EFFECTIVENESS OF SELECTED NOETIC THERAPIES UPON CLINICAL OUTCOME OF PATIENTS WITH UNSTABLE ANGINAUNDERGOING PERCUTANEOUS CORONARY INTERVENTION

BY

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

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DECLARATION

I hereby declare that the present dissertation entitled **"An Experimental Study to assess the Effectiveness of selected Noetic Therapies upon clinical outcome of Patients with Unstable Angina undergoing Percutaneous Coronary Intervention at Apollo Hospitals, Chennai"** is the outcome of the original research work undertaken and carried out by me under the guidance of **Dr.LathaVenkatesan,**M.Sc.(N)., M.Phil. (N)., Ph.D. (N), M.B.A., Principal, Apollo College of Nursing, and **Mrs. Jaslina Gnanarani,** M.Sc. (N). Reader, Medical Surgical Nursing department, Apollo College of Nursing, Chennai. I also declare that the material of this has not found in anyway, the basis for the award of any degree or diploma in this university or any other university.

M.SC (N) II YEAR

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SYNOPSIS

An Experimental Study to assess the Effectiveness of selected Noetic Therapies upon the clinical outcome of patients with Unstable Angina undergoing Percutaneous Coronary Intervention at Apollo Hospitals, Chennai.

The Objectives of the Study were,

1. To assess the clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention before and after selected noetic therapies
2. To assess the effectiveness of selected noetic therapies by comparing the clinical outcome before and after noetic therapies among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
3. To assess the level of satisfaction of patients regarding selected noetic therapies in the experimental group of Patients with unstable angina undergoing percutaneous coronary intervention.
4. To find out the association between the selected demographic variables and the clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
5. To find out the association between the selected clinical variables and the clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

The conceptual framework for the study was developed on the basis of King's Goal Attainment Theory (Martha 2013), which has been modified for the present study. The study variables were Noetic therapies on satisfactory clinical outcome among unstable angina patients undergoing percutaneous coronary intervention.

A quasi experimental research design was adopted for the study. The present study was conducted at Apollo Main Hospital, Greams road, Chennai. The study samples were selected using purposive sampling technique. The sample size for the present study was 60 among which, 30 patients were assigned to the control group and 30 to the experimental group who satisfied the inclusion criteria.

An extensive review of literature and guidance by experts laid the foundation for the investigator in developing demographic variable proforma, clinical variable proforma to obtain the baseline data by interview method. The researcher also used the universal pain assessment tool to assess the level of pain, hospital anxiety and depression scale to assess the level of anxiety and depression, observational check list to measure blood pressure and heart rate for patients with unstable angina undergoing percutaneous coronary intervention and rating scale to assess the patient's satisfaction. The data collection tools were validated and reliability was established. After confirming the feasibility and research ability through pilot study, data for the main study was conducted for a period of 6 weeks. The collected data was tabulated and analyzed by using appropriate descriptive and inferential statistics.

The Major Findings of the Study were

- More than two thirds of the patients with unstable angina undergoing percutaneous coronary intervention were employed (66.66%, 70%), around half of them were graduates (46%, 43.33%), live as a nuclear family (46.66% 63.33%) most of them were non-vegetarian (83.33%, 86.66%), and all of them were married (100% 100%) in the control and the experimental groups respectively.
- Around half of the patients were overweight (20%,53.3%), and had slight limitation of physical activity (20%, 43.3%), diagnosed to have two vessel disease (43.3%,30%) with ejection fraction below normal (53.3%, 50%), with more than fifty percentage of stenosis (43.3,76.6%), majority of them had no history of coronary artery disease (83.3%,56.6%), history of smoking (60%,80%), had history of co-morbid illness (70%,53.3%) and no history of getting treatment for illness (83.3%,53.3%), with pre medication before procedure (70%,86.6%) and pain medication after procedure (100%,100%) in the control and the experimental groups respectively.
- Unstable angina patients undergoing percutaneous coronary intervention in the control group had moderate hypertension (16.6%, 50 %) in pre-test and post-test. On the other hand, one third of the patients undergoing percutaneous coronary intervention (30%, 43.33%) in the experimental group had mild hypertension before therapy and normal blood pressure after therapy respectively.
- Around half of the patients (36.6%, 50%) in the control group had normal heart rate and tachycardia in pre-test and post-test whereas, around half of the patients

(43.3%, 56.6%) in the experimental group had tachycardia and normal heart rate after the therapy.

- A majority of the patients (66.6%, 66.6%) in the control group had mild pain in pre-test and post-test whereas, around half of the patients (80%, 50%) in the experimental group had mild pain after the therapy.
- Half of the patients in the control group had anxiety (56.6%, 50 %) in pre-test and post-test. On the other hand, in the experimental group, around half of the patients undergoing percutaneous coronary intervention (46.6%, 60%) had anxiety before therapy and borderline anxiety after the therapy respectively.
- More than half of the patients (60%, 66.6%) in the control group had depression in pre-test and post-test whereas around half of the patients (50%, 36.66%) in the experimental group had depression and borderline depression after the therapy.
- Pre-test score of systolic blood pressure (M=136.56, S.D=16.20) in the control group and (M=136.36, SD=18.40) in the experimental group with the 't' value 0.26 which was not statistically significant at $p<0.05$ whereas, after noetic therapies, there was a difference in the systolic blood pressure (M= 136.6, SD=14.09) in control group and (M= 120.3, SD= 6.08) in the experimental group with 't' value of 5.81 which was statistically significant at $p<0.01$. Comparison of pre-test post-test systolic blood pressure score of patients in experimental group shows 't' value 7.20*** at $p<0.001$ and shows the effectiveness of noetic therapies.
- Pre-test score of diastolic blood pressure (M=82.66, S.D=8.24) in the control group and (M=87.9, SD=10.32) in the experimental group with the 't' value 1.76 which was not statistically significant at $p<0.05$ whereas after noetic therapies there was a difference in the diastolic blood pressure and heart rate (M= 82.03,

SD=7.87) in the control group and (M= 72.7, SD= 6.90) in the experimental group with 't' value of 4.88 which was statistically significant at $p<0.01$. Comparison of pre-test post-test diastolic blood pressure score of patients in the experimental group shows 't' value 9.68*** (df=29) at $p<0.001$ and shows the effectiveness of noetic therapies.

- Pre-test score of heart rate (M=92.9, S.D=14.43) in the control group and (M=98.2, SD=13.20) in the experimental group with the 't' value 1.48 which was not statistically significant at $p<0.05$ whereas, after noetic therapies, there was a difference in the heart rate (M=93.1, SD=14.9) in control group and (M=75.7, SD= 8.74) in the experimental group with 't' value of 5.51 which was statistically significant at $p<0.01$. Comparison of pre-test post-test heart rate score of patients in the experimental group shows 't' value 11.25*** at $p<0.001$ and shows the effectiveness of noetic therapies.
- Pre-test score of pain (M=2.06, S.D=1.14) in the control group and (M=3.06, SD=1.36) in the experimental group with the t value 1.80 which was not statistically significant at $p<0.05$ whereas, after noetic therapies, there was a difference in the pain (M=2.13, SD=0.86) in the control group and (M= 0.93, SD= 0.73) in the experimental group with't' value of 5.79 which was statistically significant at $p<0.01$. Comparison of pre-test post-test pain score of patients in the experimental group shows't' value 11.21*** at $p<0.001$ and shows the effectiveness of noetic therapies.
- Pre-test score of anxiety (M=11.76, S.D=4.01) in the control group and (M=12.5, SD=3.8) in the experimental group with the't' value 0.73 which was not statistically significant at $p<0.05$ whereas, after noetic therapies, there was a difference in the anxiety (M= 11.0, SD=4.29) in the control group and (M= 7.2,

SD= 1.3) in the experimental group with‘t’ value of 4.69 which was statistically significant at $p<0.01$. Comparison of pre-test post-test anxiety score of patients in the experimental group shows‘t’ value 11.52*** (df=29) at $p<0.001$ showing the effectiveness of noetic therapies.

- Pre-test score of depression (M=11.9, S.D=4.77) in the control group and (M=12.46, SD=3.21) in the experimental group with the t value 0.53 which was not statistically significant at $p<0.05$ whereas, after noetic therapies, there was a difference in the depression (M= 11.8, SD=3.94) in the control group and (M= 7.73, SD= 1.74) in the experimental group with‘t’ value of 5.17 which was statistically significant at $p<0.01$. Comparison of pre-test post-test depression score of patients in the experimental group shows‘t’ value 10.51*** at $p<0.001$ and shows the effectiveness of noetic therapies.
- Majority of the patients undergoing percutaneous coronary intervention in the experimental group was highly satisfied (93.3%) with the researcher’s approach, (96.6%) and method of application of noetic therapies (93.3%).
- There was no significant association between demographic variables like age, gender and type of food and clinical outcome(non-invasive hemodynamic parameters like Blood pressure and Heart Rate). In this regard, the null hypothesis $Ho_2$was retained.
- There was no significant association between selected demographic variables like age, gender, type of food and clinical outcome (Anxiety, Depression).In this regard, the null hypothesis Ho_2 was retained.
- There was no significant association between selected demographic variables like age, gender, type of food and clinical outcome (Anxiety, Depression).In this regard, the null hypothesis Ho_2 was retained.

- There was no significant association between the clinical variables and clinical outcomes (non-invasive hemodynamic parameters like blood pressure). Hence the null hypothesis Ho_3 was retained.
- There was significant association between selected clinical variables namely BMI ($\chi 2=8.26$,df=1), ejection fraction ($\chi 2=13.09$, df=1), history of coronary artery disease ($\chi 2=4.88$, df=1) and clinical outcome (heart rate and pain) at $p<0.01$ level. However there was no significant association between other clinical variables like smoking, extent of coronary artery disease, percentage of stenosis and clinical outcome (heart rate, pain).hence the null hypothesis $Ho_3$was rejected with regard to BMI, ejection fraction and history of coronary artery disease.
- There is significant association between the BMI ($\chi 2$ =4.21,df=1), smoking ($\chi 2=6.16$,df=1), extent of coronary artery disease ($\chi 2=3.90$,df=1)and selected clinical outcomes (Anxiety, Depression) at $p<0.05$ level. However there was no significant association between other clinical variables like history of coronary artery disease, percentage of stenosis, ejection fraction and clinical outcome (Anxiety, Depression). Hence the null hypothesis Ho_3 was rejected with regard to smoking and extent of coronary artery disease.

Recommendations

- The present study could be replicated in different settings.
- A similar study could be undertaken on a larger scale for more valid generalization.
- This method may be implemented in all the settings like cath lab, cath day-care, pre-op holding area, endoscopy and can be made as a standard intervention as routine procedure.
- A study on noetic therapies could be done for haemodialysis patients, percutaneous valvular correction patients, arthroscopy patients, endoscopy patients where patients remain awake.
- A similar study on various therapies like touch therapy, reflexology, divertional therapies like music, guided imagery can be separately done for patients undergoing PCI, CABG, C-clamp procedures.

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CHAPTER I

INTRODUCTION

Background of the study

Guard your heart above all else, for it is the source of life– Bible

Traditionally heart is considered to be “the seat of soul”, “centre of courage”, “treasure of love and affection”. The heart is one of the most vital organ. It provides the power needed for life. The life sustaining power has through ages, caused an air of mystery to surround the heart. In order to exert the life sustaining power, the heart functions as a pump, and the heart muscle must be adequately supplied by coronary arteries. These are damaged either by block or narrowed due to thrombus or embolus, ending up in coronary artery disease.

Coronary artery disease is also known as atherosclerotic heart disease, coronary heart disease, or ischemic heart disease. It is the most common type of heart disease and cause of heart attacks. The disease is caused by a plaque building up along the inner walls of the heart, a condition known as atherosclerosis, which leads to blockages. The arteries, which start out smooth and elastic, become narrow, rigid and reduce blood supply to the heart. The heart becomes starved of oxygen and vital nutrients it needs to pump properly.

According to WHO (2009), Internationally twelve million deaths due to cardiac diseases are reported every year. The projections of increased mortality and increased life expectancy suggest that by 2020, cardiovascular disease will be the principal cause of mortality throughout the world. Approximately 16.7 million persons die of

cardiovascular disease each year. India has the record of highest of cardiovascular disease in the world. Two million persons are diagnosed to have cardiovascular disease in India per year. Coronary artery disease would account for 34% of all male deaths and 32% of all female deaths in India. (Sethi, 2011).

The incidence of heart disease is expected to increase over the next several decades. The findings of Jain (2009) indicate the incidence of coronary artery disease running the highest risk among Indians. The risk for coronary artery disease in Indian is 3-4 times higher for white Americans, 6 times more than the Chinese and 20 times greater than the Japanese. The prevalence of coronary artery disease in urban adults is estimated to be 7 to 10% in north Indians and as high as 14% in south Indians.

In the face of this challenge, advances in technology and the scientific understanding of the anatomy and pathophysiology of heart disease offer an increasing array of minimally invasive open-chest (surgical) and percutaneous (interventional) treatment of heart disease. New percutaneous valve interventions have been directed towards the 2nd most frequent forms of heart disease in aortic stenosis and mitral regurgitation, which account for >70% of the cases of acquired valve disease in Europe. Percutaneous coronary intervention is a common procedure in Asia, with >30,000 cases performed each year.

Percutaneous coronary intervention is safe. It is performed for detecting any obstruction in the coronary arteries of the heart by inserting a catheter into the artery and threading carefully into the heart, in order to view the patency of blood flow to the heart muscles. (Benjamin, 2005).

Many common medical, surgical, and diagnostic procedures performed for conscious patients can be accompanied by significant anxiety. Mind-body-spirit interventions could serve as useful adjunctive treatments for the reduction of anxiety. Many strategies have been reported for minimizing anxiety, including the use of selected noetic therapies such as music therapy and guided imagery before or after the percutaneous intervention. Experts with experience in noetic therapies before and after percutaneous coronary intervention can achieve comparable clinical outcome like oxygen saturation, respiratory rate, heart rate, pain and minimize complications. Noetic therapies are widely accepted as the preferred therapy in anxiety reduction in percutaneous coronary intervention.

Anxiety management emphasizes supportive listening, an individualized educational dialogue about anxiety, and a brief assessment of the patient's perception. The relaxation technique includes slow abdominal breathing and concentration on personally selected phrase of meaning such as "All is well." when his or her mind wandering to other thoughts.

Guided imagery is to establish rapport and facilitate a therapeutic alliance. The patients are taught slow, mindful relaxation breath. The practitioner guides the patient in the selection of a preferred place and directs the patient to focus his attention and imagination on this place where he or she would rather be like relaxing at beach side.

Cassette-tape music-imagery scripts are used for patients after the guided imagery. Patients can wear the headphones with musical background of instrumental music before or after the percutaneous coronary intervention.

Seskevich (2004) has evaluated the effects of noetic therapies like anxiety management, imagery, touch therapy, remote intercessory prayer, and standard therapy on mood in patients awaiting percutaneous interventions for unstable coronary syndromes as part of the Monitoring and Actualization of Noetic Training (MANTRA) trial, which has explored the feasibility and efficacy of noetic interventions on clinical outcomes in a randomized clinical trial.

Thus noetic therapies have beneficial effects on physiological and psychological parameters in the course of medical and surgical interventions. Given their relatively low cost and limited potential for adverse effects, these interventions merit further study as therapeutic adjuncts.

Need For the Study

A priority population health care objective is to reduce the incidence and impact of cardiovascular disease which remains the leading cause of death. The highest demand on health services indicates the need for improved therapies and treatment. Significant advances in percutaneous coronary intervention ensures a better quality of life, living with coronary artery disease.

Percutaneous Coronary Intervention (PCI), commonly known as coronary angioplasty or simply angioplasty, is a non-surgical procedure used for treating the stenotic (narrowed) coronary arteries of the heart found in coronary heart disease. The stenotic segments are due to the build-up of the cholesterol-laden plaques that form due to atherosclerosis. Percutaneous Coronary Intervention is usually performed by an interventional cardiologist.

Globally, patients require 6,000,000 Percutaneous Coronary Intervention procedures such as balloon angioplasty or stent placement used for narrowed coronary arteries. Every year in India 941,248 patients are undergoing percutaneous coronary angiogram and patients who underwent Percutaneous Coronary Intervention are exposed to risks for complications like increased blood pressure, heart rate and anxiety and depression.

Today, the place where people live in is known as "obesigenic environment" which states over weight which constitutes for coronary diseases. It is the major contributor to the global burden of chronic disease and disability. Globally, 70 million people are affected with coronary diseases among which 17 million people die each year as a result of this coronary disease (WHO, 2014).

In the Indian scenario, even with growing awareness of health and illness, 20 million persons have coronary disease (India Today, 2014). The prevalence of coronary disease in Tamil Nadu is 17.2% whereas it is more than four times higher in urban areas (Rajam, 2012).

In philosophy, noetics is a branch of science of metaphysical philosophy concerned with the study of mind and intellect. Brown (1960) explains noetic sciences as how belief, thoughts and intentions affects the physical world. Noetic therapies is a generic term for a non-drug intervention in a medical condition like anxiety relaxations, guided imagery, touch therapy, music therapy and prayer.

