid on improving the pregnancy outcome associated with pregnancy induced hypertension.

Hypertensive disorders of pregnancy if unchecked will result in eclampsia with generalized convulsions. The majority of the studies indicated that primi pare, of all age group showed a high rate of pregnancy induced hypertension and it was five times higher among the mother above30. Pregnancy invariably involves a situational stress complications develop, threatening the lives of the expectant mother and her fetus the

CHAPTER 2 OBJECTIVES

Research objective is a clear, concise, declarative statement, which provides direction to investigate the variables. They are the results sought by the researcher at the end of the research process, i.e. what the researcher will be able to achieve at the end of the research study.[23]

This chapter deals with the statement of the problem, objectives, operational definitions, conceptual framework, assumptions, delimitations and projected outcomes of the study.

STATEMENT OF THE PROBLEM

"A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced hypertensive mothers in selected hospital Bangalore."

OBJECTIVES OF THE STUDY

1. To assess the pre test level of blood pressure among PIH mothers in both experimental

group and control group.

2. To assess the post test level of blood pressure among PIH mothers in both experimental and control group.

3. To compare the pre test and post test level of blood pressure among PIH mothers in both experimental group and control group.

4. To compare the post test level of blood pressure among PIH mothers in between experimental group and control group.

5. To associate the pre test level of blood pressure among PIH mothers with their selected demographic variables.

OPERATIONAL DEFINITION

1. Effectiveness: It refers to determine the extent to which the Benson's relaxation therapy has achieved the desired effect in level of blood pressure among antenatal mother diagnosed with PIH

2. Benson's relaxation therapy: It refers to systematic steps of regular pattern of breathing exercise proposed by Benson. In which PIH mothers take breath through nose and breathe out and say numbers silently and continue for 20times thrice a day for 3days.

3. Level of Blood pressure: The blood pressure of the PIH mothers measured by sphygmomanometer

4. Pregnancy induced hypertensive mother: It refers to an antenatal mother who has blood pressure at or above 140/90mmHg up to 160/100mmHg and admitted in antenatal ward of selected Hospital.

HYPOTHESIS

H_1: There will be significant difference in pre test and post test level of blood pressure among PIH mothers in both experimental and control group.

H_2: There will be a significant difference in the pre test level of blood pressure among PIH mothers between experimental group and control group

H_3: There will be a significant difference in the post test level of blood pressure among PIH mothers

between experimental group and control group.

H_3: There will be a significant association between the levels of blood pressure among PIH mothers with their selected demographic variables.

VARIABLES OF THE STUDY

- **Dependent variable:** Benson's relaxation therapy
- **Independent variable:** Blood pressure among antenatal mother diagnosed with PIH
- **Demographic variables:** It includes Age, religion, educational status, occupational status, area of residence, source of information, gravid, parity, gestation of the women, month of diagnosis of PIH and family history of PIH

ASSUMPTIONS

1. Most of the antenatal mothers may have pregnancy induced hypertension.
2. Benson's relaxation therapy may reduce blood pressure among PIH mothers

DELIMITATION

- The study is delimited to antenatal mother diagnosed with PIH and admitted in the selected maternity hospital at Bangalore.
- The Benson's relaxation therapy is restricted to antenatal mothers diagnosed with PIH and not having any serious complications.

CONCEPTUAL FRAMEWORK

A frame work is the conceptual underpinning of the study. In a study based on theory the frame work is referred to as the theoretical frame work. Conceptualization

is a process of forming ideas, which utilizes & forms conceptual frame work. It helps the researcher to know what data need to be collected and given direction to an entire research process.[23]

The present study is aimed assess the effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced hypertensive mothers in selected hospital. The investigator adopted the conceptual framework based on the concepts of "King's Goal Attainment Theory (1971)". Imogen King assumed that human beings are open system in constant interaction with the environment, that nursing focus

in human being interacting with their environment and that nursing's goal is to help individuals and groups to maintain health. It is based on the concepts of personal, interpersonal and social systems including perception, judgment, action, reaction, interaction and transaction.[18]

Perception

Perception is the reality as seen by each individual. It is a process of importing of energy from the environment and organizing it by information, transformation energy, processing information, storing information and exporting information in the form of observable behaviors.

In this study, it refers to the nurse investigator perception of the need to assess level of blood pressure of pregnancy induced hypertensive mothers at selected hospital.

JudgmentIt refers to the ability to form sound opinion and make sensible decisions.

In this study both the nurse investigator and pregnancy induced hypertensive mothers make a decision. Here, the nurse investigator make a judgment that the level of blood pressure of pregnancy induced hypertensive mothers will reduce after the implementation of Benson's relaxation therapy. The pregnancy induced hypertensive mothers make a judgment that utilization of Benson's relaxation therapy will reduce their level of blood pressure.

Action

Action is an intentional, purposive, conscious and subjective meaningful activity.

In this study, the nurse investigator used spigmomanometer and Benson's relaxation therapy for measuring and reducing pregnancy induced hypertension. The pregnancy induced hypertensive mothers expressed their readiness to control blood pressure.

Reaction

A reaction is an action taken in response to something or a feeling that is a direct result of something else. In this study the investigator conduct pre-test to find out the existing level of blood pressure by using spigmomanometer.

Interaction

Interaction is the observable verbal and non-verbal goal directed behavior of two or more people in mutual presence and includes a perception and communication. In this study, the investigator interacts with the pregnancy induced hypertensive mothers to assess the existing level of blood pressure and

administer Benson's relaxation therapy after the pre-test. The pregnancy induced hypertensive mothers actively participate Benson's relaxation therapy.

Transaction

Transaction is an interaction between a person and the environment that leads to goal attainment.

Transaction represents the aspect of human interactions in which values are apparent and involve compromising, conferring and social exchanges. They reach an agreement about how to attain these goals.

In this study, the investigator will get the consent sign from the participant by explaining the goal that is, to reduce level of blood pressure of pregnancy induced hypertensive mothers by conducting the post-test to assessing the effectiveness of Benson's relaxation therapy on knowledge of pregnancy induced hypertensive mothers.

Feedback

Feedback is the return of the information or the response towards level of blood pressure after the administration of an Benson's relaxation therapy.

In this study feedback is not included.

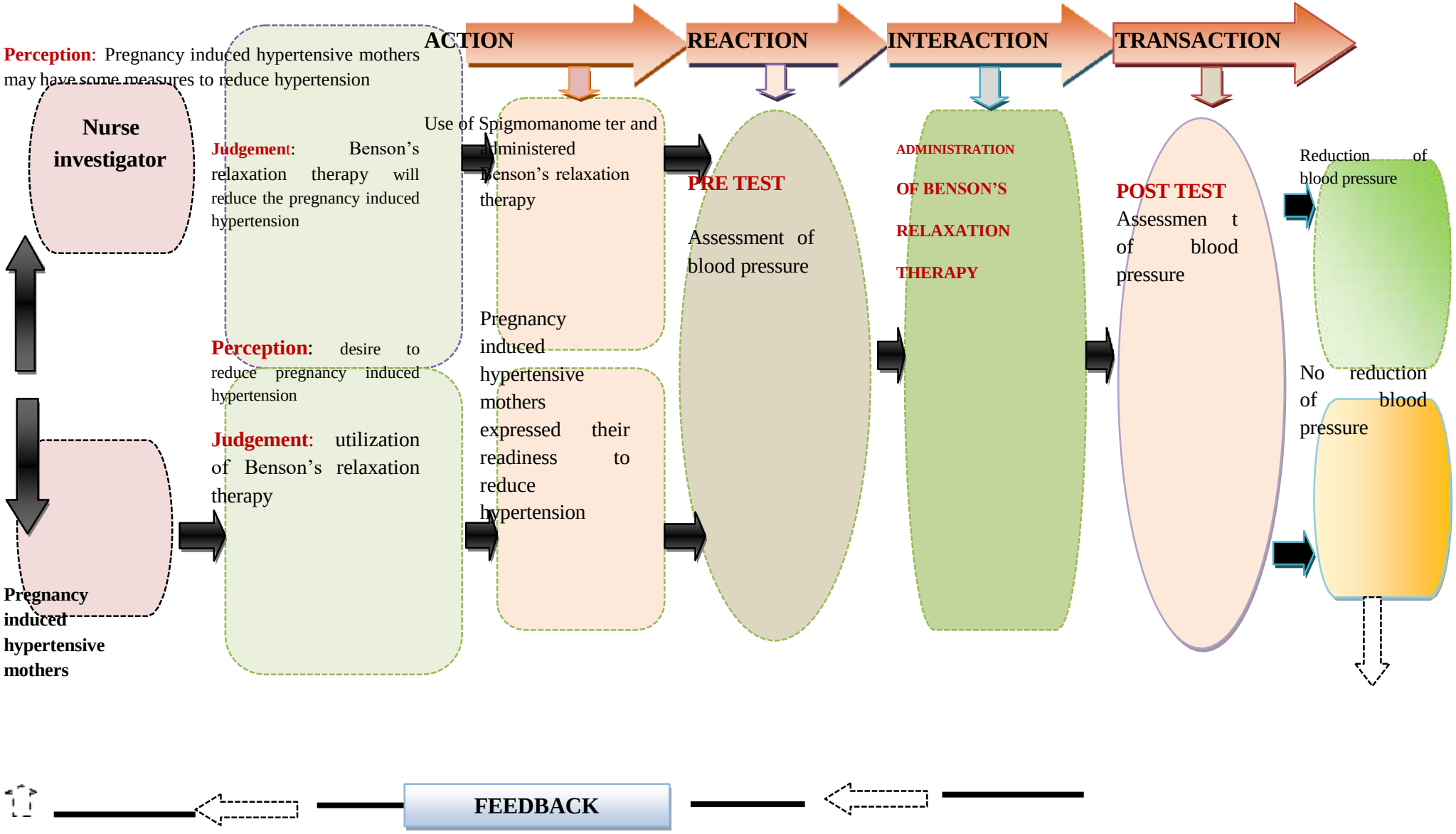

FIGURE 1: **CONCEPTUAL FRAMEWORK BASED ON KING'S GOAL ATTAINMENT THEORY**

CHAPTER 3 REVIEW OF LITERATURE

A literature review helps to lay in the foundation for a study and can also inspire new research ideas. It helps to develop research ideas to determine knowledge of the topic of interest, to provide a context for a study, and to justify the need for the study.