Noetic therapies are among best interventions for reducing anxiety in patients undergoing Percutaneous Coronary Intervention. This study serves as an evidence for the health care professionals to practice noetic therapies among the patients. Many common medical, surgical, and diagnostic procedures performed for conscious patients can be accompanied by significant anxiety.

Mind-body-spirit interventions could serve as useful adjunctive treatments for reduction of anxiety. To evaluate the effects of anxiety management, imagery, touch therapy, and standard therapy on mood in patients awaiting percutaneous interventions for unstable coronary syndromes as part of the Monitoring and Actualization of Noetic Training (MANTRA) trial, this explored the feasibility and efficacy of noetic interventions on clinical outcomes in a randomized clinical trial.

A total of 150 patients were randomized to one of the five treatment conditions. Anxiety management, imagery, and touch therapy were administered in 30-minute treatment sessions immediately before cardiac intervention. Mood was assessed by a set of visual analogue scales before and after treatment. Analysis of complete data from 108 patients showed anxiety management, imagery, and touch therapy producing reduction in reported worry, as compared with standard therapy (Krukoff, 2006).

The results suggest likelihood of some noetic therapies having beneficial effects on mood in the course of medical and surgical interventions. Administration of these interventions was feasible even in the hectic environment of the coronary intensive care unit. Given their relatively low cost and limited potential for adverse effects, these interventions merit further study as therapeutic adjuncts (Mandla, 2004).

Since their advent over two decades ago, noetic therapies, before percutaneous intervention have evolved into a versatile and evidence – based approach. Even though there were few studies related to noetic therapies upon patients undergoing percutaneous coronary intervention in Indian settings, there is paucity of research in this area in our context.

Research and expansion of evidence based practice in western settings have played a significant role in this process. Nursing care will have a considerably greater impact when evidence based care is applied. This study provides guidance for patients who undergo percutaneous coronary intervention in the clinical set up for nurses as evidence based practice. Hence the investigator has undertaken this study to assess the effectiveness of selected Noetic Therapies upon clinical outcome of Patients with unstable angina undergoing Percutaneous Coronary Intervention.

Statement of the problem

An Experimental Study to assess the Effectiveness of selected Noetic Therapies upon clinical outcome of Patients with Unstable Angina undergoing Percutaneous Coronary Intervention at Apollo Hospitals, Chennai.

Objectives of the study

1. To assess the clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies.

2. To assess the effectiveness of selected noetic therapies by comparing the clinical outcome before and after noetic therapies among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention.
3. To assess the level of satisfaction of patients regarding selected noetic therapies in the experimental group of patients with unstable angina undergoing percutaneous coronary Intervention.
4. To find out the association between the selected demographic variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing Percutaneous coronary Intervention
5. To find out the association between selected clinical variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention.

Operational definitions and conceptual definitions

Effectiveness

Effectiveness means a change or changed state occurring as a result of direct action.

In this study, it refers to the ability of noetic therapies like relaxation technique, music therapy and guided imagery to bring about changes in clinical outcome using an observational checklist for heart rate and blood pressure, universal Pain assessment tool for measuring pain, hospital anxiety and depression scale to measure anxiety and depression.

Noetic therapies

It is a non-drug intervention in a medical condition using meditation, guided imagery, touch, prayer methods and music.

In this study, it refers to non-pharmacological treatment using relaxation technique like abdominal breathing for 5 to 7 minutes, music therapy using instrumental (sitar, violin, piano, strings) music for about 5 to 7 minutes with the help of head phones and guided imagery methods like imagining like a walk through the forest, fountain, chirping of the birds etc. by listening to the pre-recorded voice for 5 to 7 minutes to reduce anxiety, depression, pain and to maintain normal heart rate and blood pressure. Overall it took around 20 minutes for the therapy. It was given to the patients one hour before scheduled procedure of PCI.

Clinical outcome

A measure of the quality medical care, the standard against which the end results of the intervention are assessed.

In this study, the clinical outcomes includes blood pressure, heart rate, pain, anxiety and depression.

Blood pressure is the pressure that is exerted by the blood upon the walls of the blood vessels and especially arteries varying with the muscular efficiency of the heart, the blood volume and viscosity, the age and health of the individual, and the state of the vascular wall. It is measured by sphygmomanometer.

Heart rate is the speed of the heartbeat measured by the number of contractions of the heart per minute (beats per min). The heart rate can varies according to the body's physical needs, including the need to absorb oxygen and excrete carbon dioxide.

It is usually equal or close to the pulse measured at any peripheral point and here it was measured by radial pulse.

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage which is subjective in nature and it was measured by universal pain assessment scale.

Anxiety is an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure.

Depression is a mood disorder that causes a persistent feeling of sadness and loss of interest.

Anxiety and depression is measured by using a standardised tool called hospital anxiety and depression scale.

Patients

Patient is a person receiving or registered to receive medical treatment.

In this study, it refers to a group of people who are diagnosed to have unstable angina and proposed for percutaneous coronary intervention and admitted in the wards or cath day care units on the previous day or on the day of procedure and discharged in one or two days.

Unstable Angina

Unstable angina is angina pectoris which is an unexpected chest pain usually occurring during rest. The common cause is reduced blood flow to heart muscles due to atherosclerotic plaque with partial thrombosis and possibly embolization as diagnosed with ECG by ST segment depression or elevation by cardiologist.

In this study, it refers to a group of people who are admitted with the complaints of chest pain to cath day care or ward at Apollo Hospitals, Chennai.

Percutaneous Coronary Intervention

It is a procedure (Coronary Angiogram, Angioplasty, drug eluting and non-drug eluting stent placement and brachytherapy) performed for opening blocked coronary arteries caused by coronary artery disease and to restore arterial blood flow to the heart tissue without open heart surgery.

In this study, it is performed usually as a day care procedure upon patients with unstable angina proposed for Coronary Angiogram, Angioplasty, drug eluting and non-drug eluting stent placement and brachytherapy etc. in the Cardiac Catheterization Lab at Apollo Hospitals, Chennai.

Null Hypothesis

Ho_1 There will be no significant difference in the clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention before and after selected noetic therapies.

Ho_2 There will be no association between the selected demographic variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention.

Ho_3 There will be no association between the selected clinical variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

Assumptions

The study assume that

- Percutaneous Coronary Intervention is done for unstable angina.
- Percutaneous Coronary Intervention may cause changes in heart rate, blood pressure, anxiety, pain and depression among the patients.
- Noetic therapies includes music, relaxation and guided imagery.

Delimitations

The study is limited to

- A period of 6 weeks.
- Patients who were admitted in Apollo Hospitals for the treatment of Unstable Angina.

Conceptual framework

The conceptual framework deals with the interrelated concepts that are assembled together in some rational scheme by virtue of their relevance to a common theme (Polit and Beck 2012).

Conceptual frame work for the present study is based on King's Goal Attainment Theory (Martha 2013). According to Imogene King, Nursing is defined as the process of action, reaction, interaction, by nurses and clients who share the information about their perception. Through perception and communication they identify the problem through which they set goals and take necessary action.

King's Goal Attainment Theory is based on the concepts of personal, interpersonal and social systems including perception, judgement, action, reaction, interaction, transaction and perception.

Perception

A person imports energy from the environment and transforms, processes and stores it. The study assumes the presence of interpersonal relationship between the nurse, investigator and participants. The nurse investigator perceives a need for the development of an alternating nursing care like noetic therapies for unstable angina patients undergoing percutaneous coronary intervention for better clinical outcome which is assessed using standardized assessment skill.

Action leads to interaction where the nurse investigator executes noetic therapies upon a clinical outcome and there by the patient gets a satisfactory clinical outcome.

Transaction

Imogene King says that, the transaction is two individuals mutually identifying goals and the means to achieve them. They reach an agreement about how to attain these goals and then set about to realise them.

In this study, subjects from the experimental group shows highly satisfactory in their clinical outcome through noetic therapies and develop no complications.

Feed back

Outcome is either satisfactory or unsatisfactory. Satisfaction shows the effectiveness of application of noetic therapies and a satisfactory clinical outcome. In this study, the investigator appraises the level of satisfaction about the application of noetic therapies through rating scale. The therapy can be disseminated and implemented to the control group too when it is satisfactory. If not, the activities will be planned again or some other method will be adopted.

Judgement

It is the analysis of the areas in which action requires implementation. In this study, the nurse investigator verifies that the noetic therapies bring out satisfactory outcome for unstable angina patients undergoing percutaneous coronary intervention. Thus, the researcher takes the decision to implement the application of noetic therapies.

Action

Individuals export the perceived energy demonstrated as observable behaviour by taking physical activity. The Nurse investigator take action by administering noetic therapies for a satisfactory outcome for the patients.

Reaction

Reaction is the experience or outcome expected as a part of goal attainment. The noetic therapies for the patients in the experimental group was highly satisfactory. The nurse investigator makes arrangement for disseminating the information regarding noetic therapies and in turn the patients were benefited.

Interaction

Refers to verbal and non-verbal behaviour between an individual and the environment or two or more individuals. It involves goal directed perception and communication.

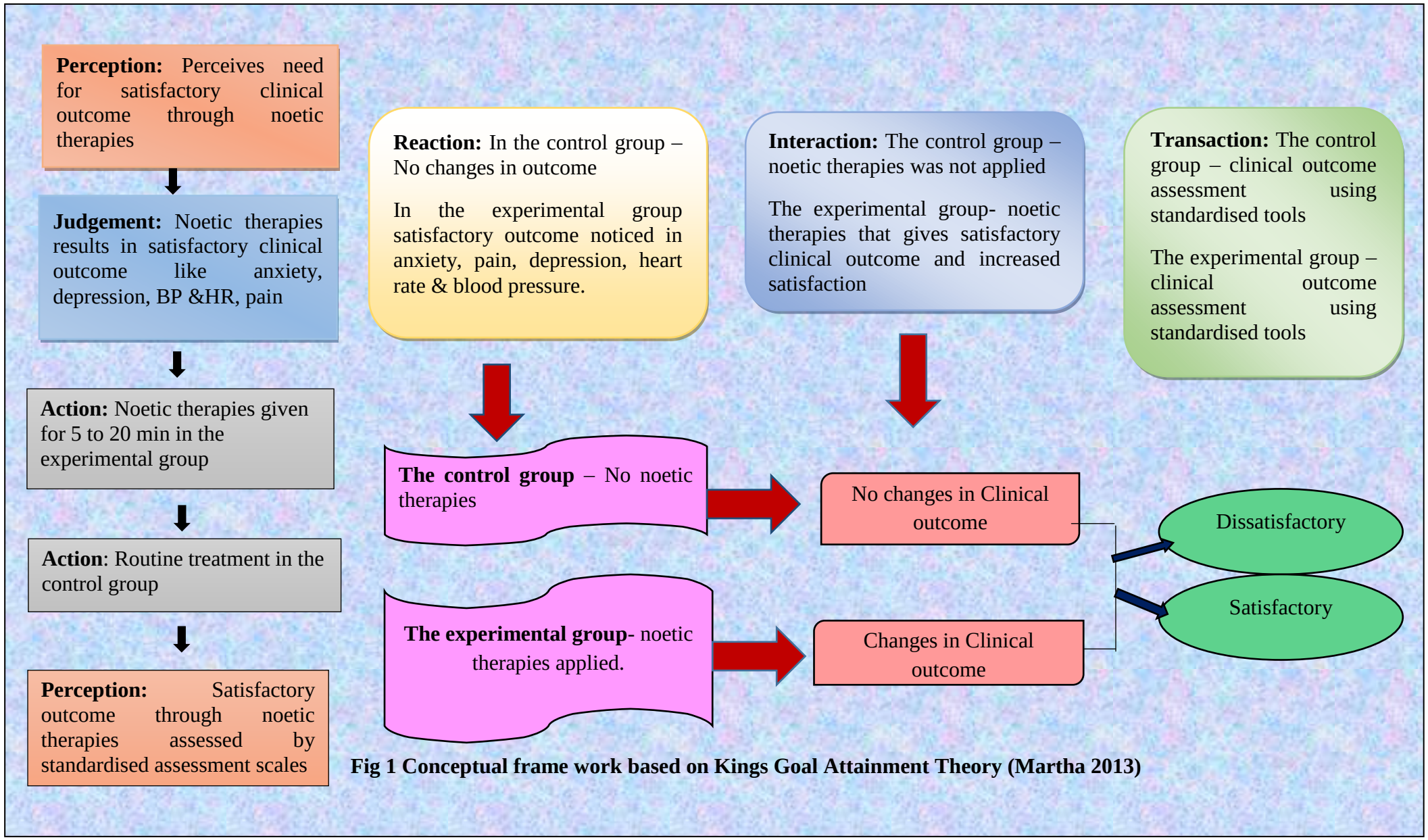

Fig 1 Conceptual frame work based on Kings Goal Attainment Theory (Martha 2013)

Projected outcome

The study result shows selected Noetic Therapies bringing about changes in clinical outcome of patients with unstable angina undergoing percutaneous coronary Intervention.

Summary

This chapter has dealt with the background, need for the study, and statement of the problems, objectives, assumptions, null hypotheses, delimitations and conceptual framework.

Organization of the Report

Further aspects of the study are presented in the following five chapters.

Chapter -II **:** Review of literature

Chapter -III **:** Research methodology includes research approach, research design, setting, population, sample and sampling techniques, tool description, content validity and reliability of tools, pilot study, data collection procedure and plan for data analysis.

Chapter -IV **:** Analysis and interpretation of data

Chapter -V **:** Discussion

Chapter -VI **:** Summary, conclusion, implications, recommendations and limitation.

CHAPTER II

REVIEW OF LITERATURE

Literature review is an organized written presentation of what has been published on a topic by scholars (Burns and Groove, 2004).

The task of reviewing literature involves the identification, selection, critical analysis and reporting of the current information on the topics of interest. A review acquaints the researcher with what has been done in the field and minimizes possibilities of unintentional duplication. It justifies the need for replication, and provides the basis for future investigation and helps to relate the findings of one study to another.

This chapter deals with a review of published and unpublished research studies and from related material for the present study. The review helped the investigator to develop an insight into the problem area and in building the foundation of the study.

This review of literature for this chapter has been presented under the following headings.

1. **Literature related to unstable angina and Percutaneous Coronary Intervention**
2. **Literature related to Noetic therapies upon Percutaneous Coronary Intervention**

Literature related to unstable angina and Percutaneous Coronary Intervention

A study was conducted by Fang, Veronique, et al (2010) in United States on the prevalence of unstable angina which was greatest among persons aged greater than 65 years (19.8%), followed by those aged 45-64 years (7.1%) and those aged 18-44 years (1.2%). Unstable angina prevalence was greater among men (7.8%) than women (4.6%), and among those with less than high school education (9.2%), compared with high school students and graduates (6.7%). The prevalence of unstable angina in males was among American Indian/Alaska Natives (14.3%) and whites (7.7%), and the greatest prevalence in females was among American Indian/Alaska Natives (8.4%) and blacks (5.9%).

Kirsten, Anders, et al (2007), conducted a cohort study in Denmark where incidence rates of unstable angina were 137 and 331 per 100,000 persons for women and men, respectively. The incidence rate of unstable angina was 234 per 100,000 person per year. Acute coronary syndrome constituted for 16.9%, Myocardial Infarction for 53.8%.

A study was conducted in the United States by Chan, Manesh, et al (2011) for assessing the appropriateness of Percutaneous Coronary Intervention within the National Cardiovascular Data Registry undergoing PCI at 1,091 Hospitals. Among 500,154 PCI patients, 355,417 (71.1%) were for acute indications like ST-segment elevation myocardial infarction, 103,245 (20.6%) non–ST-segment elevation myocardial infarction, 105,708 (21.1%) high-risk unstable angina, 146,464 (29.3%) and 144,737 (28.9%) for non-acute indications. For acute indications, 350,469 PCIs (98.6%) were classified as appropriate, 1,055 (0.3%) as

uncertain, and 3,893 (1.1%) as inappropriate. For non-acute indications, 72,911 PCIs (50.4%) were classified as appropriate, 54,988 (38.0%) as uncertain and 16,838 (11.6%) as inappropriate. The conclusion was all acute PCIs were classified as appropriate. For non-acute indications, 12% were classified as inappropriate with substantial variation across hospitals.

A prospective cohort study was conducted by Steven, Gilbert, et al (2013) for examining the prevalence of pain among the percutaneous coronary intervention patients. 150 unstable angina patients yet to receive PCI were enrolled. Multi-Dimensional pain scale was used for measuring the pain level. The results showed pain as a complex phenomenon that reduces the quality of life in patients undergoing percutaneous coronary intervention.

A study was conducted by Asia Pacific Heart Association (2010), to review the available cardiovascular risk assessment tools and its applicability in predicting cardiovascular risk among Asian populations. A total of 25 risk assessment tools were identified. Of these, only two risk assessment tools (8%) were derived from an Asian population. These risk assessment tools several points of difference including characteristics of derivation sample, type of study, and time frame of follow up, end points, statistical analysis and risk factors included. The conclusion is that with very few cardiovascular risks of the population, there is a need to develop a risk assessment tool based on local epidemiological data.

A study was conducted by Teng, Zhang, et al (2007) to examine to what extent, listening to a certain type of music can help hypertensive patients get their

blood pressure lowered. Experiments were conducted for coronary angiogram patients at an elderly home. Thirty subjects aged 63-93 years participated in the study and were randomly assigned into either a music group (n=15) or a the control group (n=15). There were no significant differences between the two groups in initial BP values, age, gender, or medication status. Subjects in the music group listened to selected music, 25 min every day for 4 weeks. BP was measured twice a week by a registered nurse with a sphygmomanometer during the 4 week study period and also after the completion of the study. After 4 weeks, the average decrease for the music group (n=12) in systolic BP (SBP) and diastolic BP (DBP) was 11.8 mmHg (p=0.008) and 4.7 mmHg (p=0.218), respectively, whereas there was no significant changes in SBP or DBP for the control group (n=14). The results suggest that listening to a certain type of music serves to reduce high SBP and therefore music therapy may be an alternative for hypertension treatment.

In Japan, a randomized comparative study was conducted by Nishigaki, Yamazaki, et al (2008) for determining whether initial medical therapy (MT) only or Percutaneous Coronary Intervention plus medical therapy (PCI plus MT) is good for patients with low-risk stable Coronary Artery Disease (CAD). During the 3.3 year follow-up, there was no significant difference in the cumulative death rate between Percutaneous Coronary Intervention plus Medical therapy (2.9%) and Medical Therapy (3.9%). But the cumulative risk of death plus acute coronary syndrome was significantly smaller in Percutaneous Coronary Intervention plus Medical Therapy. The study concludes that in stable low-risk Coronary Artery

Disease, Percutaneous Coronary Interventions plus Medical Therapy may improve long-term prognosis more effectively than Medical Therapy.

A cohort study conducted by Brodaty et al. (2001) found 52% depression with first onset at age 60. Rates of major depression among older adults are substantially higher in particular subsets of the older adult population, including medical outpatients who undergo percutaneous coronary intervention for unstable angina and revascularisation (5-10%, though estimates vary widely), medical inpatients (10-12%), and residents of long term care facilities.

Literature related to Selected Noetic therapies upon Percutaneous Coronary Intervention

A study was conducted in the Catheterization Laboratory Unit of Baqiyatallah Hospital, in Tehran, Iran. A sample of 64 patients, who were planned to undergo coronary angioplasty was recruited. Patients were randomly allocated to either the control or the experimental group. In the experimental group, patients received a 20 to 40 minute music therapy intervention, consisting of light instrumental music. Before the intervention, the study groups did not differ significantly in terms of anxiety level and hemodynamic parameters. Moreover, the differences between the two groups, regarding hemodynamic parameters, were not significant after the intervention. The level of post-intervention anxiety in the experimental group was significantly lower than with the control group.

A study was conducted by Chan, Wong, et al (2006) at Hong Kong for determining the effect of music on physiological parameters and level of pain in

patients undergoing application of a C-clamp after percutaneous coronary interventions among forty-three samples recruited from the intensive care units. Physiological and psychological variables were collected at baseline and at 15, 30 and 45 minutes. In the music group, there were statistically significant reductions (P=0.001) in heart rate, respiratory rate, and oxygen saturation than the control participants at 45 minutes. In the music group, statistically significant reductions (P=0.001) in systolic blood pressure, heart rate, respiratory rate and oxygen saturation were found at the four time points, but not in the control group. They concluded that music is a simple, safe and effective method of reducing potentially harmful physiological and psychological responses arising from pain.

A study was conducted in North California by the Department of Advanced Practice Nursing (2004) on the effects of anxiety management, imagery, touch therapy, remote intercessory prayer, and standard therapy on mood in patients awaiting percutaneous interventions for unstable coronary syndromes as part of the Monitoring and Actualization of Noetic Training (MANTRA) trial. A total of 150 patients were randomized to one of the five treatment conditions. Stress management, imagery, and touch therapy were administered. Analysis of complete data from 108 patients showed that stress management, imagery, and touch therapy all produced reduction in reported worry, as compared to standard therapy. The results suggest some noetic therapies having beneficial effects on mood in the course of medical and surgical interventions.

A study was conducted for assessing the effect of music on the physiologic and psychological parameters in patients undergoing application of a C-clamp

after percutaneous coronary interventions (PCI) at three intensive care units in Hong Kong. Sixty-six patients undergoing application of a C-clamp after PCI were recruited. Physiologic parameters were blood pressure, heart rate, respiratory rate, and oxygen saturation. Psychological parameters were measured using the University of California at Los Angeles universal pain score. Patients were randomized to receive 45 minutes of music therapy or 45 minutes of an uninterrupted rest period. Music of three types was used, including Chinese classical music, religious music, and Western classical music that had slow beats and was relaxing. The data were collected during September 2004 to December 2005. In the experimental group, there were statistically significant reductions in heart rate ($P < .001$), respiratory rate ($P < .001$), and oxygen saturation ($P < .001$), and pain score.

A study was conducted by Krucoff, Crater, et al (2006) among150 Patients undergoing percutaneous coronary intervention (PCI) for unstable coronary syndromes with substantial emotional and spiritual distress that may promote procedural complications. Noetic (non-pharmacologic) therapies-stress relaxation, imagery, touch therapy, and prayer-to patients in the setting of acute coronary interventions may reduce anxiety, pain and depression, enhance the efficacy of pharmacologic agents, or affect short and long-term procedural outcomes. The result was around 25% to 30% absolute reduction in adverse peri-procedural outcomes in patients treated with any noetic therapies compared with standard therapy. Acceptance of noetic adjuncts to invasive therapy for acute coronary syndromes was excellent, and logistics were feasible.

Durham, Ehman, et al have conducted a study (2004) at Duke University Medical centre, U.S. Among 118 patients who underwent invasive cardiac procedures were provided with guided imagery, stress relaxation, healing touch or intercessory prayer. The results showed that those who received noetic treatments had lower absolute complication rates and a lower absolute incidence of post-procedural ischemia during hospitalization.

A study was conducted by Claire, Ghetti (2012) at Indiana University on the effect of music therapy on pre procedural anxiety in patients undergoing cardiac catheterization. 150 patients were selected randomly and were provided music of their own preference. The conclusion was that the hemodynamic parameters and psychological wellbeing were good when compared to routine treatment.

Seskevich, James (2004) have conducted a study on the Beneficial Effects of Noetic Therapies on Mood Before Percutaneous Intervention for Unstable Coronary Syndromes to evaluate the effects of stress management, imagery, touch therapy, remote intercessory prayer, and standard therapy on the mood in patients awaiting percutaneous intervention for unstable coronary syndromes. Among a total of 150 patients were randomized to one of the five treatment conditions. Stress management, imagery, and touch therapy were administered in 30-minute treatment sessions immediately before the cardiac intervention. Analysis of complete data from 108 patients showed stress management, imagery, and touch therapy all producing reduction in reported worry, as compared with standard therapy.

A study was conducted by Stein, Olivo, et al (2010) to assess the effects of guided imagery audio tape intervention on psychological outcomes in patients undergoing coronary artery bypass graft surgery at Columbia medical university. Fifty-six patients scheduled to undergo coronary artery bypass graft at Columbia University Medical Centre were randomized into 3 groups: guided imagery, music therapy, and standard care control. Patients in the imagery and music groups listened to audiotapes at the preoperative stage. It concluded that, patients who received guided imagery and music therapy shows significant difference in their clinical outcome when compared to standard therapy.

Kshettry, Johnson, et al (2006) have conducted a study of Complementary alternative medical therapies for heart surgery patients: feasibility, safety, and impact at Abbott North-western Hospital, Minneapolis, Minnesota, USA. One hundred four patients undergoing open heart surgery were prospectively randomized to receive either complementary therapy (preoperative guided imagery training with gentle touch or light massage and music at the postoperative period with gentle touch or light massage and guided imagery) or standard care. Heart rate, systolic and diastolic blood pressure, and pain and tension were measured at preoperative period and as pre-tests and post-tests during the postoperative period. The results showed all patients in the complementary therapy group (95%) decreased heart rate and systolic blood pressure in the complementary therapies group, in all patients in the complex judged within the range of normal values. Complication rates were very low and occurred with similar frequency in both groups. Pre-treatment and post treatment pain and tension scores decreased significantly in the complementary alternative medical therapies group on postoperative days.

A randomized controlled trial was conducted by Forooghy, Elaheh, et al (2015) in the Catheterization Laboratory Unit of Baqiyatallah Hospital, in Tehran, Iran to assess the effect of music therapy on patients anxiety and hemodynamic parameters during coronary angioplasty. Among 64 patients, those of the experimental group received 20 to 40 minute music therapy intervention, consisting of light instrumental music albums by Johann Sebastian Bach and Mariko Makino. Study data were collected by a demographic questionnaire, the Spielberger's State Anxiety Inventory, and a data sheet for documenting hemodynamic parameters. The study concluded that Music therapy is a safe, simple, inexpensive, and non-invasive nursing intervention, which can significantly alleviate patients anxiety during coronary angioplasty.

Nilsson, Birgit (2011), have conducted a randomized controlled study on music intervention in patients during coronary angiographic procedures; effect on patients anxiety and well-being. Effects of patient focused music versus loudspeaker music versus standard sound on patient's experiences of anxiety and well-being during coronary angiographic procedures were assessed. A sample size of 98 were randomly allocated to three different groups of sound environments. A control group (the usual sound environment), a patient focused music group (audio pillow) or to a loudspeaker music group. This study showed the use of a specially designed music reducing anxiety and increasing well-being in patients during coronary angiographic procedures. Patient focused music seemed to be more preferable. The sound environment was rated more positively by the subjects listening to music via audio pillow. The music delivered via loudspeakers seemed to distract the staff during the examination at the cardiac catheterization laboratory.

Klassen, Bernatzky, et al (2012), have done a systematic review of randomized controlled trials of the efficacy of music therapy (MT) on pain and anxiety on patients undergoing clinical procedures. Patients who undergo clinical procedures were examined, music was used as an intervention, and the study measured pain or anxiety. Music therapy was considered active when a music therapist was involved and was used as a medium for interactive communication. Passive music therapy was defined as listening to music without the involvement of a music therapist. It concluded that music is effective in reducing anxiety and pain in children undergoing medical and dental procedures. Music can be considered an adjunctive therapy in clinical situations that produce pain or anxiety.

Riordan has conducted a study at the European Society of Cardiology Congress (2009) to investigate help from music therapy in reducing blood pressure, heart rate, and patient anxiety. In total, 740 patients, with 370 patients receiving two sessions of music therapy for 12 minutes daily and 370 patients not listening to music. Results during the seven-year follow-up period show less anxiety among patients using music therapy and with acute coronary syndrome and having undergone revascularization, statistically significant reductions in systolic and diastolic blood pressures and heart rate, also had significantly less angina, less heart failure, and lower rates of re-infarction, sudden death, and revascularization.

A prospective cohort study was conducted by Dooley, Marie, et al (2015) to find out the Relationship between Body Mass Index and Prognosis of Patients Presenting with Potential Acute Coronary Syndromes. Patients were stratified according to their BMI: underweight (BMI < 18.49 kg/m^2), normal weight (BMI =

18.5 to 24.99 kg/m^2), overweight (BMI = 25 to 29.99 kg/m^2), obese (BMI = 30 to 34.99 kg/m^2), and very obese (BMI > 35 kg/m^2). The primary outcome was acute myocardial infarction (AMI), death, or revascularization within 30 days of presentation. Of the 3,946 patients included in this study, 73 (1.9%) were underweight, 911 (23%) were normal weight, 1,199 (30.4%) were overweight, 872 (22.1%) were obese, and 891 (22.6%) were very obese. Increased levels of obesity were associated with a greater number of cardiac risk factors.

Summary

This chapter has dealt with a review of literature related to the problem stated. It has helped the researcher to understand the impact of the problem under study. It has been enabled the investigator to design the study, develop the tool, plan the data collection procedure and to analyse the data. This chapter consists of 20 primary studies and 3 secondary studies.

CHAPTER III

RESEARCH METHODOLOGY

The methodology of research study is defined as the way the information from participants is gathered for answering the research questions or analyse the research problem (Polit and Beck 2012). It enables the researcher to project a blue print for research undertaken. The research methodology involves a systematic procedure by which the researcher had a start from initial identification of the problem to find its conclusion.

The present study was conducted for assessing the Effectiveness of selected Noetic Therapies upon clinical outcome of Patients undergoing Percutaneous Intervention for Unstable angina at Apollo Hospitals, Chennai.

Research Approach

Research approach indicates the basic procedure for conducting research. The choice of the appropriate research depends on the purpose of the study. The main objective of the study was to assess the effectiveness of selected Noetic Therapies upon clinical outcome of Patients with unstable angina undergoing percutaneous coronary Intervention. Hence an experimental approach is adopted by the investigator.

Research design

According to Polit and Beck (2012), a research design is the overall plan for addressing a research questions, including specifications for enhancing study's integrity

Research design used in this study is quasi experimental, pre-test post-test research design to find out the effectiveness of selected Noetic Therapies upon changes in clinical outcome of Patients undergoing Percutaneous Intervention.

Quasi experimental pre-test post-test research design

O_1 O_2

O_1 X O_2

O_1 - Pre-test level of clinical outcome in control and the experimental groups

X - Selected Noetic Therapies.

O_2 - Post-test level of clinical outcome after selected noetic therapies after Percutaneous Coronary Intervention in control and the experimental groups.

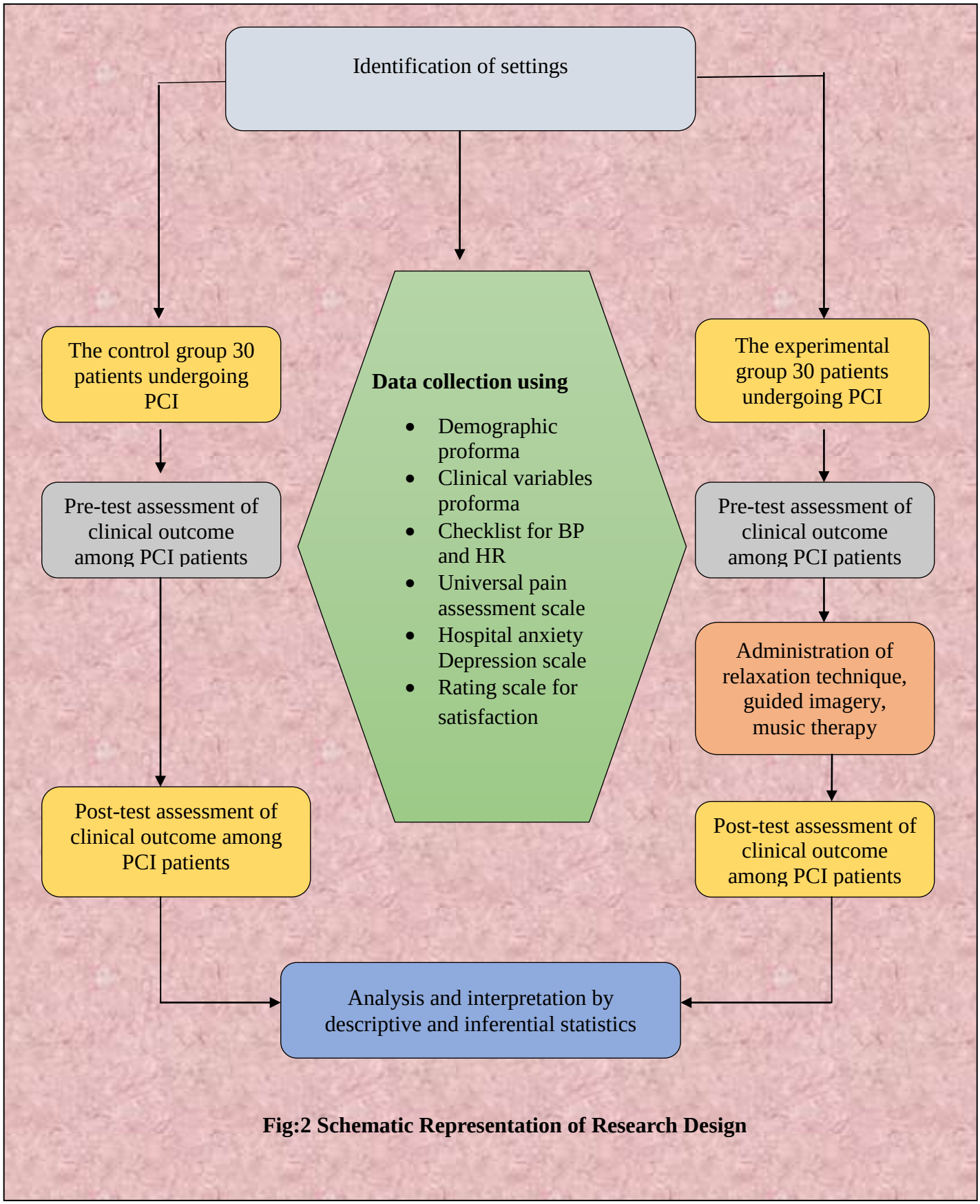

Fig:2 Schematic Representation of Research Design

Intervention protocol

The first step of the protocol was to establish rapport and facilitate a therapeutic alliance.