The review of literature for the present study has been taken up from the different sources like text books, journals, articles and published and unpublished research studies. The literature reviewed for the present is organized and presented in the following headings based on the aspects of tool and objectives of the study:

1. Reviews related to Benson's Relaxation Technique on Reducing Blood Pressure for Pregnancy induced Hypertension among Pregnant women
2. Reviews related to Benson's Relaxation Technique on Other Problems
3. Reviews on Other Techniques on Reducing Blood pressure for Pregnancy induced Hypertension among Pregnant women and others

A) Reviews related to Benson's Relaxation Technique on Reducing Blood Pressure for Pregnancy induced Hypertension among Pregnant women

A quasi experimental study was conducted to evaluate the effectiveness of Benson relaxation therapy on blood pressure and stress among women with PIH in selected hospitals, Madurai. Results of the study revealed that, After Benson relaxation therapy in the experimental group almost everyone ie., 96.67% had systolic BP < 140 mm Hg and 83.33% had diastolic BP < 90 mm Hg whereas in the control group only 13.33% had systolic blood pressure of < 140 mmHg and only 3.33% had diastolic BP of < 90 mm Hg. There was a significant reduction in mean posttest systolic BP (MD=14., t=21.03., $p<0.05$) and diastolic blood pressure(MD=9., t=12.41 ., $p<0.05$). The mean post test systolic BP score (130.6) in experimental group was lesser than that of the control group (141.75) (MD=11.5., t=9.52., $p<0.05$). The mean post test diastolic BP score (84) was lesser than that of the control group (92.1) (MD=8.1., t=8.11 ., $p<0.05$). The mean posttest stress score in the experimental group was 12.9, lesser than that of the control group 21.7 (MD=8.8., t=8.14 ., $p<0.05$). There was a significant positive relationship between pretest systolic BP and stress in the experimental group ($r= 0.69$., $p < 0.05$). The study concluded that Benson relaxation therapy is an effective non- pharmacological intervention in the treatment of BP and stress.[25]

B) Reviews related to Benson's Relaxation Technique on Other Problems

A randomised clinical trial was conducted to assess theEffects of relaxation on depression levels in women with high-risk pregnancies. The sample consisted of 50 women with high-risk pregnancies (25 in the control group and 25 in the intervention group). The Benson relaxation technique was applied to the intervention group for five days. Control variables were collected using a predesigned form, and the signs and symptoms of depression were evaluated using the Edinburgh Postnatal Depression Scale (EPDS).the study result revealed that epression levels decreased in the intervention group five days after the relaxation technique was applied (4.5 ± 3, $p<0.05$) compared with the levels at the first time point (10.3 ± 5.9).Study was concluded stating as a nursing intervention, relaxation was effective in decreasing the symptoms of depression in hospitalised women with high-risk pregnancies.[31]

C) Reviews on Other Techniques on Reducing Blood pressure for Pregnancy induced Hypertension among Pregnant women and others

A study was conducted to assess the effects of progressive muscular relaxation and breathing control technique on blood pressure during pregnancy. This three-group clinical trial was conducted in Mashhad health centers and governmental hospitals. Sixty pregnant (after 20 weeks of gestational age) women with systolic BP $\geq$ 135 mmHg or diastolic BP $\geq$ 85 mmHg were assigned to three groups. The study result revealed that After 4 weeks of intervention, the systolic (by a mean of 131.3 to 117.2, $P = 0.001$ and by a mean of 131.05 to 120.5, $P = 0.004$, respectively) and diastolic (by a mean of 79.2 to 72.3, $P = 0.001$ and by a mean of 80.1 to 76.5, $P = 0.047$, respectively) BPs were significantly decreased in progressive muscular relaxation and breathing control groups, but they were not statistically significant in the control group. The study concluded that the interventions were effective on decreasing gystolic and diastolic BP to normal range after 4 weeks in both the groups. The effects of both the interventions were more obvious on systolic BP compared to diastolic BP.[37]

RESEARCH METHODOLOGY

Research methodology is a way of systematically solving the research problem. It is a science of studying how research is done scientifically. The methodology of research indicates the general pattern to gather valid and reliable data for the problem under investigation.

RESEARCH APPROACH

The research approach indicates the procedure for conducting the study. It guides the researcher what to research, whom to analyze and interpret the results. It provides a picture of situation as it naturally happens.[24]

RESEARCH DESIGN

The research design of the study gives out the basic strategies that the researcher adopts to develop accurate and interpretable evidence. It is the overall plan for how to obtain answers to the questions being studied and how to handle some of the difficulties encountered during the research process.

It provides a structure to our study and determines how the study will be organized, when the data will be collected and when the interventions are to be implemented.

Pre test		**Interventions (X)**	**Post test (O$_2$)**
Groups	**Pre test (O$_1$)**		
1) Exp group	Assessment of blood pressure	Benson's relaxation therapy	Assessment of blood pressure
2) Control group	Assessment of blood pressure	No intervention	Assessment of blood pressure

Figure 2: Schematic representation of Research Design.

KEYS:

O1 -Pre test assessment of blood pressure

X – Benson's relaxation therapy

O2 - Post test assessment of blood pressure

SETTING OF THE STUDY:

Setting refers to physical locations and conditions in which data collection takes place in the study.[24]

This study was undertaken in selected maternity hospitals, Bangalore. The setting was selected on the basis of,

- Geographic proximity.
- Feasibility of conducting study.
- Availability of sample.

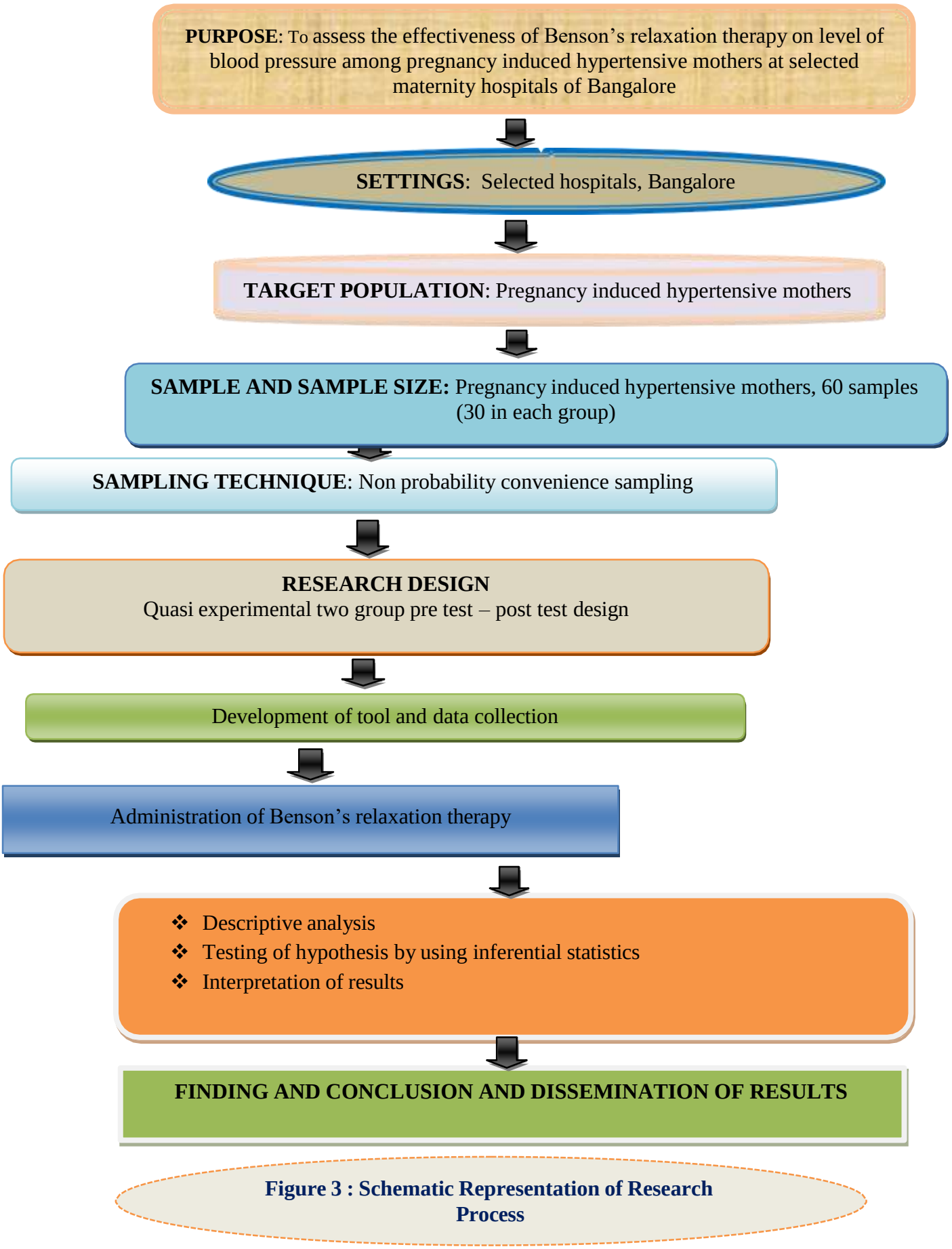

Figure 3 : Schematic Representation of Research Process

VARIABLES

Variables are the qualities, properties or character of the person, things or situation that can change or vary.[24]

The variables included in the study are

1. Independent variable.
2. Dependent variable.
3. Demographic variable

INDEPENDENT VARIABLE

According to Polit and Hungler (2499), an independent variable is the variable that stands alive and it is not dependent on any other.[24]

In the present study Independent variable is Benson's relaxation therapy

DEPENDENT VARIABLE

A dependent variable is the variable the researcher interested in understanding, explaining or predicting (Polit and Hungler).

In this study Dependent variable is level of blood pressure among pregnancy induced hypertensive mothers.

DEMOGRAPHICVARIABLE

In the present study it refers to the selected socio- demographic variables such as Age, religion, educational status, occupational status, area of residence, source of information, gravid, parity, gestation of the women, month of diagnosis of PIH and family history of PIH.

POPULATION:

The population is all elements that meet certain criteria for inclusions in a study. The requirement of defining population for research project arises from the need to which the result of the study can be applied. In the present study, the population comprised of pregnancy induced hypertensive mothers of selected maternity hospitals, Bangalore.

SAMPLE AND SAMPLING TECHNIQUE:

Sample is a small portion of population selected for observation and analysis. Sampling is the process of selecting representative units of a population for study in a research process. In the present study Non probability convenient sampling techniques was used to select pregnancy induced hypertensive mothers from selected maternity hospitals, Bangalore.

SAMPLE SIZE:

Sample size consists of 60 pregnancy induced hypertensive mothers from selected maternity hospitals, Bangalore.

CRITERIA FOR SELECTION OF SAMPLE:

Inclusion criteria: Pregnancy induced hypertensive mothers who:-

- Who have diagnosed with PIH and admitted in the hospital.
- Who are only in second trimester.
- Who can understand kannada or English.

Exclusions criteria:

The study excludes mothers:

- Who are having complications like Eclampsia, HELLP syndrome, and Renal failure.
- Who are not willing to participate

DEVELOPMENT OF THE TOOL:

The instrument selected in a research must be the vehicle that obtains the best data for drawing conclusions to the study. For any specific study, one important aspect is the task of systematically collecting observable and measurable evidence upon which influences could be made. The tools act as an instrument to assess and collect data from the respondents of the study.

DESCRIPTION OF THE TOOL

The structured questionnaire was divided into 2 parts which consists of demographic data and structured

knowledge questionnaire.

Part I: Demographic data: It consists of 12 items related to demographic data which includes Age, religion, educational status, occupational status, area of residence, source of information, gravid, parity, gestation of the women, month of diagnosis of PIH and family history of PIH.

Part II: Level Blood pressure will be assessed by using Sphygmomanometer and stethoscope

Part III: Intervention Protocol

The intervention protocol will be followed by the investigator as follow

i) Ask the PIH mothers to sit in a comfortable position and make them to close eyes.

ii) Ask the mothers to take deep breath through nose and breathe out, while breath out say the numbers silently.Ask the mothers to continue this procedure for 20 times thrice a day.

iii) After procedure the investigator ask the mothers to sit a minute by closing and later open her eyes.

iv) The investigator asks the mothers to continue this procedure 3 days continuously

v) Each day 30 minutes after the last intervention the investigator will assess the blood pressure by using sphygmomanometer and stethoscope.

Content validity

Content validity is the degree to which an instrument has an appropriate sample of items for the construct being measured.[24]

The structured knowledge questionnaire, structured practice questionnaire and structured attitude scale were content validated by giving to seven experts from nursing field and one gynecologist. There was 100% agreement by all experts on all the items. However there were few suggestions to modify some of the questions and those were incorporated in final tool.

PILOT STUDY

A pilot study was conducted from 01-05-2022 to 15-05-2022 at selected maternity hospitals, Bangalore. Administrative approval was obtained from the concerned authority to conduct the pilot study. The purposes of

the pilot study were to:

- Evaluate the effectiveness of Benson's relaxation therapy.
- Find out the feasibility of conducting the final study.
- Determine the method of statistical analysis.

By using convenient sampling technique 10 pregnancy induced hypertensive mothers were selected, On day 1, pre-test was conducted by using spigmomanometer

for both experimental and control group; on the same day Benson's relaxation therapy was conducted. On 8thday, the post-test was conducted by using same tools to evaluate the effectiveness of Benson's relaxation therapy on level of blood pressure.

The result showed that, in the group who were exposed to interventional program overall mean percentage blood pressure score of post-test was lower than the mean percentage blood pressure score of pre-test, with the reduction of mean percentage blood pressure scores were found to be significant at 5% ($P<0.05$) level.

DATA COLLECTION AND PROCEDURE

Data collection procedure for main study began from **01.06.2022 to 30.06.2022**, A formal prior permission was obtained from the medical officer of selected hospitals of Bangalore. After obtaining permission from concerned authority and informed consent from the samples, the investigator personally assess the effectiveness of Benson's relaxation therapy on blood pressure among PIH mothers. It consists of following phases:

Phase I: The investigator will assess the level of blood pressure before Benson's relaxation therapy.

Phase II: The investigator will teach Benson's relaxation therapy to the PIH mothers. Relaxation therapy has to done by PIH mothers 20times with the interval of three hours .The procedure has to repeat thrice a day for three days.

Phase III: The investigator will assess the level of blood pressure three hours after the last intervention on each day by using sphygmomanometer and stethoscope.

PLAN OF DATA ANALYSIS

The data will collected will be analyzed by means of descriptive statistics and inferential statistics.

Descriptive statistics

1. Frequency and percentage distribution will be used to describe the demographic variables.

2. Mean and standard deviation will be used to assess the level of blood pressure before and after the Benson's relaxation therapy among PIH mothers.

Inferential statistics

1. Paired "t" test will be used to compare the level of pre test and post test level of blood pressure among PIH mothers in both experimental and control group.

2. Unpaired "t" test will be used to compare the post test level of blood pressure among PIH mothers between experimental and control group.

3. Chi-square test will be used to analyze the association of pre test level of blood pressure among PIH mothers with their selected demographic variables.

This chapter on research methodology has thus described about the various activities carried out and structured by the research investigator during the course of her dissertation.

CHAPTER - V RESULTS

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the data analysis and interpretation of the study to "**A study to assess the effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced hypertensive mothers in selected hospital Bangalore**" The data was collected on the basis of objectives and hypotheses formulated for the study.

ORGANIZATION OF FINDINGS

The analysis of the data is organized and presented under following sections;

Section-I: Demographic profile.

Section-II:

A. Distribution of pre test and post test blood pressure scores of respondents.

B. Distribution Respondent's blood pressure Scores According To Their Level Of blood pressure during pretest and post test

C. Comparing the pre test scores between the experimental group and control group

D. Effectiveness of Benson's relaxation therapy

E. Comparing the post test scores between the experimental group and control group

F. Association between pretest blood pressure scores with selected demographic variables.

SECTION I: DEMOGRAPHIC PROFILE

Table 1

Frequency & Percentage Distribution of Respondents according to their socio demographic variables

N:30+30=60

Sl No	Demographic variables	Exp Gp		Control Gp	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	**Age in years**				
	a. 18 - 25	10	33.3	12	40
	b. 26 – 30	15	50	13	43.3
	c. 31- 35	5	16.7	5	16.7
2	**Religion**				
	a. Hindu	15	50	19	63.3
	b. Muslim	10	33.3	6	20
	c. Christian	5	16.7	5	16.7
3	**Educational Status**				
	a. ≤ Lower primary	3	10	1	3.3
	b. High school	7	23.3	9	30
	c. PUC	11	36.7	17	56.7
	d. ≥ Diploma and Degree	9	30	3	10

4	**Occupational Status**				
	a. Agriculture	**3**	**10**	**12**	**40**
	b. Housewife	**12**	**40**	**10**	**33.3**
	c. Govt / Private Job	**15**	**50**	**8**	**26.7**
5.	**Area of residence**				
	a. Rural	**7**	**23.3**	**12**	**40**
	b. Semi urban	**14**	**46.7**	**11**	**36.7**
	c. Urban	**9**	**30**	**7**	**23.3**
6.	**Source of Information**				
	a. Parents / family members	**11**	**36.7**	**7**	**23.3**
	b. Mass media	**10**	**33.3**	**14**	**46.7**
	c. Health care workers	**5**	**16.7**	**5**	**16.7**
	d. Friends	**4**	**13.3**	**4**	**13.3**

Age:

The data presented in Table 1 and Figure 4 shows that, In experimental group majority 15 (50%) of the respondents belong to the age group of 26-30 years, 10 (33.3%) belong to the age group of 18-25 years, 5 (16.7%) belong to the age group of 31-35 years.

Where as in control group majority 13 (43.3%) of the respondents belong to the age group of 26-30 years, 12 (40%) belong to the age group of 18-25 years and remaining 05 (16.7%) belonged to the age group of 31-35 years.

Religion:

It is evident from Table 1 and Figure 5 that in experimental group, majority 15 (50%) of respondents were belonged to Hindu religion, 10(33.3%) respondents were belonged to Muslim religion and remaining 5(16.7%) of respondents were belonged to Christian religion.

In control group, majority 19 (63.3%) of respondents were belonged to Hindu religion, 6(20%) respondents

were belonged to Muslim religion and remaining 05(16.7%) respondents were belonged to Christian religion.

Educational status:

It is evident from Table 1 and Figure 6 that in experimental group, majority 11 (36.7%) respondents were had PUC education, 9(30%) were had diploma or degree education, 7(23.3%) were had high school education and remaining 3(10%) were had lower primary school education.

In control group, majority 17 (56.7%) respondents were had PUC education, 9(30%) were had high school education, 3(10%) were had diploma and degree education and remaining 1(3.3%) was had lower primary school education.

Occupational status:

With regards to duration of illness, Table 1 and Figure 7 shows that, in experimental group majority 15(50%) respondent doing government or private jobs, 12(40%) were House wife's and remaining 3(10%) were doing agricultural work.

In control group, majority 12(40%) respondent were doing agricultural work, 10(33.3%) were house wife's and remaining 8(26.7%) were doing government or private jobs.

Area of residence:

With regards to area of residence in experimental group, majority 14 (46.7%) of respondents were residing in semi urban areas, 9(30%) were residing in urban and 7(23.3%) were rural area.

In control group, majority 12 (40%) of respondents were residing rural areas, 11(36.7%) semi urban areas and remaining 7(23.3%) were residing in urban (Table 1 & Fig 8)

Source of information:

With regards to sources of information, Table 1 and Figure 9 shows that, in experimental group, majority 11(36.7%) respondent source of information was parents or family members, 10(33.3%) respondents source of information was mass media, 5(16.7%) respondents source of information was health care workers and remaining 4(13.3%) source of information was friends.

In control group, in experimental group, majority 14(46.7%) respondent source of information was mass

media, 7(23.3%) respondents source of information was parents or family members, 5(16.7%) respondents source of information was health care workers and remaining 4(13.3%) source of information was friends.