Relaxation technique

The relaxation technique includes, slow abdominal breathing, concentrating and listening to the pre-recorded voice through head phone.

The patients were encouraged to return kindly and gently to the pre-recorded voice about relaxing muscles of body from head to toe. Instruction and practice was presented in the patient's room for duration of 5 to 7 min.

Guided Imagery

- The patients asked for a slow, mindful relaxation breath.
- The investigator guided the patients using pre-recorded voice in the selection of a preferred place and directed the patients to focus attention and imagination on this place where he or she would rather be (e.g,walk through the forest, fountain, chirping of the birds etc.).
- The patients then complete a brief practice trial of the intervention, using the relaxation breath and the preferred place imagery for 5 to 7 min duration.

Music therapy

Pre-recorded music was used for patients, who were allowed to wear the headphones with musical background of Instrumental music of their choice for 5 to 7 min before the Percutaneous Coronary intervention. Types of instrumental music were sitar, violin, piano, strings, and flute according to the preference of the patient.

Overall the therapy took around 20 minutes. It was administered one hour before scheduled procedure to the patients who are diagnosed to have unstable angina and proposed for percutaneous coronary intervention and admitted in the wards or cath day care units on the previous day or on the day of procedure and discharged in one or two days.

Variables

A variable is an attribute that varies and takes on different values (Polit and Beck 2012)

Independent variable

The variable that is believed to cause or have influence over the dependent variable is the independent variable (Polit and Beck 2012).

In this study, the independent variable consists of selected noetic therapies (Relaxation technique, guided imagery and music therapy).

Dependent variable

The variable hypothesized to depend on or be caused by another variable is the dependent variable (Polit and Beck 2012).

In this study, the dependent variable is clinical outcome (Blood Pressure, Pain, Heart rate, Anxiety and depression.)

Attribute variable

Variables that describe the study sample characteristics are termed as attribute variables (Polit and Beck 2012).

In this study, the attribute variables are demographic variables proforma which includes age, gender, type of family, marital status, education, occupation and type of family and clinical variables proforma which includes height, weight,

BMI, blood pressure, history of CAD, percentage of stenosis, extent of CAD, ejection fraction, history of smoking, severity of symptoms, history of co morbid illness etc of patients who undergo Percutaneous Coronary Intervention.

Research setting

The present study was conducted in Apollo Main Hospitals, Greams Road. Chennai. Apollo Main Hospital is Joint Commission accredited and it is Asian's foremost integrated healthcare group with four thousand doctors with fifty specialties in cardiac, gastrology, neurology and urology areas. The hospital has a bed strength of 700 and census of 650. The higher number of patients admitted here are with neurological cardiovascular problems. Nearly ten patients per day with coronary syndrome were getting admitted.

Population

Population is the entire set of individuals or objects having some common characteristics.

Target population is the group of population that the investigator aims to study and to whom the study finding were generalized (Polit and Beck 2012).

In this study target population comprises of the unstable angina patients undergoing percutaneous coronary intervention.

The accessible population is the list of population that the investigator finds in the study area. (Polit and Beck 2012).

The accessible population in this study is the patients undergoing percutaneous coronary intervention in Apollo Hospitals, Chennai.

Sample

The sample is the subset of population, selected for participation in a study. (Polit and Beck 2012). A sample consists of patient's with unstable angina who undergoing percutaneous coronary intervention at Apollo main hospitals, Chennai and who satisfied the inclusion criteria.

Sample size

Sample size of this study was 60, in which 30 in the control group and 30 in the experimental group.

Sampling

Sampling is the process of selecting a portion of the population as representative of the entire population (Polit and Beck 2012).

Purposive sampling technique was used in this study.

Participants who are willing to participate in the study and who fulfil the selection criteria.

Criteria for sample selection

Inclusion criteria

The study included

- Patients with the age between 30-60 years.
- Patients diagnosed with unstable angina and proposed for percutaneous coronary intervention and admitted in the wards or cath day care units on the previous day or on the day of procedure and discharged in one or two days.
- Patients willing to participate and with knowledge of English.

Exclusion criteria

The study excluded

- Patients diagnosed with mental disorders.
- Patients with hemodynamic instability.
- Critically ill patients.

Selection and development of study instruments

The study is aimed to evaluate the effectiveness of selected Noetic Therapies upon changes in clinical outcome of Patients with unstable angina undergoing percutaneous coronary Intervention. The data collection instruments were developed through an extensive review of literature in consultation with opinion of experts and with the opinion of faculty members. The instruments used in this study are listed below.

Instruments used

1. Demographic variable Proforma.
2. Clinical variable Proforma.
3. Observation checklist for blood pressure and heart rate.
4. Universal Pain Assessment Tool.
5. Hospital Anxiety and Depression.
6. Rating scale for patient satisfaction.

Demographic variable proforma

Demographic variables proforma consist of age, gender, type of family, marital status, educational status, occupation and type of food.

Clinical variable proforma

Clinical variables consist of height, weight, pulse, body mass index, blood pressure, smoking, previous history of coronary artery disease, percentage of stenosis, extent of coronary artery disease, ejection fraction, severity of symptoms, history of co morbid illness, history of treatment for any illness, pre medication before procedure, pain medication after procedure.

Check list for Blood Pressure

The purpose is to assess the non-invasive hemodynamic parameters like blood pressure of the participants in the control and the experimental group regarding selected noetic therapies. It has four components starting from 0 to 4. Zero indicates blood pressure less than 100 systolic and diastolic 70 to the fourth component which indicates blood pressure more than 150 systolic and 100 diastolic expressed in terms of mm of Hg.

INTERPRETATION

0 Hypotensive

1 Normal blood pressure

2 Mild Hypertensive

3 Moderate Hypertensive

4 Severe Hypertensive

Check list for heart rate

The purpose is to assess the heart rate of the participants in the control and the experimental group regarding selected noetic therapies. It has three components starting from 0 to 2. Zero states pulse rate less than 60 and two indicates pulse rate more than 100 expressed in terms of beats per minute.

INTERPRETATION

0 Bradycardia

1 Normal heart rate

2 Tachycardia

Universal Pain Assessment Tool

This is the universal pain assessment scale intended to help in assessment using 0 to 10. This pain assessment tool is intended to help patient care providers to assess the pain according to individual patient needs.

Scoring

0	-	No pain
1 to 2	-	Mild pain
3 to 6	-	moderate pain
7 to 10	-	severe pain

Hospital Anxiety and Depression scale

It was originally developed by Zigmond and Snaith for determining the levels of anxiety and depression that a patient is experiencing. It is a 14 item scale that generates original data. Each item has 4 responses.

Scoring (add the A's = Anxiety, add the D's= depression). 0 is the minimum score 21 is the maximum score. Obtained score is interpreted as follows.

Scoring

0-7 = Normal

8-10 = Borderline anxiety or depression

11-21 = Anxiety or depression

(Zigmond and Snaith (1983)

Check list for patient satisfaction

A checklist was prepared by the investigator for determining the satisfaction of patient. This rating scale consists of 10 items. The patients choose appropriate responses for identifying the level of satisfaction. Responses ranged from highly satisfied to highly dissatisfied and scoring ranged from 0-3. Higher the score more the satisfaction and lesser score indicates lesser satisfaction. In this checklist score of 3 is given for the response of highly satisfied and zero for highly dissatisfied.

Scoring

Highly Dissatisfied - 0

Dissatisfied - 1

Satisfied - 2

Highly satisfied - 3

The total score is converted into percentage and graded as given below.

Interpretation

Highly Satisfied - 76-100%

Satisfied - 51-75%

Dissatisfied - 25-50%

Highly Dissatisfied - Below 25%

Psychometric Properties of the Instruments

Validity

Content validity is the degree to which an instrument measures what it is supposed to measure. Content validity is the sampling adequacy of the content being measured (Polit and Beck 2012).

The content validity of the tool was obtained by getting opinion from experts in the field of medicine and nursing. The validation has suggested some specific modifications in the objectives and clinical variables. The modifications and suggestions of experts were incorporated in the final report on the tool.

Reliability

Reliability is the degree of consistency with which an instrument measures the attribute it intended to measure (Polit& Beck, 2012). The reliability of the tools was determined by using split half method and inter rater technique. Karl Pearson's 'r' was computed to find out the reliability.

Observation checklist for blood pressure-Inter rater technique (r = 0.80)

Observation checklist for heart rate -Inter rater technique (r = 0.80)

Universal Pain Assessment Tool for pain -Inter rater technique (r = 0.81)

Hospital Anxiety and Depression -Split half method (r = 0.85)

Rating scale for patient satisfaction -Split half method (r = 0.82)

Pilot study

According to Polit& Beck (2012) a Pilot study is a miniature version of the actual study, in which the instruments are provided to the subjects drawn from the population. It is a small scale version or trial run done in the preparation for the

major study. The purpose was to find out the feasibility and practicability of the design and for pre-testing of tools.

The pilot study was conducted among 12 patients with unstable angina undergoing Percutaneous Coronary Intervention in Apollo Speciality Hospitals, Vanagaram, Chennai from 2/6/2015 to 7/6/2015. Six patients in the experimental group and six in the control group were selected as study participants. Observation was done by using the pre-determined tools. After the pilot study, the study was found to be feasible and study instruments were found to be appropriate.

Ethical Considerations

- The study was conducted after obtaining ethical clearance from ethical committee, Apollo hospitals, Chennai and permission from the Research and Medical guide.
- Setting permission was obtained from medical superintendent of the hospitals.
- Informed Consent was obtained from all the participants before the data collection.
- Confidentiality was maintained throughout the study.

Data collection procedure

A formal permission was obtained from the authorities of the hospital and the ethical committee. A total number of 60 samples were selected. The investigator selected the samples by using purposive sampling and explained the purpose of the study to participants. Consent was obtained from all the participants. Data was collected by using pre-determined tools. The baseline data

for demographic variables proforma, clinical variables proforma was collected from the patients.

Noetic therapies (Relaxation technique, music therapy and guided imagery) were administered at one stroke altogether for 20 min in the pre-operative ward/ cath day care on the day of surgery. Data of the control group was collected first, followed by data of the experimental group to prevent contamination. Only pre-test and post-test were conducted in the control group without intervention. For the experimental study, pre-test was conducted before the procedure. Post-test was conducted on the same day one hour after the procedure from 7.30am till 4pm for the patients diagnosed with unstable angina proposed for percutaneous coronary intervention. Noetic therapies were given one hour prior to the procedure (PCI).

Problems Faced During the Process of Data Collection

The problems faced during data collection were,

- Conducting post-test was found difficult for the patients who were taken for procedure after 3pm.
- Some patients were not interested and declined to participate in the study.

Plan for data analysis

Data analysis is the systematic organization, synthesis of research data, and testing of null hypothesis by using obtained data (Polit& Beck, 2012).

After the data collection the investigator organized, tabulated, summarized and analysed the data.

Data analysis was done using descriptive statistics like mean, median, standard deviation and inferential statistics like t-test and chi square test.

Summary

This chapter has dealt with selection of research approach, research setting, population, sample size, sampling technique, sampling criteria, selection and development of study instruments, validity, reliability of the study, pilot study, data collection procedure, problems faced during data collection and plan for data collection.

CHAPTER IV

ANALYSIS AND INTERPRETATION

Data analysis is done to reduce, organize and give meaning to the data. The results obtained from data analyses require interpretation to be meaningful. Interpretation of data involves examination of the results from data analysis forming conclusions, considering the implications for nursing, exploring the significance of the findings and suggesting further studies (Polit& Beck, 2012).

This chapter deals with analysis and interpretation of data including both descriptive and inferential statistics. The data were analysed on the basis of the objectives and hypothesis of the study. Analysis of the data was done after all the data was transferred to the master coding sheet. The data were analysed, tabulated and interpreted using appropriate descriptive and inferential statistics.

Organization of Findings

The findings of the study was organized and presented under the following headings.

- Frequency and percentage distribution of demographic variables of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
- Frequency and percentage distribution of clinical variables of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Frequency and percentage distribution of the levels of clinical outcome (non-invasive hemodynamic parameters like blood pressure, heart rate and pain) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Frequency and percentage distribution of levels clinical outcome (Anxiety, Depression) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Comparison of the mean and the standard deviation of clinical outcome (non-invasive hemodynamic parameters like blood pressure, heart rate and pain) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention before and after noetic therapies

- Comparison of the mean and the standard deviation of clinical outcome (non-invasive hemodynamic parameters like blood pressure, heart rate and pain) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Comparison of the mean and the standard deviation of clinical outcome (Anxiety and Depression) of control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention before and after noetic therapies.

- Comparison of the mean and the standard deviation of clinical outcome (Anxiety and Depression) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Frequency and percentage distribution of the level of satisfaction of the experimental group of patients with unstable angina undergoing percutaneous coronary intervention.
- Association between demographic variables and clinical outcome (non-invasive hemodynamic parameters like blood pressure) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
- Association between demographic variables and clinical outcome (non-invasive hemodynamic parameters like heart rate and pain) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
- Association between clinical variables and clinical outcome (non-invasive hemodynamic parameters like blood pressure) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
- Association between clinical variables and clinical outcome (heart rate and pain) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Association between demographic variables and clinical outcome (Anxiety, Depression) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
- Association between clinical variables and clinical outcome (Anxiety, Depression) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

Table. 1

Frequency and Percentage Distribution of Demographic Variables of the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Demographic Variables	Control group (n=30)		Experimental group (n=30)	
	n	%	n	%
Occupation				
Employed	20	66.66	21	70
Unemployed	0	0	0	0
Homemaker	3	10	5	16.66
Retired	7	23.33	4	13.33
Educational status				
Primary	0	0	0	0
Secondary	6	20	11	36.66
Higher secondary	10	33.33	6	20
Degree and above degree	14	46.66	13	43.33
Type of food				
Non-vegetarian	25	83.33	26	86.66
Vegetarian	5	16.66	4	13.33
Marital status				
Married	30	100	30	100
Unmarried	0	0	0	0
Type of family				
Joint family	13	43.33	7	23.33
Nuclear family	14	46.66	19	63.33
Extended family	3	10	4	13.33

The data in the table 1 reveals more than two thirds of the patients with unstable angina undergoing percutaneous coronary intervention as employed (66.66%, 70%), around half of them were graduates (46%, 43.33%), lives as a nuclear family (46.66% 63.33%) most of them were non-vegetarian (83.33%, 86.66%), and all of them are married (100% 100%) in control and the experimental group respectively.

Figure 3 infers that (70% and 50%) of patients in control and the experimental groupwith unstable angina undergoing percutaneous coronary intervention were in the age group of 51-60 years.

Figure 4 infers that majority of patients (90%, 80%) in control and the experimental groupswith unstable angina undergoing percutaneous coronary interventionas males.