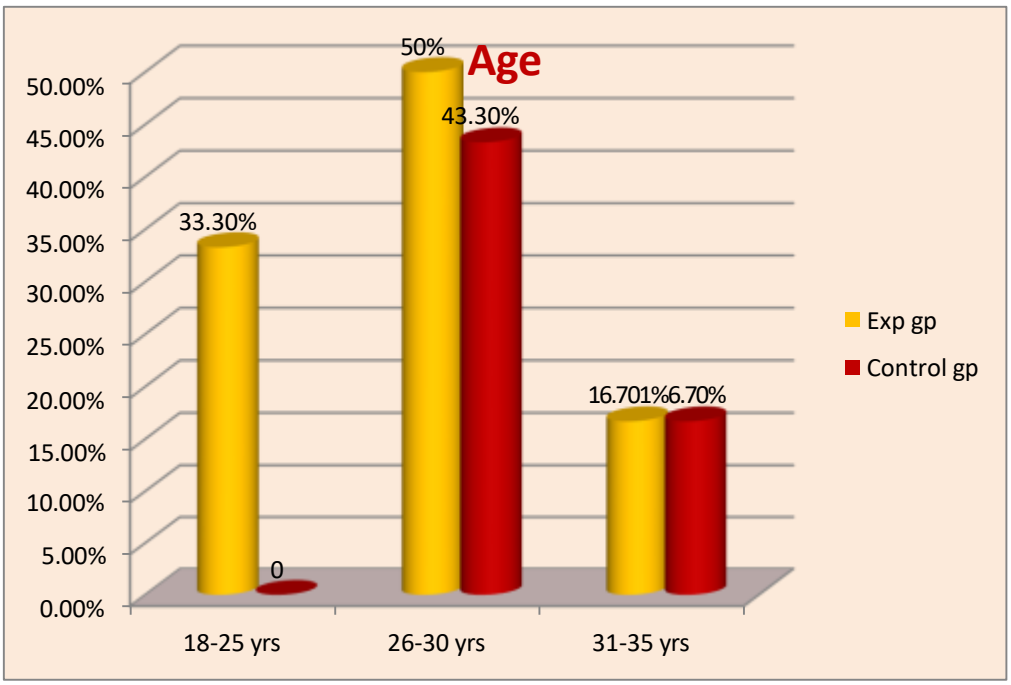

Figure 4. Frequency and percentage distribution of respondents according to their age in both groups

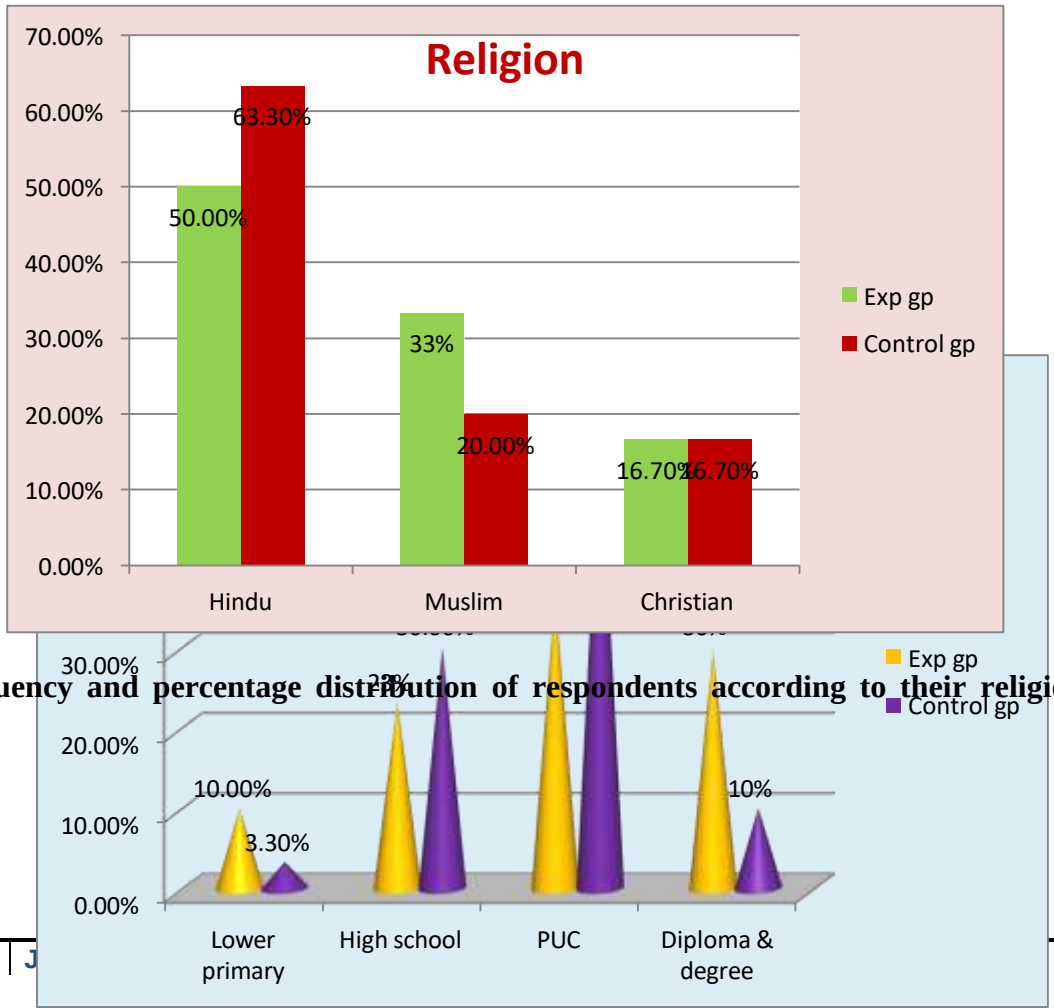

Figure 5. Frequency and percentage distribution of respondents according to their religion in both groups

Figure 6. Frequency and percentage distribution of respondents according to their educational status in both groups

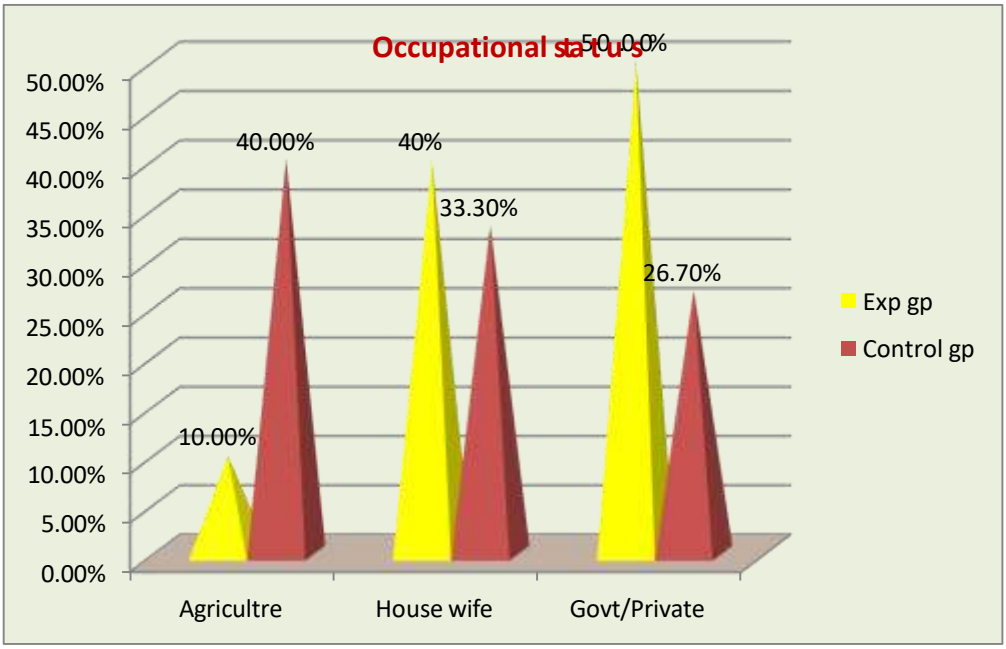

Figure 7. Frequency and percentage distribution of respondents according to their occupational status in both groups

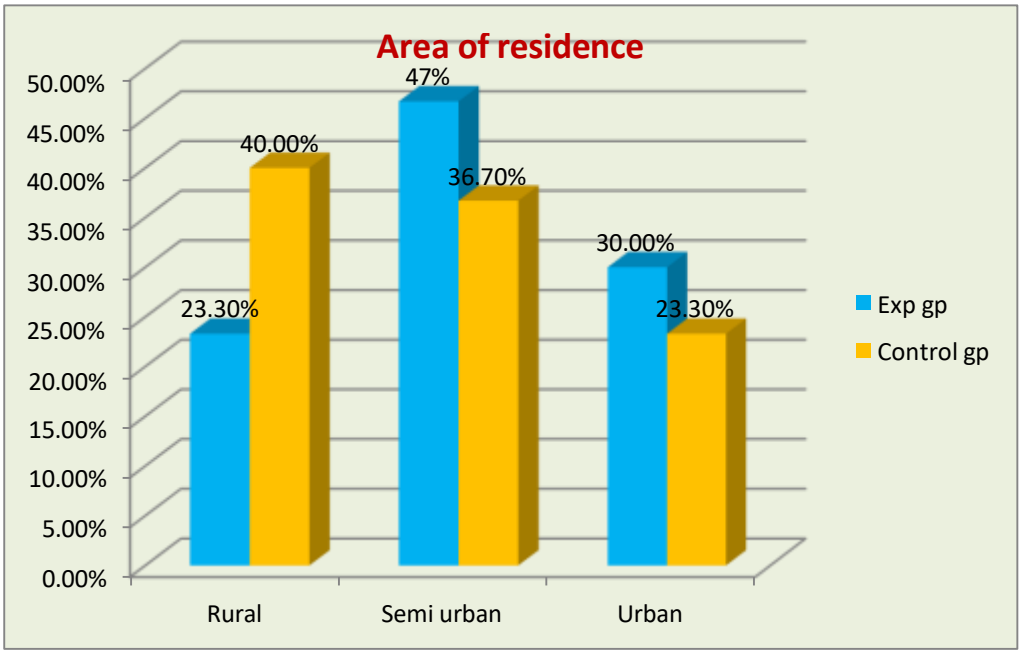

Figure 8: Frequency and percentage distribution of respondents according to their area of residence in both groups

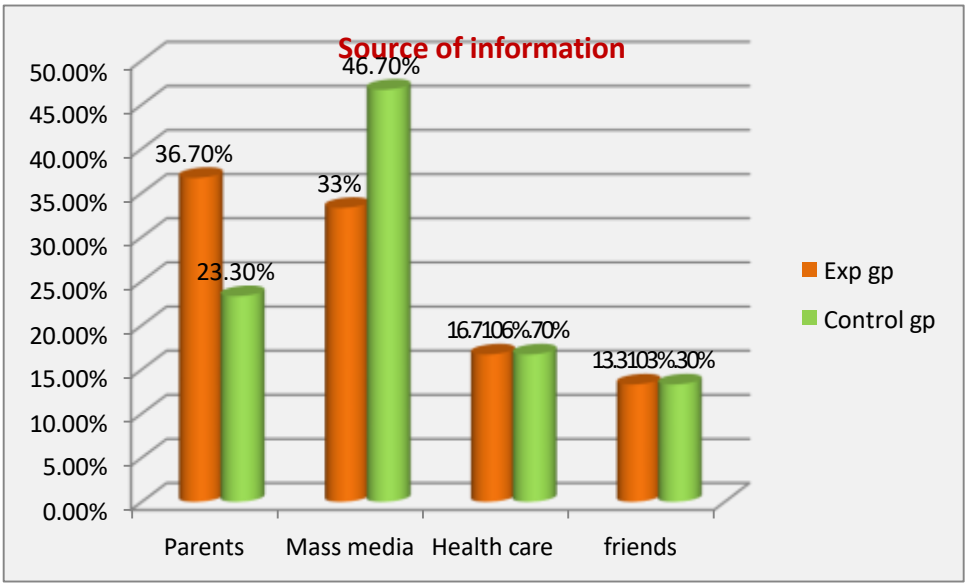

Figure 9. Frequency and percentage distribution of respondents according to their Source of information groups

Table 2

Frequency & Percentage Distribution of Respondents according to their obstetric variables

N:30+30=60

Sl No	Obstetrics variables	Exp Gp		Control Gp	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)

1	**Gravida**				
	a. One	**8**	**26.7**	**7**	**23.3**
	b. Two	**14**	**46.7**	**16**	**53.3**
	c. Three or more	**8**	**26.7**	**7**	**23.3**
2	**Parity**				
	a. Zero	**8**	**26.7**	**7**	**23.3**
	b. One	**14**	**46.7**	**16**	**53.3**
	c. Two	**8**	**26.7**	**7**	**23.3**
	d. Three or more	**0**	**0**	**0**	**0**
3	**Gestation of the women**				
	a. Second trimester	**13**	**43.3**	**19**	**63.3**
	b. Third trimester	**17**	**56.7**	**11**	**36.7**
4	**Which month you are diagnosed to suffer from PIH?**				
	a. 0-3 month	**13**	**43.3**	**11**	**36.7**
	b. 3-6 month	**12**	**40**	**14**	**46.7**
	c. 6-9 month	**5**	**16.7**	**5**	**16.7**
5.	**Family history of PIH/ hypertension**				
	a. No family history of PIH/hypertensive	**10**	**33.3**	**7**	**23.3**
	b. Family history of PIH	**13**	**43.3**	**15**	**50**
	c. Family history of hypertension	**6**	**20**	**7**	**23.3**
	d. Both history of PIH/hypertension	**1**	**3.3**	**1**	**3.3**

Gravida:

The data presented in Table 2 and Figure 10 shows that, In experimental group majority 14 (46.7%) of the respondents gravid was second and each 8(26.7%) of respondents gravid was first.

Where as in control group majority 16 (53.3%) of the respondents gravid was second and each 7(23.3%) of respondents gravid was first and three or more.

Parity:

The data presented in Table 2 and Figure 11 shows that, In experimental group majority 14 (46.7%) of the respondents parity was one and each 8(26.7%) of respondents gravid was zero and two.

Where as in control group majority 16 (53.3%) of the respondents parity was one and each 7(23.3%) of respondents gravid was zero and two.

Gestation of the women:

The data presented in Table 2 and Figure 13 shows that, In experimental group majority 17 (56.7%) of the respondents were in third trimester and remaining 13(43.3%) of respondents were in second trimester.

Where as in control group majority 19 (63.3%) of the respondents were in second trimester and remaining 11(36.7%) of respondents were in third trimester.

Diagnosed to suffer from PIH:

The data presented in Table 2 and Figure 14 shows that, In experimental group majority 13 (43.3%) of the respondents were diagnosed in 0-3 months, 12(40%) of the respondents were diagnosed in 3-6 months and remaining 5(16.7%) were diagnosed in 6-9 months.

Where as in control group majority 14 (46.7%) of the respondents were diagnosed in 3-6 months, 11(36.7%) of the respondents were diagnosed in 0-3 months and remaining 5(16.7%) were diagnosed in 6-9 months.

Family history of PIH:

The data presented in Table 2 and Figure 15 shows that, In experimental group majority 13 (43.3%) of the respondents were had family history of PIH, 10(33.3%) of the respondents were not had family history of PIH, 6(20%) were had family history of hypertension and remaining 1(3.3%) were had family history of hypertension and PIH.

Where as in control group majority 15 (50%) of the respondents were had family history of PIH, each

7(33.3%) of the respondents were not had family history of PIH/hypertension and family history of hypertension and remaining 1(3.3%) were had family history of hypertension and PIH.

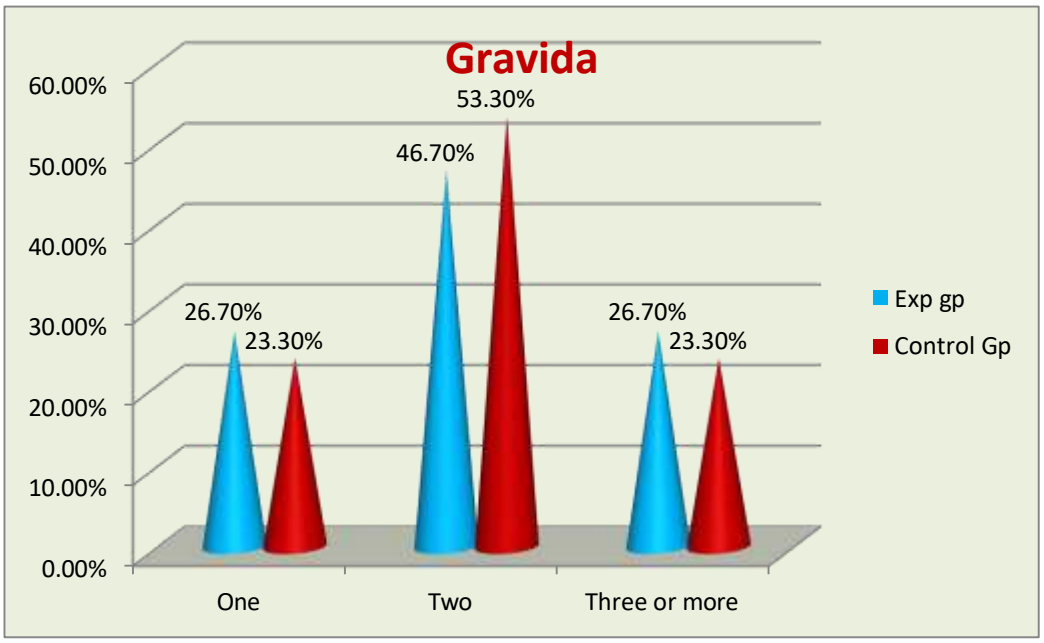

Figure 10. Frequency and percentage distribution of respondents according to their Gravid

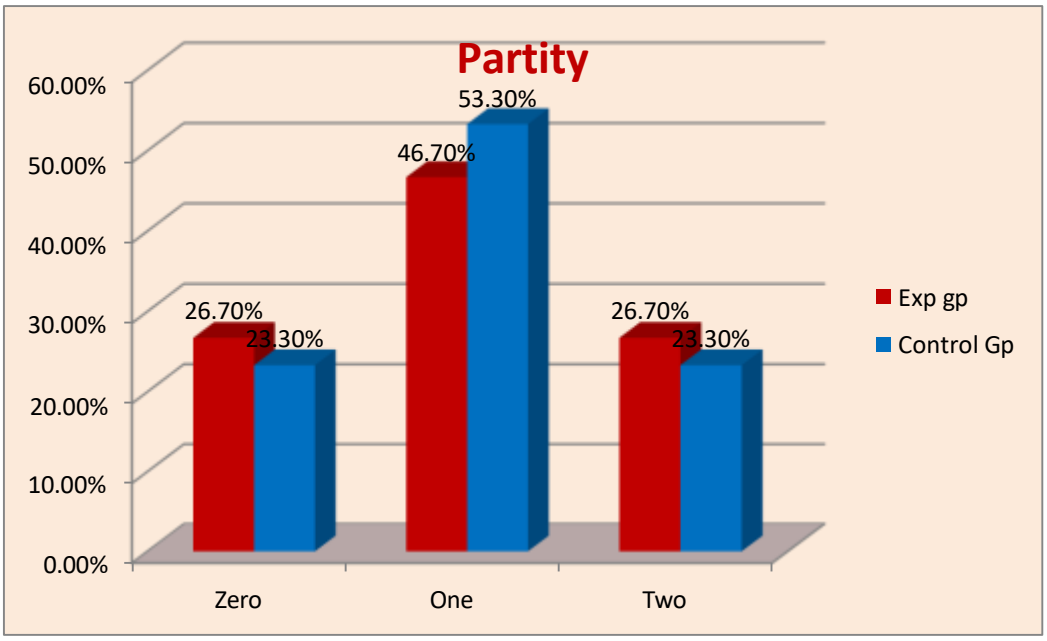

Figure 11. Frequency and percentage distribution of respondents according to their Parity

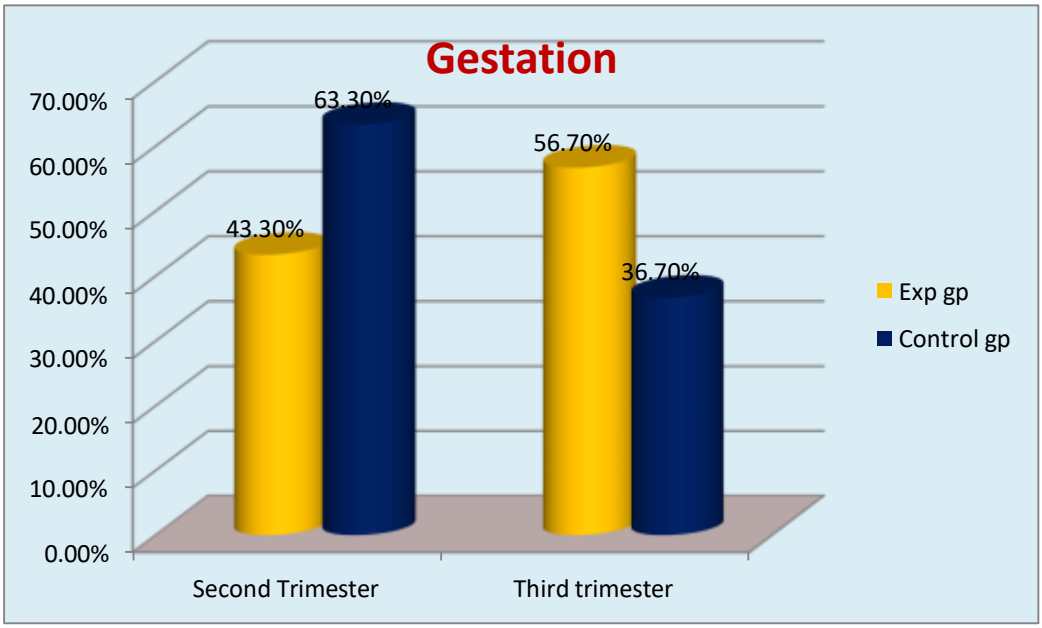

Figure 12. Frequency and percentage distribution of respondents according to their Gestation