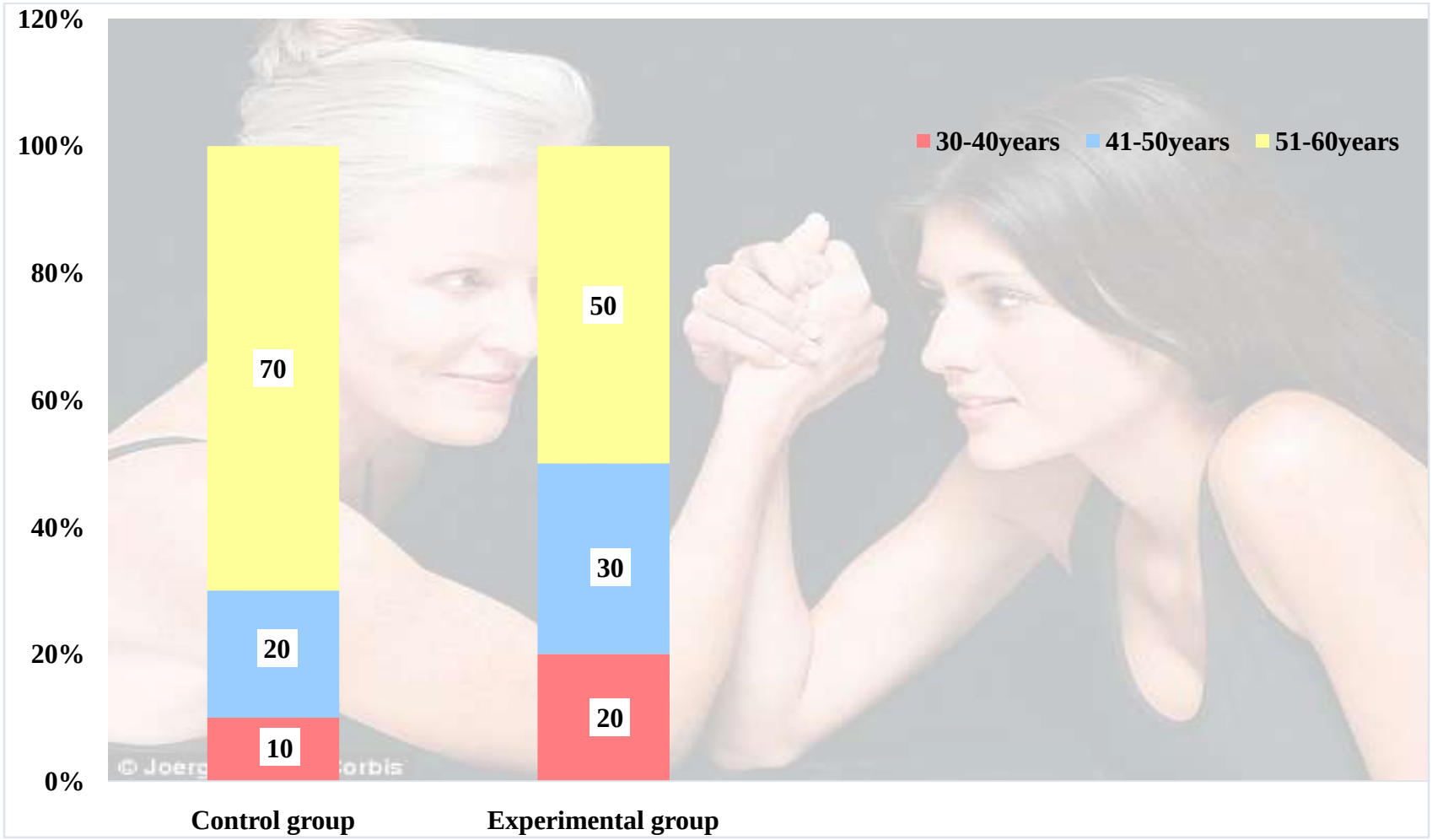

Fig. 3 Percentage Distribution of Age among the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

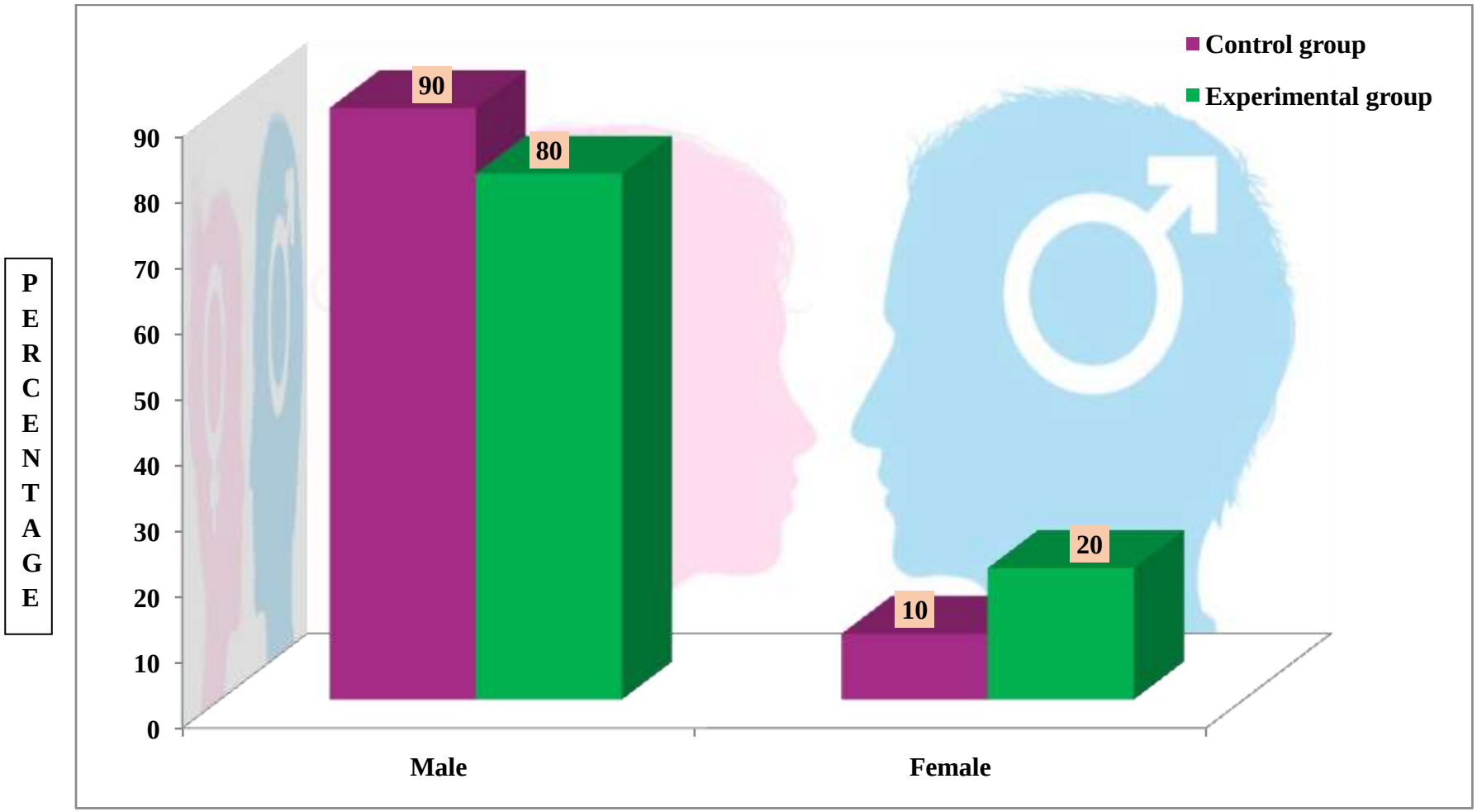

Fig. 4 Percentage Distribution of Gender among the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Table 2

Frequency and Percentage Distribution of Clinical Variables of the Control and The experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Clinical Variables	Control group (n=30)		Experimental group (n=30)	
	n	%	n	%
Heart rate/min				
Bradycardia	4	13.33	41	3.33
Normal heart rate	11	36.66	13	43.33
Tachycardia	15	50	17	56.66
Blood Pressure				
Hypotensive	6	20	4	13.33
Normal blood pressure	9	30	6	20
Mild Hypertensive	2	6.66	9	30
Moderate Hypertensive	5	16.66	3	10
Severe Hypertensive	8	26.66	8	26.66
Percentage of stenosis				
1 to 50% (Non-Obstructive)	11	36.66	41	3.33
> 50% (Obstructive)	13	43.33	23	76.66
Not known	6	20	3	10

Extent of C A D				
No vessels involved	6	20	1	3.33
Single vessel involved	15	50	9	30
Two vessels involved	8	26.66	15	50
Three vessels involved	1	3.33	5	16.66
Ejection fraction				
50 to 75% (Normal)	13	43.33	8	26.66
36 to 49% (Below normal)	16	53.33	15	50
35% and below (Low)	1	3.33	7	23.33
Severityofsymptoms(NYHA)				
Normal physical activity causes no fatigue (Class I)	11	36.66	2	6.66
Slight limitation of physical activity (Class II)	13	43.33	9	30
Marked physical activity comfortable at rest (Class III)	6	20	13	43.33
Unable to carry out activities without discomfort (Class IV)	0	0	6	20
History of Co-morbid illness				
Diabetes Mellitus	2	6.66	5	16.66
Hypertension	3	10	9	30
COPD	4	13.33	0	0
Others	21	70	16	53.33
History of treatment for any illness				
Yes	5	16.66	14	46.66
No	25	83.33	16	53.33

Premedication				
Yes	19	63.33	4	13.33
No	21	70	26	86.66
Pain medication				
Yes	30	100	30	100
No	0	0	0	0

Table 2 shows half of the patients with unstable angina undergoing percutaneous coronary interventionhaving normal body mass index (56.66, 13.33) and over weight (56.66%, 53.33%), having high blood pressure (53.33%, 66.66%), majority of them being smokers (60%, 80%), with no history of CAD (83.33%, 56.66%), no history of taking medications (83.33%, 53.33%) and more than half of them having co-morbid illness (70%, 53%), in control and the experimental group respectively.

Table 2 shows that around half (43.33%, 30%) of patients having slight limitation of physical activity and (43.33% and 76.66%) more than 50% of stenosis. Half of the patients had one and two vessel disease (50%, 50%), and ejection fraction (53.33%, 50%) in patients with unstable angina undergoing percutaneous coronary intervention in control and the experimental groups of respectively.

Fig.5 indicates that more than half of the patients with unstable angina undergoing percutaneous coronary intervention being in the category of overweight (53.33%).

Fig.6 indicates patients with unstable angina undergoing percutaneous coronary intervention depicts that majority of patients being smokers (60%, 80%).

Fig.7 depicts that significant number of patients with unstable angina undergoing percutaneous coronary intervention not having had any previous history of CAD (83.33%, 56.66%).

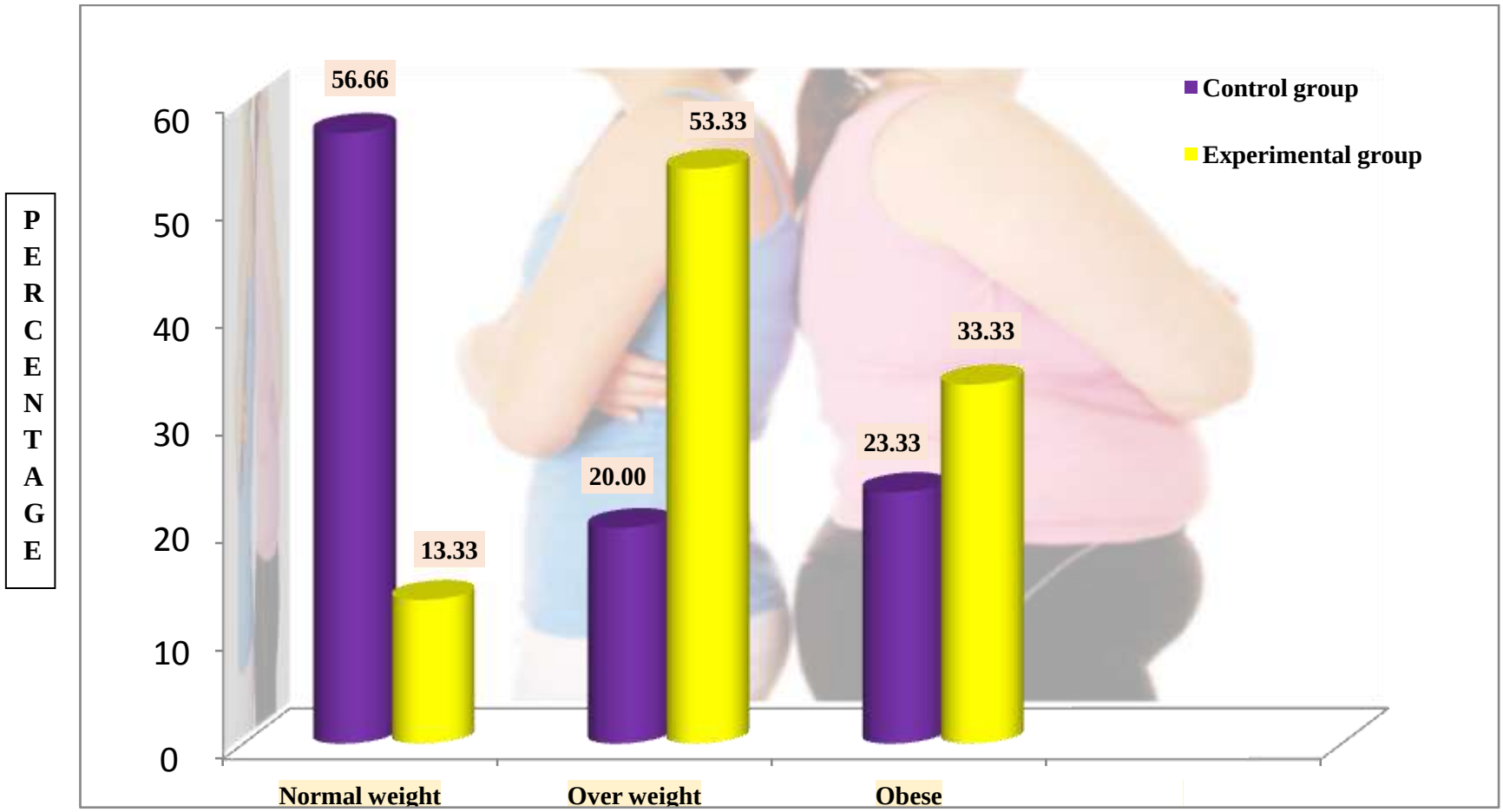

Fig. 5 Percentage Distribution of Body mass index of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention

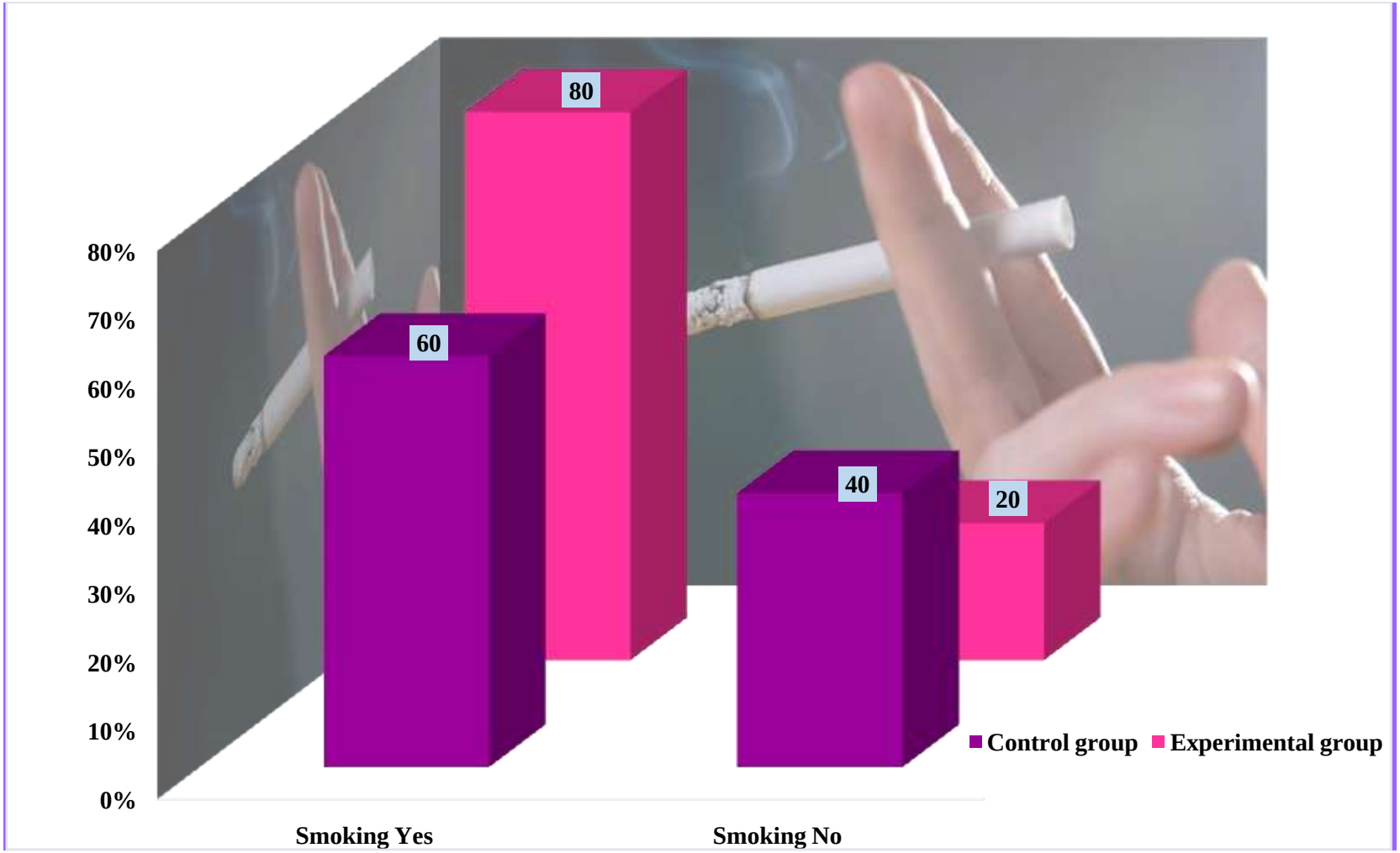

Fig. 6 Percentage Distribution of Smoking of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention

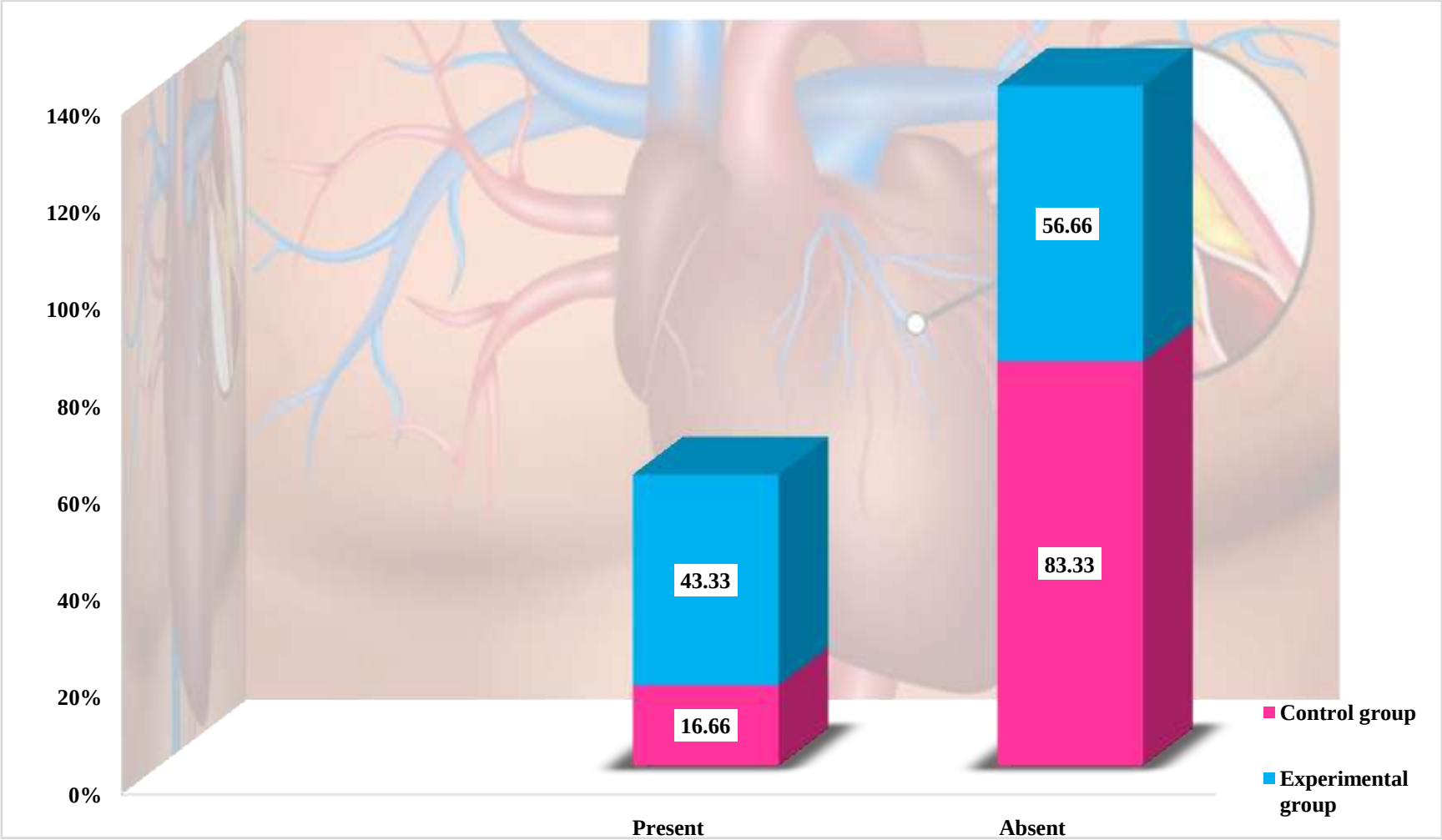

Fig.7 Percentage Distribution of Previous History of CAD of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Table 3

Frequency and Percentage Distribution of levels of Clinical Outcome (Non-invasive hemodynamic parameters like Blood Pressure, Heart Rate and Pain) of the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Parameters	Control group (n=30)				Experimental group (n=30)			
	Pre-test		post test		Pre-test		post test	
	n	%	n	%	n	%	n	%
Blood Pressure								
Hypotensive 0	6	20	3	10	4	13.3	9	30
Normal blood pressure 1	9	30	2	6.66	6	20	13	43.33
Mild Hypertensive 2	2	6.66	4	13.3	9	30	2	6.66
Moderate Hypertensive 3	5	16.6	15	50	3	10	3	3.3
Severe Hypertensive 4	8	26.66	2	0	8	26.6	3	3.3
Heart Rate scores								
Bradycardia 0	9	30	7	23.3	7	23.35	1	6.6
Normal heart rate 1	11	36.6	8	26.6	10	33.3	17	56.6
Tachycardia 3	10	33.3	15	50	13	43.3	8	26.6
Pain score								
No pain 0	5	16.6	1	3.3	6	20	15	50
Mild 1-2	20	66.6	20	66.6	24	80	15	50
Moderate 3-6	5	16.69	3	0	0	0	0	0
Severe 7-10	0	0	0	0	0	0	0	0

The data from the table 3 reveals the control group having normal blood pressure and moderate hypertension (26.6%, 50 %) in pre-test and post-tests. On the other hand, one third of the patients undergoing percutaneous coronary intervention (30%, 43.33%) in the experimental group had mild hypertension before therapy and normal blood pressure after therapy.

Around half of the patients (36.6%, 50%) in the control group had normal heart rate and tachycardia in pre-test and post-tests whereas, around half of the patients (43.3%, 56.6%) in experimental group had tachycardia and normal heart rate after the therapy.

A majority of the patients (66.6%, 66.6%) in the control group had mild pain in pre-test and post-test whereas, around half of the patients (80%, 50%) in the experimental group had mild pain after the therapy.

Table 4

Frequency and Percentage Distribution of levels of Clinical Outcome (Anxiety, Depression) of the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Anxiety score	Control group (n=30)				Experimental group (n=30)			
	Pre-test		post test		Pre-test		post test	
	n	%	n	%	n	%	n	%
Anxiety score								
Normal	51	6.66	8	26.66	10	33.33	6	20
Borderline	8	26.66	7	23.33	6	20	18	60
Anxiety	17	56.66	15	50	14	46.66	6	20
Depression score								
Normal	8	26.66	6	20	10	33.33	9	30
Borderline	4	13.33	4	13.33	5	16.66	11	36.66
Depression	18	60	20	66.66	15	50	10	33.33

The data from the table 4 reveals half of the patient in the control group having anxiety (56.6%, 50 %) in pre-test and post-test. On the other hand, in the experimental group, around half of the patients undergoing percutaneous coronary intervention (46.6%, 60%) had anxiety before therapy and borderline anxiety after the therapy respectively.

More than half of the patients (60%, 66.6%) in the control group had depression in pre-test and post-test whereas around half of the patients (50%, 36.66%) in the experimental group had depression and borderline depression after the therapy.

Table 5

Comparison of Mean and Standard Deviation of Clinical Outcome (non-invasive hemodynamic parameters like Blood Pressure, Heart Rate, Pain) of the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention before and after noetic therapies .

Observation	Control group (n =30) Mean	SD	Paired t test	Experimental group (n =30) Mean	SD	Paired t test
Blood pressure						
Systolic						
Pre test	137.56	16.20		136.36	18.40	7.20***
Post test	136.6	14.09	0.34	120.3	6.08	
Diastolic						
Pre test	82.66	8.24	0.42	87.9	10.32	9.68***
Post test	82.03	7.87		72.7	6.90	
Heart rate						
Pre test						
Post test	92.9	14.43	0.10	98.2	13.20	11.25***
	93.1	14.9		75.7	8.74	
Pain						
Pre test	2.06	1.14	0.38	3.06	1.36	11.21***
Post test	2.13	0.86		0.93	0.73	

*****p<0.001**

Table 5 shows the pre-test score of systolic blood pressure (M=137.56, S.D=16.20) in the control group and (M=136.36, SD=18.40) in the experimental group with the 't' value 0.34 which was not statistically significant at $p<0.05$ whereas, after noetic therapies there was a difference in the systolic blood pressure (M= 136.6, SD=14.09) in the control group and (M= 120.3, SD= 6.08) in the experimental group with 't' value of 7.20 which was statistically significant at $p<0.001$.

Table 5 depicts that the pre-test score of diastolic blood pressure (M=82.66, S.D=8.24) in the control group and (M=87.9, SD=10.32) in the experimental group with the 't' value 0.42 which was not statistically significant at $p<0.05$ whereas, after noetic therapies there was a difference in the diastolic blood pressure (M= 82.03, SD=7.87) in the control group and (M= 72.7, SD= 6.90) in the experimental group with 't' value of 9.68 which was statistically significant at $p<0.001$.

Table 5 shows that the pre-test score of heart rate (M=92.9, S.D=14.43) in the control group and (M=98.2, SD=13.20) in the experimental group with the 't' value 0.10 which was not statistically significant at $p<0.05$ whereas, after noetic therapies there was a difference in the heart rate (M= 93.1, SD=14.9) in the control group and (M= 75.7, SD= 8.74) in the experimental group with 't' value of 11.25 which was statistically significant at $p<0.001$.

Data presented in the table 5 shows the comparison of pre-test score of pain (M=2.06, S.D=1.14) in the control group and (M=3.06, SD=1.36) in the experimental group with the t value 0.38 which was not statistically significant at $p<0.05$ whereas after noetic

therapies there was a difference in the pain was (M= 2.13, SD=0.86) in the control group and (M= 0.93, SD= 0.73) in the experimental group with 't' value of 11.21 which was statistically significant at $p<0.001$. Hence null hypothesis **H01** that "There will be no significant difference in clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies" was rejected.

Table 6

Comparison of Mean and Standard Deviation of Clinical Outcome (Blood Pressure, Heart Rate, Pain) of the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Observation	Control group (n =30) Mean	SD	Experimental group (n =30) Mean	SD	Independent t test
Blood pressure					
Systolic					
Pre test	137.56	16.20	136.36	18.40	0.26
Post test	136.6	14.09	120.3	6.08	5.81**
Diastolic					
Pre test	82.66	8.24	87.9	10.32	1.76
Post test	82.03	7.87	72.7	6.90	4.88**
Heart rate					
Pre test	92.9	14.43	98.2	13.20	1.48
Post test	93.1	14.9	75.7	8.74	5.51**
Pain					
Pre test	2.06	1.14	3.06	1.36	1.80
Post test	2.13	0.86	0.93	0.73	5.79**

Table 6 shows the pre-test score of systolic blood pressure (M=136.56, S.D=16.20) in the control group and (M=136.36, SD=18.40) in the experimental group with the 't' value 0.26 which was not statistically significant at $p<0.05$ whereas, after noetic therapies there was a difference in the systolic blood pressure (M= 136.6, SD=14.09) in the control group and (M= 120.3, SD= 6.08) in the experimental group with 't' value of 5.81 which was statistically significant at $p<0.01$.

Table 6 shows the pre-test score of diastolic blood pressure (M=82.66, S.D=8.24) in the control group and (M=87.9, SD=10.32) in the experimental group with the 't' value 1.76 which was not statistically significant at $p<0.05$ whereas, after noetic therapies there was a difference in diastolic blood pressure and heart rate (M= 82.03, SD=7.87) in the control group and (M= 72.7, SD= 6.90) in the experimental group with 't' value of 4.88 which was statistically significant at $p<0.01$.

Table 6 shows the pre-test score of heart rate (M=92.9, S.D=14.43) in the control group and (M=98.2, SD=13.20) in the experimental group with the 't' value 1.48 which was not statistically significant at $p<0.05$ whereas, after noetic therapies there was a difference in the heart rate (M=93.1, SD=14.9) in the control group and (M=75.7, SD= 8.74) in the experimental group with 't' value of 5.51 which was statistically significant at $p<0.01$.

Data presented in the table 6 depicts that the pre-test score of pain as (M=2.06, S.D=1.14) in the control group and (M=3.06, SD=1.36) in the experimental group with the t value 1.80 which was not statistically significant at $p<0.05$ whereas, after noetic therapies,

there was a difference in the pain (M=2.13, SD=0.86) in the control group and (M= 0.93, SD= 0.73) in the experimental group with 't' value of 5.79 which was statistically significant at $p<0.01$. Hence null hypothesis **H01** "There will be no significant difference in clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies" was rejected.

Table 7

Comparison of Mean and Standard Deviation of Clinical Outcome (Anxiety, depression) of the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention before and after noetic therapies.

Observation	Obtainable score	Control group (n =30) Mean	SD	Paired t test	Experimental group (n =30) Mean	SD	Paired t test
Anxiety							
Before noetic therapies	0 - 21	11.76	4.01	1.01	12.5	3.8	11.52*
After noetic therapies		11.0	4.29		7.2	1.3	
Depression							
Before noetic therapies	0 - 21	11.9	4.77	0.12	12.46	3.21	10.51*
After noetic therapies		11.8	3.94		7.73	1.47	

***p<0.05**

Table 7 shows the pre-test score of anxiety (M=11.76, S.D=4.01) in the control group and (M=12.5, SD=3.8) in the experimental group with the 't' value 1.01 which was not statistically significant at p<0.05 whereas after noetic therapies there was a difference in

the anxiety(M= 11.0, SD=4.29) in the control group and (M= 7.2, SD= 1.30) in the experimental group with 't' value of 11.52 which was statistically significant at $p<0.05$.

Pre-test score of depression (M=11.9, S.D=4.77) in the control group and (M=12.46, SD=3.21) in the experimental group with the t value 0.12 which was not statistically significant at $p<0.05$.Whereas, after noetic therapies, there was a difference in the depression (M= 11.8, SD=3.94) in the control group and (M= 7.73, SD= 1.47) in the experimental group with't' value of 10.51 which was statistically significant at $p<0.05$. Hence null hypothesis **H01** that "There will be no significant difference in clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies" was rejected.

Table 8

Comparison of Mean and Standard Deviation of Clinical Outcome (Anxiety, depression) of the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Observation	Obtainable score	Control group (n =30)		Experimental group (n =30)		Independent t test
		Mean	SD	Mean	SD	
Anxiety						
Before noetic therapies	0 – 21	11.76	4.01	12.5	3.8	0.73
After noetic therapies		11.0	4.29	7.2	1.3	4.69** P<0.01
Depression						
Before noetic therapies	0 – 21	11.9	4.77	12.4	6.21	0.53
After noetic therapies		11.8	3.94	7.73	1.74	5.17** P<0.01

****p<0.01**

Table 8 depicts that the pre-test score of anxiety (M=11.76, S.D=4.01) in the control group and (M=12.5, SD=3.8) in the experimental group with the 't' value 0.73 which was not statistically significant at $p<0.05$ whereas after noetic therapies there was a difference in the anxiety(M= 11.0, SD=4.29) in the control group and (M= 7.2, SD= 1.3) in the experimental group with 't' value of 4.69 which was statistically significant at $p<0.01$.

Pre-test score of depression (M=11.9, S.D=4.77) in the control group and (M=12.46, SD=3.21) in the experimental group with the t value 0.53 which was not statistically significant at $p<0.05$ whereas after noetic therapies there was a difference in the depression (M= 11.8, SD=3.94) in the control group and (M= 7.73, SD= 1.74) in the experimental group with't' value of 5.17 which was statistically significant at $p<0.01$. Hence null hypothesis **H01** "There will be no significant difference in clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies" was rejected.

Table 9

Frequency and Percentage distribution of level of satisfaction of the Experimental group of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Domain the experimental group (n-30)	Highly satisfied		Satisfied		Dissatisfied		Highly dissatisfied	
	n	p	n	p	n	p	n	p
Researcher's approach	28	93.33	2	6.66	0	0	0	0
Method of application of noetic therapies	29	96.66	1	3.33	0	0	0	0
Effectiveness of noetic therapies	28	93.33	2	6.66	0	0	0	0

Table 9 shows most of the patients undergoing percutaneous coronary intervention in the experimental group were highly satisfied with the researcher's approach, (93.3%) method of application of noetic therapies (96.6%) and effectiveness of noetic therapies (93.3%).

Table.10

Association between Demographic Variables and Clinical Outcome (non-invasive hemodynamic monitoring like Blood Pressure) among the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Demographic Variables	Control group (n=30)			Experimental group (n=30)		
	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2
Age						
Upto 50	7	2	1.26	9	6	3.47
Above 50	10	11	df=1	3	12	df=1
Gender						
Male	15	12	0.13	10	15	0.00
Female	2	1	df=1	2	3	df=1
Type of food						
Non-veg	13	6	1.75	11	16	0.00
Veg	4	7	df=1	1	2	df=1

Table 10 shows the absence of any significant association between clinical outcome (non-invasive hemodynamic parameters like blood pressure) demographic variables like gender, type of food and age. In this regard, the null hypothesis **Ho_2** "There will be no association between the selected demographic variables and clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention" was retained.