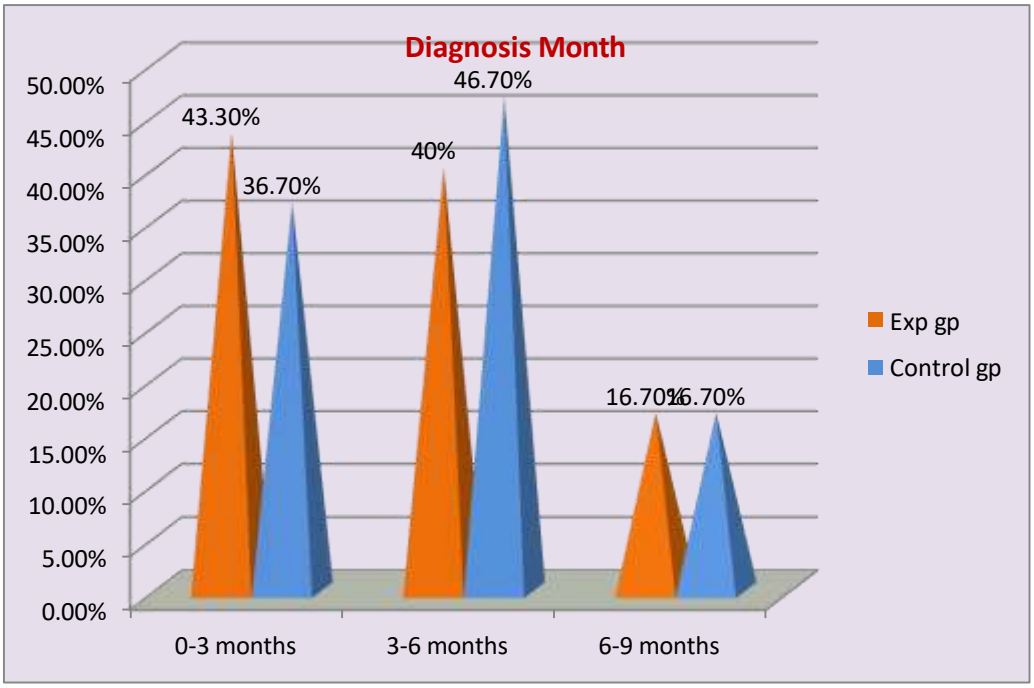

Figure 13. Frequency and percentage distribution of respondents according to their Diagnosis month of PIH

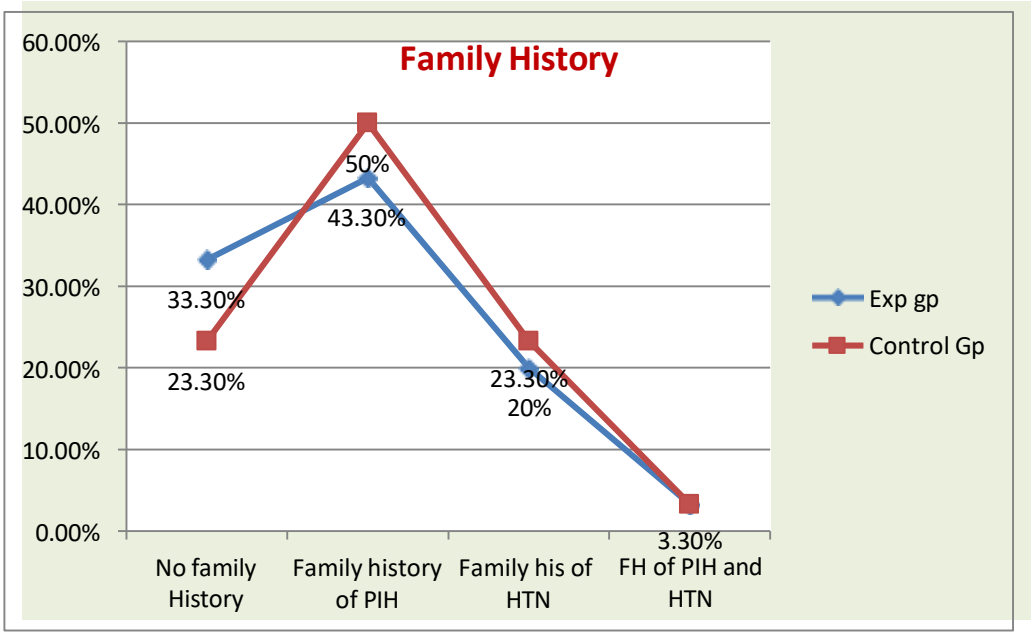

Figure 14. Frequency and percentage distribution of respondents according to their Family history of PIH/HTN

SECTION II

Distribution Respondent's Scores According To Their Level of blood pressure during pretest and post test in experimental group and control group

A. DISTRIBUTION OF PRE TEST AND POST TEST BLOOD PRESSURE SCORES OF RESPONDENTS.

Pre test blood pressure scores:

Table 3

Mean, median, mode, standard deviation and range of pre test blood pressure scores of Respondents

N: 30+30=60

Groups		Mean	Median	Mode	Standard deviation	Range
Experimental group	**Systolic**	146.87	146	142	4.48	141-156
	Diastolic	97.93	98	102	4.51	92-110
Control group	**Systolic**	145.87	145.50	143	3.78	141-153
	Diastolic	96.63	98	91	5.16	90-111

Table 3 reveals total pre test blood pressure score of respondents, it shows that -

In experimental group respondent's systolic blood pressure score mean was 146.87, median was 146, mode was 142 with standard deviation 4.48 and score range was 141-156.

Pretest diastolic blood pressure score mean was 97.93, median was 98, mode was 102 with standard deviation 4.51 and score range was 92-110.

In control group respondent's systolic blood pressure score mean was 145.87, median was 145.50, mode was 143 with standard deviation 3.78 and score range was 141- 153.

Pretest diastolic blood pressure score mean was 96.63, median was 98, mode was 91 with standard deviation 5.16 and score range was 90-111.

Post test blood pressure scores:

Table 4

Mean, median, mode, standard deviation and range of post test blood pressure scores of Respondents

N: 30+30=60

Groups		Mean	Median	Mode	Standard deviation	Range
Experimental group	**Systolic**	130.50	132	134	5.78	122-142
	Diastolic	88.76	88.50	86	3.39	82-97
Control group	**Systolic**	145.63	145	141	3.79	141-153
	Diastolic	96.36	98	98	4.87	90-109

Table 4 reveals total post test blood pressure score of respondents, it shows that -

In experimental group respondent's post test systolic blood pressure score mean was 130.50, median was 132, mode was 134 with standard deviation 5.78 and score range was 122-142.

Post test diastolic blood pressure score mean was 88.76, median was 88.50, mode was 86 with standard deviation 3.39 and score range was 82-97.

In control group respondent's post test systolic blood pressure score mean was 145.63, median was 145, mode was 141 with standard deviation 3.79 and score range was 141-153.

Post test diastolic blood pressure score mean was 96.36, median was 98, mode was 98 with standard deviation 4.87 and score range was 90-109.

B. DISTRIBUTION RESPONDENT'S PRETEST AND POST TEST SCORES ACCORDING TO THEIR LEVEL OF BLOOD PRESSURE IN EXPERIMENTAL GROUP AND CONTROL GROUP

Table 5

Frequency and Percentage distribution of respondents according to level of blood pressure in pretest and post test

N: 30+30=60

Groups	Level of blood pressure					
	Pre test			Post test		
	Normotention f (%)	Grade I Hypertension f (%)	Grade II Hypertension f (%)	Normotention f (%)	Grade I Hypertension f (%)	Grade II Hypertension f (%)
Exp Gp	00	22 (73.3%)	8 (26.7%)	29(96.7%)	1(3.3%)	00
Control Gp	00	24 (80%)	6 (20%)	00	24 (80%)	6 (20%)

The data presented in the **Table 5** depicts the respondent's level of blood pressure during pretest and post;

Experimental Group:

With regard to pre test level of blood pressure it shows that, maximum 22(73.3%) respondents were had grade I hypertension and remaining 8 (26.7%) respondents were had grade II hypertension.

During post test maximum 29 (96.7%) of respondents were had normal blood pressure and remaining 1(3.3%) of respondents were had grade I hypertension.

Control group:

With regard to control group in pre test and post test level of blood pressure it shows that, maximum 24(80%) respondents were had grade I hypertension and remaining 6 (20%) respondents were had grade II hypertension.

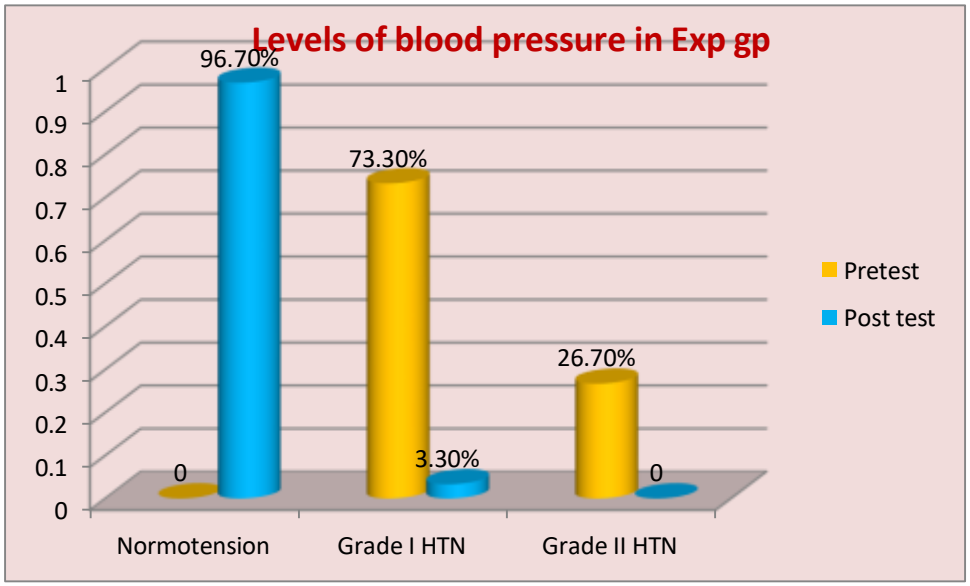

Figure 15. Pre test and post test level of blood pressure of respondents in experimental group

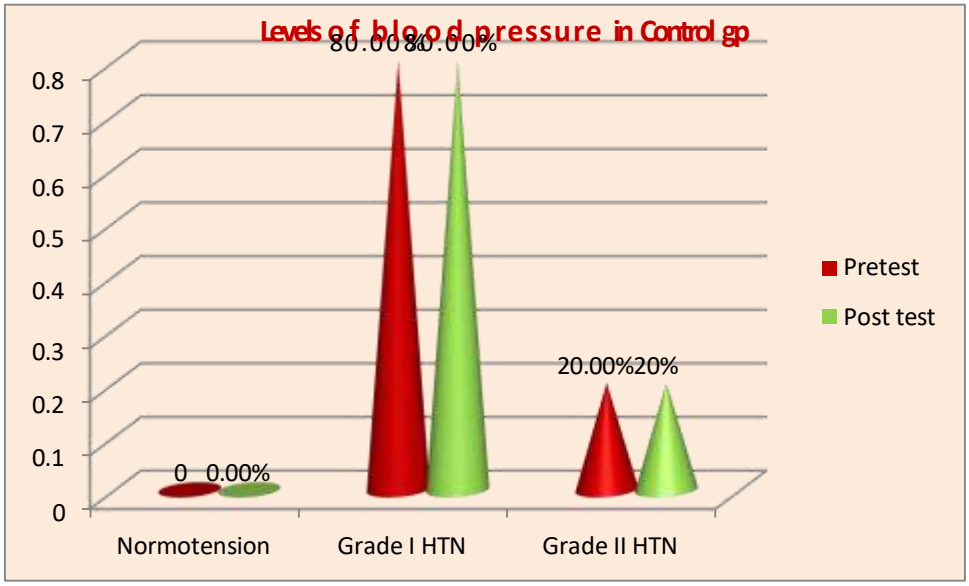

Figure 16. Pre test and post test level of blood pressure of respondents of control group

C. COMPARING THE PRE TEST SCORES BETWEEN THE EXPERIMENTAL GROUP AND CONTROL GROUP

In order to find out the significance of difference between pre-test mean blood pressure scores of experimental group and control group independent 't' value was computed. The data are presented in Table 6. To test the statistical significance following hypothesis is stated.

H_1: There will be a significant difference in the pre test level of blood pressure among PIH mothers between

experimental group and control group

Table 6

Mean difference, standard deviation of the difference and standard error of the mean difference and 't' value of pre-test blood pressure scores of respondents between experimental group and control group

N: 30+30=60

Groups	BP	$Mean_D$	SD_D	SEMD	Independent 't' test	Significance
Experimental group control group	Systolic	146.87 145.87	0.70	1.07	0.93	NS
Experimental group control group	Diastolic	97.93 96.63	0.65	1.25	1.03	NS

Independent $'t'_{(58)} = 2.00$, ($p<0.05$), S=Significant,

The statistical significance of the mean pre test systolic blood pressure score difference tested between the Experimental group and control group is not found significant at 0.05 level [$'t'_{(58)} = 0.93$, ($p<0.05$)]. Thus, the findings do not support the hypothesis H_1. Hence, it is inferred that, there will not be significant difference in the

mean pre test systolic blood pressure scores of participants of both groups and both groups have similar level of blood pressure in pretest.

The statistical significance of the mean pre test diastolic blood pressure score difference tested between the Experimental group and control group is not found significant at 0.05 level [$'t'_{(58)} = 1.03$, ($p<0.05$)]. Thus, the findings do not support the hypothesis H_1. Hence, it is inferred that, there will not be significant difference in the mean pre test disstolic blood pressure scores of participants of both groups and both groups have similar level of blood pressure in pretest.

D. EFFECTIVENESS OF BENSON'S RELAXATION THERAPY

Comparison of the pre test and post test blood pressure scores in experimental group and control group

Paired 't' value was computed to find out the significance of difference between two means of pre-test and post test systolic and diastolic blood pressure scores of experimental group and control group. The data are presented in Table 7. To test statistical significance following hypothesis is stated

H_2: There will be significant difference in pre test and post test level of blood pressure among PIH mothers in both experimental and control group

Table 7

Mean, standard deviation, standard error of difference and 't' value of pre-test and post-test blood pressure scores of exp group and control group

N: 30+30=60

Groups	Aspects	Mean	Sd	SEMD	Paired t Test
Exp Gp	Systolic BP	146.87 130.50	4.48 5.78	1.39	**11.77***
	Diastolic BP	97.93 88.76	4.51 3.39	1.09	**8.40***
Control Gp	Systolic BP	145.87 145.63	3.78 3.79	0.23	**1.88**
	Diastolic BP	96.63 96.36	5.16 4.87	0.13	**1.57**

$t_{(29)}$=1.75, (p=0.05), NS = Not Significant. * Significant at 5 % level

Table 7 indicates the overall mean systolic and diastolic blood pressure scores of pre-test and post-test scores of experimental group and control group.

Experimental group:

Systolic BP:

The findings reveal that the post-test systolic mean blood pressure scores was found lower [mean=130.50, SD of 5.78] when compared with pre-test mean blood pressure score value which was 146.87 with SD of 4.48.

The statistical paired 't' implies that the difference in the pretest and post-test value

was found statistically significant at 5% level ($P<0.05$) with a paired 't' value of 11.77.
There exists a statistical significance in the difference of blood pressure score indicating the positive impact of Benson's relaxation therapy.

Hence with respect to systolic BP of experimental group, the research hypothesis H_2 is supported. This indicates that the decrease in blood pressure is not by chance and the participants who exposed to Benson's relaxation therapy are significantly lowered in their blood pressure level.

Diastolic BP:

The findings reveal that the post-test diastolic mean blood pressure scores was found lower [mean=88.76, SD of 3.39] when compared with pre-test mean blood pressure score value which was 97.93 with SD of 4.51.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level ($P<0.05$) with a paired 't' value of 8.40. There exists a statistical significance in the difference of blood pressure score indicating the positive impact of Benson's relaxation therapy.

Hence with respect to diastolic BP of experimental group, the research hypothesis H_2 is supported. This indicates that the decrease in blood pressure is not by chance and the participants who exposed to Benson's relaxation therapy are significantly lowered in their blood pressure level.

Control group:

Systolic BP:

The findings reveal that the post-test systolic mean blood pressure scores was found slight lower [mean=145.63, SD of 3.79] when compared with pre-test mean blood pressure score value which was 145.87 with SD of 3.78.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically not

significant at 5% level (P<0.05) with a paired 't' value of 1.88. There exists a statistical no significance in the difference of blood pressure score indicating the no change in systolic BP among participants of control group.

Hence with respect to systolic BP of control group, the research hypothesis H_2 is rejected. This indicates that the participants who have not exposed to Benson's relaxation therapy are not significantly lowered in their blood pressure level.

Diastolic BP:

The findings reveal that the post-test diastolic mean blood pressure scores was found slight lower [mean=96.36, SD of 4.87] when compared with pre-test mean blood pressure score value which was 96.63 with SD of 5.16.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically not significant at 5% level (P<0.05) with a paired 't' value of 1.57. There exists a statistical no significance in the difference of blood pressure score indicating the no change in systolic BP among participants of control group.

Hence with respect to diastolic BP of control group, the research hypothesis H_2 is rejected. This indicates that the participants who have not exposed to Benson's relaxation therapy are not significantly lowered in their blood pressure level.

E. COMPARING THE POST TEST SCORES BETWEEN THE TWO EXPERIMENTAL GROUPS

In order to find out the significance of difference between post-test mean blood pressure scores of experimental group and control group independent 't' value was computed. The data are presented in Table 8. To test the statistical significance following hypothesis is stated.

H_1: There will be a significant difference in the post test level of blood pressure among PIH mothers between experimental group and control group

Table 8

Mean difference, standard deviation of the difference and standard error of the mean difference and 't' value of post-test blood pressure scores of respondents between experimental group and control group

N: 30+30=60

Groups	BP	$Mean_D$	SD_D	SEMD	Independent 't' test	Significance
Experimental group control group	Systolic	130.50 145.63	1.99	1.26	11.97	S
Experimental group control group	Diastolic	88.76 96.36	1.48	1.08	7.01	S

Independent $'t'_{(58)} = 2.00$, ($p<0.05$), S=Significant,

The statistical significance of the mean post test systolic blood pressure score difference tested between the Experimental group and control group is found significant at 0.05 level [$'t'_{(58)} = 11.97$, ($p<0.05$)]. Thus, the findings do support the hypothesis H_3. Hence, it is inferred that, there will be significant difference in the mean post test systolic

blood pressure scores of participants of both groups and both groups have different level of blood pressure in post test.

The statistical significance of the mean post test diastolic blood pressure score difference tested between the Experimental group and control group is found significant at 0.05 level [$'t'_{(58)} = 7.01$, ($p<0.05$)]. Thus, the findings do support the hypothesis H_3. Hence, it is inferred that, there will be significant difference in the mean pre test diastolic blood pressure scores of participants of both groups and both groups have different level of blood pressure in post test.

F. ASSOCIATION BETWEEN LEVEL OF BLOOD PRESSURE AND SELECTED SOCIO DEMOGRAPHIC VARIABLES

To find out the association between the levels of blood pressure and selected personal variables, Chi square was computed and the following hypothesis is stated-

H_4: There will be a significant association between the levels of blood pressure among PIH mothers with their selected demographic variables.

Table 9

Chi-square values between pre test levels of blood pressure of respondents and their selected demographic variables.

n = 60

Sl No	Demographic variables	Blood pressure score		d(f)	Chi square value	Level of significance
		Grade I HTN	Grade II HTN			
1	**Age in years**			2	**4.95**	**NS**
	a. 18 - 25	20	2			
	b. 26 – 30	18	10			
	c. 31- 35	8	2			
2	**Religion**			2	**1.42**	**NS**
	a. Hindu	28	6			
	b. Muslim	11	5			
	c. Christian	7	3			
3	**Educational Status**			3	**3.96**	**NS**
	a. ≤ Lower primary	4	0			
	b. High school	12	4			
	c. PUC	23	5			
	d. ≥ Diploma and Degree	7	5			
4	**Occupational Status**			2	**1.75**	**NS**
	a. Agriculture	13	2			
	b. Housewife	15	7			
	c. Govt / Private Job	18	5			
5	**Area of residence**			2	**5.08**	**NS**
	a. Rural	16	3			
	b. Semi urban	21	4			
	c. Urban	9	7			

6.	**Source of Information** a. Parents / family members b. Mass media c. Health care workers d. Friends	12 18 10 6	6 6 0 2	3	**4.09**	**NS**
7.	**Gravida** a. One b. Two c. Three or more	10 21 15	5 9 0	2	**6.14**	**S**
8.	**Parity** a. Zero b. One c. Two d. Three or more	10 21 15	5 9 0	2	**6.14**	**S**
9.	**Gestation of the women** a. Second trimester b. Third trimester	23 23	9 5	1	**0.88**	**NS**
10.	**Which month you are diagnosed to suffer from PIH?** a. 0-3 month b. 3-6 month c. 6-9 month	17 21 8	7 5 2	2	**0.76**	**NS**

1.	**Family history of PIH/ hypertension** a. No family history of PIH/hypertensive b. Family history of PIH c. Family history of hypertension d. Both history of PIH/hypertension	12 23 11 0	5 5 2 2	3	**7.85**	**S**

$\chi^2_{(2)}$ =5.99, $_{(4)}$ = 9.49, $_{(6)}$ = 12.59 (p>0.05) NS – Not Significant

The data presented in the **Table 9** shows that the computed Chi-square value for association between pretest level of blood pressure of participants of both groups and their selected demographic variables is found to be statistically significant at 0.05 levels for participant's gravid, parity and family history of PIH/HTN. Therefore, the findings partially support the hypothesis H_4, inferring that participants pretest levels of blood pressure is significantly associated only with gravid, parity and family history of PIH/HTN.