Table.11

Association between Demographic Variables and Clinical Outcome (non-invasive hemodynamic monitoring like Heart Rate) and Pain among the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Demographic Variables	Control group (n=30)						Experimental group (n=30)					
	Heart Rate			Pain			Heart Rate			Pain		
	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2
Age in yrs												
Upto 50	7	2	1.26	5	4	0.48	9	6	3.47	8	7	0.13
Above 50	10	11	df=1	16	5	df=1	3	12	df=1	7	8	df=1
Gender												
Male	15	12	0.13	19	8	0.01	10	15	0.00	12	13	0.24
Female	2	1	df=1	2	1	df=1	2	3	df=1	3	2	df=1
Type of food												
Non-veg	13	6	1.75	15	4	0.98	11	16	0.00	13	14	0.37
Veg	4	7	df=1	6	5	df=1	1	2	df=1	2	1	df=1

Table 11shows the absence of any significant association between clinical outcome (non-invasive hemodynamic parameters like heart rate), pain and demographic variables like gender, type of food and age. In this regard, the null hypothesis **Ho_2**"There will be no association between the selected demographic variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention" was retained.

Table.12

Association between Clinical Variables and Clinical Outcome (non-invasive hemodynamic monitoring like Blood Pressure) Among the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Clinical variables	The control group (n=30)			The experimental group (n=30)		
	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2
BMI						
Upto25	5	13	2.90	2	2	1.19
Above 25	8	4	df=1	16	10	df=1
H/o Smoking						
Yes	6	5	3.30	15	9	0.00
No	3	16	df=1	3	3	df=1
H/o of CAD						
Present	11	14	0.02	5	8	2.99
Absent	2	3	df=1	13	4	df=1
Ejection fraction						
1 to 50%	2	9	0.43	15	7	1.20
Above 50%	7	12	df=1	3	5	df=1
Extent of CAD						
up to 1 vessel	7	4	1.75	1	3	0.97
More than 1 vessel	6	13	df=1	17	9	df=1
% of stenosis						
Upto 50	7	4	1.75	3	7	1.97
Above 50	6	13	df=1	15	5	df=1

Table 12 shows the absence of any significant association between the clinical variables and clinical outcomes (non-invasive hemodynamic parameters like blood pressure). Hence the null hypothesis **Ho_3** "There will be no association between the selected clinical variables and clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention" was retained.

Table.13

Association between clinical Variables and Clinical Outcome (non-invasive hemodynamic parameters like heart rate) and Pain among the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Clinical Variables	Control group (n=30)						Experimental group (n=30)					
	Heart Rate			Pain			Heart Rate			Pain		
	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2
BMI												
Upto25	3	14	8.26**	6	5	3.30	2	2	1.19	3	1	0.29
Above 25	10	3	df=1	3	16	df=1	16	10	df=1	12	14	df=1
H/o Smoking												
Yes	5	13	2.99	5	13	0.10	15	9	0.00	13	11	0.21
No	8	4	df=1	4	8	df=1	3	3	df=1	2	4	df=1
H/o of CAD												
Present	2	3	0.02	2	3	0.28	5	8	2.99	3	10	4.88*
Absent	11	14	df=1	7	18	df=1	13	4	df=1	12	5	df=1

Ejection fraction												
Upto 50%	2	15	13.09***	4	13	0.23	15	7	1.20	10	12	0.21
Above 50%	11	2	df=1	5	8	df=1	3	5	df=1	4	3	df=1
Extent of CAD												
Upto 1 vessel	7	14	1.65	3	18	1.92	3	7	1.90	6	4	0.15
More than 1 vessel	6	3	df=1	6	3	df=1	15	5	df=1	9	11	df=1
% of stenosis												
1 to 50	7	4	1.75	2	9	0.43	1	3	0.97	1	3	0.28
Above 50	6	13	df=1	7	12	df=1	17	9	df=1	14	12	df=1

(P<0.001)*, (p<0.01) **, (p<0.05)***

Table 13 shows there is significant association between the BMI, ejection fraction, history of coronary artery disease and clinical outcomes (non-invasive hemodynamic parameters like heart rate) and pain at $p<0.05$ level. However there is no significant association between other clinical variables like smoking, extent of coronary artery disease, percentage of stenosis and clinical outcome (blood pressure, heart rate, pain). Hence the null hypothesis **Ho_3** "There will be no association between the selected clinical variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention" was rejected with regard to BMI, ejection fraction, history of coronary artery disease.

Table.14

Association between Demographic Variables and Clinical Outcome (Anxiety, Depression) among the Control and the Experimental groups of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Demographic Variables	Control group (n=30)						Experimental group (n=30)					
	Anxiety			Depression			Anxiety			Depression		
	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2
Age in yrs												
Upto 50	7	2	4.07*	6	13	3.23	9	6	0.00	10	5	0.14
Above 50	6	15	df=1	8	3	df=1	9	6	df=1	9	6	df=1
Gender												
Male	11	16	0.06	13	14	0.23	15	10	0.00	16	9	0.02
Female	2	1	df=1	1	2	df=1	3	2	df=1	3	2	df=1
Type of food												
Non.Veg	11	16	0.06	9	10	0.14	17	10	0.13	15	12	0.01
Veg	1	2	df=1	6	5	df=1	1	2	df=1	1	2	df=1

Table 14 shows a significant association between the age and clinical outcomes (Anxiety and depression) at $p<0.05$ level. However there is no significant association between other demographic variables like gender and type of food and clinical outcome (anxiety and depression).

In this regard, the null hypothesis **Ho_2** "There will be no association between the selected demographic variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention" was rejected with regard to age.

Table 15

Association between Clinical Variables and Clinical Outcome (Anxiety, Depression) among the Control and the Experimental group of Patients with Unstable Angina Undergoing Percutaneous Coronary Intervention.

Clinical Variables	Control group (n=30)						Experimental group (n=30)					
	Anxiety			Depression			Anxiety			Depression		
	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2	Upto mean	Above mean	χ^2
BMI												
Upto 25	12	5	1.09	12	5	1.09	4	4	0.06	4	14	4.21*
Above 25	5	8	df=1	5	8	df=1	8	14	df=1	8	4	df=1
Smoking												
Yes	14	4	6.16**	11	7	0.36	10	14	0.13	9	15	0.00
No	3	9	df=1	6	6	df=1	2	4	df=1	3	3	df=1
H/O CAD												
Yes	3	2	0.02	3	2	2.04	7	6	1.83	7	6	1.83
No	14	11	df=1	14	11	df=1	5	12	df=1	5	12	df=1

% of stenosis												
1 to 50%	7	4	0.04	6	5	0.03	2	2	0.19	3	1	0.97
Above 50%	10	9	df=1	11	8	df=1	10	16	df=1	9	17	df=1
Extent of CAD												
Upto 1 vessel	13	8	0.23	14	7	1.65	5	5	0.62	4	6	0.00
Above 1 vessel	4	5	df=1	3	6	df=1	7	13	df=1	8	12	df=1
Ejection fraction												
Upto 50%	9	8	0.02	13	4	2.54	9	13	0.02	7	15	1.20
Above 50%	8	5	df=1	4	9	df=1	3	5	df=1	5	3	df=1

(p<0.01),** **(p<0.05)***

Table 15 shows a significant association between the BMI, smoking and clinical outcomes (Anxiety, Depression at $p<0.05$ level. However there is no significant association between other clinical variables like history of coronary artery disease, percentage of stenosis, ejection fraction, extent of CAD and clinical outcome (Anxiety, Depression).hence the null hypothesis **Ho_3** "There will be no association between the selected clinical variables and clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention" was rejected with regard to BMI, smoking, extent of coronary artery disease.

Summary

This chapter has dealt with the analysis and interpretation of the data obtained by researcher. The analysis of the results showed the clinical outcome as poor without noetic therapies of clinical outcome among unstable angina patients undergoing percutaneous coronary intervention. This can be credited to the effectiveness of noetic therapies of clinical outcome.

CHAPTER V

DISCUSSION

Statement of the problem

An Experimental Study to assess the Effectiveness of selected Noetic Therapies upon clinical outcome of Patients with Unstable Angina undergoing Percutaneous Coronary Intervention at Apollo Hospitals, Chennai.

Objectives of the study

1. To assess the clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing Percutaneous coronary Intervention before and after selected noetic therapies
2. To assess the effectiveness of selected noetic therapies by comparing the clinical outcome before and after noetic therapies among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention.
3. To assess the level of satisfaction of patients regarding selected noetic therapies in the experimental group of Patients with unstable angina undergoing percutaneous coronary Intervention.
4. To find out the association between the selected demographic variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing Percutaneous coronary Intervention

5. To find out the association between selected clinical variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention.

A quasi experimental research design was adopted for the study. The study was carried out on 60 unstable angina patients undergoing Percutaneous Coronary Intervention at Apollo Hospitals, Chennai. The effectiveness of Noetic therapies was assessed by using observational checklist and rating scale after establishing validity and reliability. The main data collection was done after determining feasibility and practicability a pilot study. The data was tabulated and analysed by using descriptive and inferential statistics.

- Frequency and percentage distribution of demographic variables of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Frequency and percentage distribution of clinical variables of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Frequency and percentage distribution of levels of clinical outcome (non-invasive hemodynamic parameters like blood pressure, heart rate and pain) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Frequency and percentage distribution of levels clinical outcome (Anxiety, Depression) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Comparison of mean and standard deviation of clinical outcome (non-invasive hemodynamic parameters like blood pressure, heart rate and pain) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention before and after noetic therapies.

- Comparison of mean and standard deviation of clinical outcome (non-invasive hemodynamic parameters like blood pressure, heart rate and pain) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Comparison of mean and standard deviation of clinical outcome (Anxiety and Depression) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention before and after noetic therapies.

- Comparison of mean and standard deviation of clinical outcome (Anxiety and Depression) of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Frequency and percentage distribution of level of satisfaction of the experimental group of patients with unstable angina undergoing percutaneous coronary intervention.
- Association between demographic variables and clinical outcome (non-invasive hemodynamic parameters like blood pressure) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

- Association between demographic variables and clinical outcome (non-invasive hemodynamic parameters like heart rate and pain) amongthe control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
- Association between clinical variables and clinical outcome (non-invasive hemodynamic parameters like blood pressure) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
- Association between clinical variables and clinical outcome (heart rate and pain)among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary interventionbefore and after noetic therapies.
- Association between demographic variables and clinical outcome (Anxiety, Depression) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.
- Association between clinical variables and clinical outcome (Anxiety, Depression) among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

Demographic variables of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

In this study, more than half of the patients were in the age group 51-60 years (70%, 50%), and were employed (66.6%, 70%), most of them were males (90%, 80%), around half of them are graduates (46.6 %, 43.3%), live in nuclear families (46.6%, 63.3%),all the

patients were married (100%, 100%), and majority of them were non-vegetarians (83.3%, 86.6%) in the control and the experimental group respectively.

This shows the frequency of Percutaneous Coronary Interventions is higher with age and in males. Most of patients in the present study were married and employed. So the stress of maintaining family life and in work place was found to be more. The emphasis must be more on relaxation to relieve stress and healthy life style with regular balanced diet, cessation of smoking, alcoholism and daily exercises.

The findings highlights that a majority of patients are graduates in education so the explanation should be up to their level of understanding.

Clinical variables of the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention.

In this study, around half of the patients were overweight (20%,53.3%), and had slight limitation of physical activity (20%, 43.3%), diagnosed to have two vessel disease (43.3%,30%) with ejection fraction below normal (53.3%, 50%), with more than fifty percentage of stenosis (43.3,76.6%), a majority of them had no history of coronary artery disease (83.3%,56.6%), history of smoking (60%,80%), had history of co-morbid illness (70%,53.3%) and no history of taking treatment for illness (83.3%,53.3%), with pre medication before procedure (70%,86.6%) and pain medication after procedure (100%,100%) in the control and the experimental groups respectively.

The study highlights body mass index having a great influence in developing cardiac diseases. In this study most patients were overweight. The body mass ratio had a significant association with the development of complications after the procedure.

The impact of the previous history of co-morbid illness among patients in both groups may be a contributing factor for developing complications. Overweight is a significant risk factor for predicting cardiovascular disease and is associated with co-morbid illness.

Nurses are the direct care givers, they need to emphasize on the restricted food intake and encourage patients to join a group of other obese persons who are receiving professional counselling to modify their life styles. The nurses can educate the clients regarding factors contributing to the development of cardiovascular disease.

First objective of the study was, to assess the clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies.

Corresponding null hypothesis $H0_1$ was "There will be no significant difference in clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention before and after noetic therapies".

Study findings shows that among unstable angina patients undergoing percutaneous coronary intervention in the control group had moderate hypertension (16.6%, 50 %) in pre-test and post-test. On the other hand, one third of the patients undergoing percutaneous coronary intervention (30%, 43.33%) in the experimental group had mild hypertension before therapy and normal blood pressure after therapy respectively.

Around half of the patients (36.6%, 50%) in the control group had normal heart rate and tachycardia in pre-test and post-test whereas, around half of the patients (43.3%, 56.6%) in the experimental group had tachycardia and normal heart rate after the therapy.

Half of the patients in the control group had anxiety (56.6%, 50 %) in pre-test and post-test. On the other hand, in the experimental group around half of the patients undergoing percutaneous coronary intervention (46.6%, 60%) had anxiety before therapy and borderline anxiety after the therapy respectively.

Similar findings have been reported in the study conducted by Riordan (2009)to investigate on blood pressure, heart rate and anxiety among acute coronary syndrome patients underwent revascularisation. The results showed that music therapy reduced blood pressure, heart rate, and patient anxiety and had a significant effect on future events, including re-infarction and sudden death, in acute coronary syndrome patients who underwent revascularization.

A majority of the patients (66.6%, 66.6%) in the control group had mild pain in pre-test and post-test whereas, around half of the patients (80%, 50%) in the experimental group had mild pain after the therapy.

A similar study was conducted by Fai (2007)to investigate on pain, heart rate, respiratory rate and oxygen saturation among PCI patients. The results showed is a statistical significant reductions in pain, heart rate, respiratory rate and oxygen saturation with help of music therapy.

More than half of the patients (60%, 66.6%) in the control group had depression in pre-test and post-test whereas, around half of the patients (50%, 36.66%) in the experimental group had depression and borderline depression after the therapy.

Findings of the study attributed to similar study conducted by Erkkila, Gold, et al (2008) suggest that the results provide new insights into assessing a depressive client's

improvement in the therapy. The size and the comprehensiveness of the study are sufficient for generalizing its findings to clinical practice as well as to further music therapy research.

Depression is the most common psychological factor and the incidence of depression is about 73 % with a serious impact on the quality of life of patients undergone by PCI. This emphasis that depression is one of the common psychological factor found in unstable angina patients undergoing PCI.

Hence the corresponding null hypothesis $H0_1$ "There will be no significant difference in clinical outcome among the control and the experimental group of patients with unstable angina undergoing percutaneous coronary intervention before and after noetic therapies" was rejected.

Second objective of the study was to, assess the effectiveness of selected noetic therapies by comparing the clinical outcome before and after noetic therapies among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention.

Corresponding null hypothesis $H0_1$ was "There will be no significant difference in clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention before and after noetic therapies".

Pre-test score of systolic blood pressure (M=136.56, S.D=16.20) in the control group and (M=136.36, SD=18.40) in the experimental group with the 't' value 0.26 which was not statistically significant at $p<0.05$ whereas after noetic therapies there was a difference in the systolic blood pressure(M= 136.6, SD=14.09) in the control group and (M= 120.3, SD= 6.08) in the experimental group with 't' value of 5.81 which was statistically significant at

p<0.01. Comparison of pre-test post-test systolic blood pressure score of patients in the experimental group shows ‘t’ value 7.20*** at p<0.001 and shows the effectiveness of noetic therapies.

Pre-test score of diastolic blood pressure (M=82.66, S.D=8.24) in the control group and (M=87.9, SD=10.32) in the experimental group with the ‘t’ value 1.76 which was not statistically significant at p<0.05 whereas after noetic therapies there was a difference in the diastolic blood pressure and heart rate (M= 82.03, SD=7.87) in the control group and (M= 72.7, SD= 6.90) in the experimental group with ‘t’ value of 4.88 which was statistically significant at p<0.01.Comparison of pre-test post-test diastolic blood pressure score of patients in the experimental groups shows ‘t’ value 9.68***at p<0.001 and shows the effectiveness of noetic therapies.

Pre-test score of heart rate (M=92.9, S.D=14.43) in the control group and (M=98.2, SD=13.20) in the experimental group with the ‘t’ value 1.48 which was not statistically significant at p<0.05 whereas after noetic therapies there was a difference in the heart rate (M=93.1, SD=14.9) in the control group and (M=75.7, SD= 8.74) in the experimental group with ‘t’ value of 5.51 which was statistically significant at p<0.01.Comparison of pre-test post-test heart rate score of patients in the experimental groups shows ‘t’ value 11.25*** at p<0.001 and shows the effectiveness of noetic therapies.

Pre-test score of pain (M=2.06, S.D=1.14) in the control group and (M=3.06, SD=1.36) in the experimental group with the t value 1.80 which was not statistically significant at p<0.05 whereas after noetic therapies there was a difference in the pain (M=2.13, SD=0.86) in the control group and (M= 0.93, SD= 0.73) in the experimental

groups with‘t’ value of 5.79 which was statistically significant at p<0.01. Comparison of pre-test post-test pain score of patients in the experimental group shows‘t’ value 11.21***at p<0.001 and shows the effectiveness of noetic therapies.