CHAPTER 6 DISCUSSION

Hypertension is one of the common complications met in pregnancy and it is one of the major causes of maternal morbidity and mortality leading to 10-15% of maternal deaths specially in developing world. World health organization estimate that at least one woman dies every seven minutes from complications of hypertensive disorders of pregnancy.

The present study was designed to evaluate the effectiveness of Benson's relaxation therapy on level of blood pressure among pregnancy induced hypertensive mothers of selected maternity hospitals, Bangalore. A quasi experimental pre test post test control group design was adopted for the study. The designated population for conducting the study was pregnancy induced hypertensive mothers who are at selected hospital, Bangalore. The study samples were selected from the population by non- probability convenience sampling technique. As

a result 60 pregnancy induced hypertensive mothers were selected from selected maternity hospital, Bangalore. The study was conducted over a period of 4 weeks and the data was collected from the pregnancy induced hypertensive mothers by measuring blood pressure in pretest and post test.

FINDINGS OF THE STUDY

The major findings of the study were discussed under the following headings

1. Findings related to demographic variables of the respondents.
2. Findings related to pretest and post test level of blood pressure of pregnancy induced hypertensive mothers.
3. Findings related to effectiveness of Benson's relaxation therapy
4. Findings related to association between level of blood pressure scores and selected socio demographic variables.

1. Findings related to socio demographic variables of respondents

In the present study,

- In experimental group majority 15 (50%) of the respondents belong to the age group of 26-30 years and in control group majority 13 (43.3%) of the respondents belong to the age group of 26-30 years
- In experimental group and control group, majority 15 (50%) and 19 (63.3%) of respondents were belonged to Hindu religion respectively.
- In experimental and control group majority 11 (36.7%) and 17(56.7%) respondents were had PUC education respectively.
- In experimental group majority 15(50%) respondent doing government or private jobs and in control group, majority 12(40%) respondent were doing agricultural work.
- In experimental group, majority 14 (46.7%) of respondents were residing in semi urban areas and In control group, majority 12 (40%) of respondents were residing rural areas
- In experimental group, majority 11(36.7%) respondent source of information was parents or family members and In control group, in control group, majority 14(46.7%) respondent source of information

was mass media.

- In experimental group majority 14 (46.7%) of the respondents gravid was second and in control group majority 16 (53.3%) of the respondents gravid was second .
- In experimental group majority 14 (46.7%) of the respondents parity was one and in control group majority 16 (53.3%) of the respondents parity was one.
- In experimental group majority 17 (56.7%) of the respondents were in third trimester and in control group majority 19 (63.3%) of the respondents were in second trimester.
- In experimental group majority 13 (43.3%) of the respondents were diagnosed in 0-3 months and in control group majority 14 (46.7%) of the respondents were diagnosed in 3-6 months
- In experimental group majority 13 (43.3%) of the respondents were had family history of PIH and in control group majority 15 (50%) of the respondents were had family history of PIH.

The study findings can be compared with the other studies, this is higher compared to Ethiopian Demographic and Health Survey (EDHS) report which was 31% for women

residing in urban areas. It is also higher compared to a study conducted in Adigrat which was 21.2%.

These findings also compared with the findings of the study conducted by Dimtsu and Bugssa it shows that, total of 220 women of reproductive age from Hawelti sub city were interviewed, yielding a non-response rate of 0.5%. About 58% of the respondents were between the ages of 25 and 34 years. a total of 220 women of reproductive age from Hawelti sub city were interviewed, yielding a non-response rate of 0.5%. About 58% of the respondents were between the ages of 25 and 34 years.

Finding also compared with the other study conducted by Affipunguh PK et al. it shows that, total of four hundred and twenty two (422) women were interviewed. This comprised of 211 pregnant women and 211 women who delivered during the period. The mean age was 26 years ranging 15-46 years. The respondents comprised 50% rural and 50% urban residents. Most of the women interviewed were housewives (36.97%) followed by traders (34.12%) farmers (18.26%) and those who were in full time employment that is salaried workers constituting (10.66%). More than half of the respondents (90.02%) were either married or co-habiting, 7.84% were never married, 1.90% of them were divorced or separated from their husbands and 0.24% of the

respondents were widowed. 21.33% of the respondents have never been to school, 23.70% dropped out of primary school, 31.04% attained up to the JSS level, 17.35% up to SSS and 7.58% have had post-secondary/tertiary education. Majority (80.57%) of the respondents were Christians, followed by Moslems (11.14%) and African traditionalists constituted only (8.27%). For the parity of the respondents, 17.50% have not given birth

before, 55.88% have given birth once or twice, and 26.62% have given birth trice or more

2. Findings related to level of blood pressure of pregnancy induced hypertensive mothers

The results of the present study revealed that,

- In experimental group respondent's systolic blood pressure score mean was 146.87, median was 146, mode was 142 with standard deviation 4.48 and score range was 141-156. Pretest diastolic blood pressure score mean was 97.93, median was 98, mode was 102 with standard deviation 4.51 and score range was 92-110.
- In control group respondent's systolic blood pressure score mean was 145.87, median was 145.50, mode was 143 with standard deviation 3.78 and score range was 141-153. Pretest diastolic blood pressure score mean was 96.63, median was 98, mode was 91 with standard deviation 5.16 and score range was 90-111.
- In experimental group respondent's post test systolic blood pressure score mean was 130.50, median was 132, mode was 134 with standard deviation 5.78 and score range was 122-142. Post test diastolic blood pressure score mean was 88.76, median was 88.50, mode was 86 with standard deviation 3.39 and score range was 82-97.
- In control group respondent's post test systolic blood pressure score mean was 145.63, median was 145, mode was 141 with standard deviation 3.79 and score range was 141-153. Post test diastolic blood pressure score mean was 96.36, median was 98, mode was 98 with standard deviation 4.87 and score range was 90-109.
- With regard to pre test level of blood pressure it shows that, maximum 22(73.3%) respondents were had grade I hypertension and remaining 8 (26.7%) respondents were had grade II hypertension. During post test maximum 29 (96.7%) of respondents were had normal blood pressure and remaining 1(3.3%) of

respondents were had grade I hypertension.

- With regard to control group in pre test and post test level of blood pressure it shows that, maximum 24(80%) respondents were had grade I hypertension and remaining 6 (20%) respondents were had grade II hypertension.

The above findings are supported with the findings of the study conducted by Thangamani (2006) an experimental study to evaluate the effectiveness of Benson's relaxation therapy in reducing B.P among PIH mothers for a period of 4 weeks in antenatal ward in selected hospital in Salem. 60 antenatal mothers selected purposive sampling. The design used was time series. The mean value of systolic SBP was **8.5** and **5.2** in DBP with the calculated't' value of **7.1** and **13.32** respectively. Thus the results showed that there was a significant reduction in both systolic and diastolic B.P among PIH mothers. Thus the finding suggested that Benson's relaxation therapy was effective in reducing BP among mothers with pregnancy induced hypertension.

3. **Findings related to effectiveness of Benson's relaxation therapy**

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level ($P<0.05$) with a paired 't' value of 11.77. There exists a statistical significance in the difference of blood pressure score indicating the positive impact of Benson's relaxation therapy.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level ($P<0.05$) with a paired 't' value of 8.40. There exists a statistical significance in the difference of blood pressure score indicating the positive impact of Benson's relaxation therapy.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically not significant at 5% level ($P<0.05$) with a paired 't' value of 1.88. There exists a statistical no significance in the difference of blood pressure score indicating the no change in systolic BP among participants of control group.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically not significant at 5% level ($P<0.05$) with a paired 't' value of 1.57. There exists a statistical no significance in the

difference of blood pressure score indicating the no change in systolic BP among participants of control group.

Above findings can be compared with a quasi experimental study conducted to evaluate the effectiveness of Benson relaxation therapy on blood pressure and stress among women with PIH in selected hospitals, Madurai. Results of the study revealed that, there was a significant reduction in mean posttest systolic BP (MD=14., t=21.03., p<0.05) and diastolic blood pressure(MD=9., t=12.41 ., p<0.05). The mean post test systolic BP score (130.6) in experimental group was lesser than that of the control group (141.75) (MD=11.5., t=9.52., p<0.05). The mean post test diastolic BP score (84) was lesser than that of the control group (92.1) (MD=8.1., t=8.11 ., p<0.05). [25]

Findings also match with a study to assess the Effect of a Combination of Autogenic and Benson Relaxation on Sleep Quality among Pregnant Women with Hypertension. It reveals that, there was a statistically significant difference between groups regarding daily sleep time, *Pittsburgh Sleep Quality Index* (PSQI) score, and sleep quality after the intervention. [26]

Findings also compared with a study assess the Effect of Relaxation Techniques on Blood Pressure and Stress among Pregnant Women with Mild Pregnancy Induced Hypertension in Egypt. It reveled that, reduction of blood pressure and stress level among pregnant women with mild pregnancy induced hypertension.[27]

4. Findings related to association between level of blood pressure scores and selected socio demographic variables.

The present study revealed that, the computed Chi-square value for association between pretest level of blood pressure of participants of both groups and their selected demographic variables is found to be statistically significant at 0.05 levels for participant's gravid, parity and family history of PIH/HTN.

The findings can be compared with the study conducted by Ehiemere et al. that the age and occupation of the couples (husband and wife) were positive, though, not significantly associated with their practice of warning signs of pregnancy and complication readiness (BP/CR). Couples' number of children was negatively associated with their practice. Couples with larger number of children, had lower levels of good practice. The

association was however not significant also.

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