Findings of the study were attributed to similar study conducted by Chan, Wong, et al (2006) at Hong Kong for determining the effect of music on physiological parameters and level of pain in patients undergoing application of a C-clamp after percutaneous coronary intervention. In the music group, there were statistically significant reductions (P=0.001) in heart rate, respiratory rate, and oxygen saturation than the control participants at 45 minutes. In the music group, statistically significant reductions (P=0.001) in systolic blood pressure, heart rate, respiratory rate and oxygen saturation were found at the four time points, but not in the control group.

It is obvious that music is a simple, safe and effective method of reducing potentially harmful physiological and psychological responses arising from pain and other physiological parameters.

Pre-test score of anxiety (M=11.76, S.D=4.01) in the control group and (M=12.5, SD=3.8) in the experimental group with the ‘t’ value 0.73 which was not statistically significant at p<0.05 whereas, after noetic therapies, there was a difference in the anxiety(M= 11.0, SD=4.29) in the control group and (M= 7.2, SD= 1.3) in the experimental group with ‘t’ value of 4.69 which was statistically significant at p<0.01.Comparison of pre-test post-test anxiety score of patients in the experimental groups shows‘t’ value 11.52***at p<0.001 and shows the effectiveness of noetic therapies.

Pre-test score of depression (M=11.9, S.D=4.77) in the control group and (M=12.46, SD=3.21) in the experimental group with the t value 0.53 which was not statistically

significant at $p<0.05$ whereas after noetic therapies there was a difference in the depression (M= 11.8, SD=3.94) in the control group and (M= 7.73, SD= 1.74) in the experimental group with‘t’ value of 5.17 which was statistically significant at $p<0.01$.Comparison of pre-test post-test depression score of patients in the experimental groups shows‘t’ value 10.51*** at $p<0.001$ and shows the effectiveness of noetic therapies.

Hence null hypotheses $H0_1$“There will be no significant difference in clinical outcome among the control and the experimental group of Patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies” was rejected.

A similar study was conducted by Krucoff, Crater, et al (2006) among150 Patients undergoing percutaneous coronary intervention (PCI) for unstable coronary syndromes with substantial emotional and spiritual distress that could promote procedural complications. Noetic (non-pharmacologic) therapies-stress relaxation, imagery, touch therapy, and prayer-to patients in the setting of acute coronary interventions may reduce anxiety and depression. The results was around 25% to 30% absolute reduction in adverse peri-procedural outcomes in patients treated with any noetic therapies compared with standard therapy.

In this study, most of unstable angina patients undergoing PCI had anxiety, depression. Hence noetic therapies have shown positive benefits in improving the psychological wellbeing of the patients undergoing PCI.

Hence, in most of the unstable angina patients, undergoing PCI, noetic therapies were found to be effective in maintaining normal physiological and psychological parameters.

The third objective of the study was to assess the level of satisfaction of patients regarding selected noetic therapies in the experimental group of Patients with unstable angina undergoing percutaneous coronary Intervention.

A majority of the patients undergoing percutaneous coronary intervention in the experimental group was highly satisfied (93.3%) with the researcher's approach, (96.6%) method of application of noetic therapies (93.3%) and the effectiveness of noetic therapies (93.3%).

The fourth objective of the study was to find out the association between the selected demographic variables and the clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention.

Corresponding hypothesis $H0_2$ was "There will be no association between the selected demographic variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention".

There was no significant association between demographic variables like age, gender, type of food and clinical outcome (non-invasive hemodynamic parameters like blood pressure, heart rate and pain) and Anxiety, Depression. In this regard, the null hypothesis Ho_2 **s**tating that there will be no association between the selected demographic variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention was retained.

A similar cohort study conducted by Fang, Veronique, et al(2010) in United States on the prevalence of unstable angina which was greatest among persons aged greater than 65 years (19.8%), followed by those aged 45--64 years (7.1%) and those aged 18-44 years (1.2%). Unstable angina prevalence was greater among men (7.8%) than women (4.6%), and among those with less than a high school education (9.2%), compared with high students (6.7%). The prevalence of unstable angina in males was among American Indian/Alaska Natives (14.3%) and whites (7.7%), and the greatest prevalence in females was among American Indian/Alaska Natives (8.4%) and blacks (5.9%).

The finding indicates the total absence of any association between selected demographic variables like age, gender and food pattern and clinical outcome proves the effect of noetic therapies with regard of demographic variables.

This study attributed to similar cohort study conducted by Brodaty et al. (2001) found 52% depression with first onset at age 60. Rates of major depression among older adults are substantially higher in particular subsets of the older adult population, including medical outpatients (5-10%, though estimates vary widely), medical inpatients (10-12%), and residents of long term care facilities.

The finding proves once again the effectiveness of noetic therapies in reducing the anxiety, depression without any difference related to age, gender and pattern of food they take.

The present study reveals more than half of the patients being in the age group of 51 – 60 years. This shows depression rate as higher among older adults.

The fifth objective was to find out the association between selected clinical variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention.

The Corresponding hypothesis H03 was "There will be no association between the selected clinical variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention".

There was no significant association between the clinical variables and clinical outcomes (non-invasive hemodynamic parameters like blood pressure).

There was significant association between selected clinical variables namely BMI ($\chi 2=8.26, df=1$), ejection fraction ($\chi 2=13.09, df=1$), history of coronary artery disease($\chi 2=4.88, df=1$) and clinical outcomes (non-invasive hemodynamic parameters like heart rate and pain) at $p<0.01$ level. However, there was no significant association between other clinical variables like smoking, extent of coronary artery disease, percentage of stenosis and clinical outcome (heart rate, pain). Hence, the null hypothesis Ho_3 stating that there will be no association between the selected clinical variables and clinical outcome among control and the experimental group of Patients with unstable angina undergoing percutaneous coronary intervention was rejected with regard to BMI, ejection fraction and history of coronary artery disease.

There is significant association between the BMI ($\chi 2 =4.21, df=1$), smoking ($\chi 2=6.16, df=1$), extent of coronary artery disease ($\chi 2=3.90, df=1$)and selected clinical outcomes (Anxiety, Depression) at $p<0.05$ level. However, there is no significant association between other clinical variables like history of coronary artery disease, percentage of

stenosis, ejection fraction and clinical outcome (Anxiety, Depression). Hence, the null hypothesis Ho_3 stating that there will be no association between the selected clinical variables and clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention was rejected with regard to BMI, smoking and extent of coronary artery disease.

Hence hypothesis H03 was "There will be no association between the selected clinical variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary intervention" was retained.

Findings of the study are similar to those of a study conducted by Dooley, Marie, et al (2015) on Relationship between Body Mass Index and Prognosis of Patients Presenting with Potential Acute Coronary Syndromes. Results shows that BMI is associated with higher risk of cardiovascular outcomes at 30 days.

Summary

This chapter has dealt with the discussion of findings in the present study which includes demographic variables, clinical variables and clinical outcome of unstable angina patients undergoing percutaneous coronary intervention, effectiveness of noetic therapies on clinical outcome, association between the demographic variables and clinical variables on clinical outcome, level of satisfaction of patients about noetic therapies.

CHAPTER VI

SUMMARY, CONCLUSION, NURSING IMPLICATIONS AND RECOMMENDATIONS

The heart of the research project lies in reporting the findings. This is the most creative and demanding part of the study. This chapter gives a brief account of the present study, suggestions for the study and nursing implications.

Summary

The present study was intended to analyse the Effectiveness of selected Noetic therapies upon clinical outcome of Patients with Unstable Angina undergoing Percutaneous Coronary Intervention at Apollo Hospitals, Chennai.

Objectives of the study

1. To assess the clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing Percutaneous coronary Intervention before and after selected noetic therapies
2. To assess the effectiveness of selected noetic therapies by comparing the clinical outcome before and after noetic therapies among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention.
3. To assess the level of satisfaction of patients regarding selected noetic therapies in the experimental group of patients with unstable angina undergoing percutaneous coronary Intervention.

4. To find out the association between the selected demographic variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing Percutaneous coronary Intervention
5. To find out the association between selected clinical variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention.

Null Hypothesis

Ho_1 There will be no significant difference in clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies.

Ho_2 There will be no association between the selected demographic variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention.

Ho_3 There will be no association between the selected clinical variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention.

The conceptual framework was developed on the basis of Kings Goal attainment theory (Martha 2013) , which was modified for the present study. An intensive review of literature and expert guidance laid the foundation for the development of research tools.

Quasi experimental design was adopted in this study. Purposive sampling technique was used for selecting patients in the control and the experimental groups. The present study

was conducted at Apollo Main Hospital, Greams Road, Chennai among the unstable angina patients undergoing percutaneous coronary intervention. The sample size for the present study was 60, 30 of whom were patients were randomly assigned to the control group and 30 of them to the experimental group who satisfied the inclusion criteria.

The researcher used the demographic and clinical variable proforma of patients for obtaining the baseline data. Observation check list for blood pressure and heart rate, universal pain assessment tool, hospital anxiety and depression scale and rating scale for the level of satisfaction of patients were the tools used for collecting the data after establishing validity and reliability. The main data collection was done after determining the feasibility and the practicability through a pilot study.

Major findings of the study

Demographic variables of the control and the experimental group of patients with unstable angina undergoing percutaneous coronary intervention.

More than half of the patients were in the age group between 51-60 years (70%, 50%), and were employed (66.6%, 70%), most of them were males (90%, 80%), around half of them were graduates (46.6 %, 43.3%), living in nuclear families (46.6%, 63.3%),all the patients were married (100%, 100%), and a majority of them were non-vegetarians (83.3%, 86.6%) in the control and the experimental group respectively.

Clinical variables of the control and the experimental group of patients with unstable angina undergoing percutaneous coronary intervention.

Around half of the patients were overweight (20%,53.3%), and had a slight limitation of physical activity (20%, 43.3%), diagnosed to have had two vessel disease

(43.3%,30%) with ejection fraction below normal (53.3%, 50%), with more than fifty percentage of stenosis (43.3,76.6%), majority of them had no history of coronary artery disease (83.3%,56.6%), history of smoking (60%,80%), had history of co-morbid illness (70%,53.3%) and no history of taking treatment for illness (83.3%,53.3%), with pre medication before the procedure (70%,86.6%) and pain medication after procedure (100%,100%) in the control and the experimental group respectively.

Clinical outcome in control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies.

Unstable angina patients undergoing percutaneous coronary intervention in the control group had moderate hypertension (16.6%, 50 %) in pre-test and post-test. On the other hand, one third of the patients undergoing percutaneous coronary intervention (30%, 43.33%) in the experimental group had mild hypertension before therapy and normal blood pressure after therapy.

Around half of the patients (36.6%, 50%) in the control group had normal heart rate and tachycardia in pre-test and post-test whereas around half of the patients (43.3%, 56.6%) in the experimental group had mild tachycardia and normal heart rate after the therapy.

A majority of the patients (66.6%, 66.6%) in the control group had a mild pain in pre-test and post-test whereas around half of the patients (80%, 50%) in the experimental group had mild pain after the therapy.

Half of the patients in the control group had anxiety (56.6%, 50 %) in pre-test and post-test. On the other hand, in the experimental group, around half of the patients

undergoing percutaneous coronary intervention (46.6%, 60%) had anxiety before therapy and borderline anxiety after the therapy.

More than half of the patients (60%, 66.6%) in the control group had depression in pre-test and post-test whereas around half of the patients (50%, 36.66%) in the experimental group had depression and borderline depression after the therapy.

Comparison of mean and standard deviation of clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention.

Pre-test score of systolic blood pressure (M=136.56, S.D=16.20) in the control group and (M=136.36, SD=18.40) in the experimental group with the 't' value 0.26 which was not statistically significant at $p<0.05$ whereas after noetic therapies there was a difference in the systolic blood pressure(M= 136.6, SD=14.09) in the control group and (M= 120.3, SD= 6.08) in the experimental group with 't' value of 5.81 which was statistically significant at $p<0.01$. Comparison of pre-test post-test systolic blood pressure score of patients in the experimental group shows 't' value 7.20*** at $p<0.001$ and shows the effectiveness of noetic therapies.

Pre-test score of diastolic blood pressure (M=82.66, S.D=8.24) in the control group and (M=87.9, SD=10.32) in the experimental group with the 't' value 1.76 which was not statistically significant at $p<0.05$ whereas after noetic therapies there was a difference in the diastolic blood pressure and heart rate (M= 82.03, SD=7.87) in the control group and (M= 72.7, SD= 6.90) in the experimental group with 't' value of 4.88which was statistically significant at $p<0.01$.Comparison of pre-test post-test diastolic blood pressure score of

patients in the experimental group shows ‘t’ value 9.68*** at p<0.001 and shows the effectiveness of noetic therapies.

Pre-test score of heart rate (M=92.9, S.D=14.43) in the control group and (M=98.2, SD=13.20) in the experimental group with the ‘t’ value 1.48 which was not statistically significant at p<0.05 whereas after noetic therapies there was a difference in the heart rate (M=93.1, SD=14.9) in the control group and (M=75.7, SD= 8.74) in the experimental group with ‘t’ value of 5.51 which was statistically significant at p<0.01.Comparison of pre-test post-test heart rate score of patients in the experimental group shows ‘t’ value 11.25*** at p<0.001 and shows the effectiveness of noetic therapies.

Pre-test score of pain (M=2.06, S.D=1.14) in the control group and (M=3.06, SD=1.36) in the experimental group with the t value 1.80 which was not statistically significant at p<0.05 whereas after noetic therapies there was a difference in the pain (M=2.13, SD=0.86) in the control group and (M= 0.93, SD= 0.73) in the experimental group with‘t’ value of 5.79 which was statistically significant at p<0.01. Comparison of pre-test post-test pain score of patients in the experimental group shows‘t’ value 11.21*** at p<0.001 and shows the effectiveness of noetic therapies.

Pre-test score of anxiety (M=11.76, S.D=4.01) in the control group and (M=12.5, SD=3.8) in the experimental group with the ‘t’ value 0.73 which was not statistically significant at p<0.05 whereas after noetic therapies there was a difference in the anxiety (M= 11.0, SD=4.29) in the control group and (M= 7.2, SD= 1.3) in the experimental group with ‘t’ value of 4.69 which was statistically significant at p<0.01.Comparison of pre-test

post-test anxiety score of patients in the experimental group shows‘t’ value 11.52*** at p<0.001 and shows the effectiveness of noetic therapies.

Pre-test score of depression (M=11.9, S.D=4.77) in the control group and (M=12.46, SD=3.21) in the experimental group with the t value 0.53 which was not statistically significant at p<0.05 whereas after noetic therapies there was a difference in the depression (M= 11.8, SD=3.94) in the control group and (M= 7.73, SD= 1.74) in the experimental group with ‘t’ value of 5.17 which was statistically significant at p<0.01.Comparison of pre-test post-test depression score of patients in the experimental group shows‘t’ value 10.51*** at p<0.001 and shows the effectiveness of noetic therapies.

Hence null hypotheses H_{01} “There will be no significant difference in clinical outcome among control and the experimental group of Patients with unstable angina undergoing percutaneous coronary Intervention before and after selected noetic therapies” was rejected.

The investigator’s findings were consistent with the study conducted by Williams et al (2012) who investigated the effect of music therapy on physiological and psychological wellbeing for undergoing PCI. The study results showed music therapy as beneficial to the patient undergoing PCI.

This shows noetic therapies as effective in maintaining normal physiological and psychological parameters. By incorporating noetic therapies in unstable angina patients undergoing PCI can help nurses to achieve client satisfaction and comfort without any adverse effects.

Level of satisfaction of patients regarding selected noetic therapies in the experimental group of Patients with unstable angina undergoing percutaneous coronary Intervention.

A majority of the patients undergoing percutaneous coronary intervention in the experimental group were highly satisfied with the researcher's approach, (93.3%) method of application of noetic therapies (96.6%) and effectiveness of noetic therapies (93.3%).

The health care system is basically a service based activity and job satisfaction is very much important for obtaining a positive outcome. Nursing care is a key determinant for obtaining a healthier positive outcome and also for acquiring overall client satisfaction. Nursing power depends on gaining and applying professional knowledge and skills. If hospital nursing services have to provide the highest possible quality nursing care in terms of total client needs, the basic nursing care has to be strengthened.

Thus like basic nursing skills, use of noetic therapies also brings beneficial effect, cost effectiveness and increases client satisfaction. It enhances nurse client relationship and thus provides a better job satisfaction to the nurses. The implementation of the best available nursing skills can minimize pain without adverse effects.

Association between the selected demographic variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention.

There was no significant association between demographic variables like age, gender, type of food and clinical outcome (blood pressure, heart rate and pain). In this

regard, the null hypothesis Ho_2 **s**tating that there will be no association between the selected demographic variables and clinical outcome among the control and the experimental groups of patients with unstable angina undergoing percutaneous coronary Intervention was retained.

There was no significant association between selected demographic variables like age, gender, type of food and clinical outcome (Anxiety, Depression).In this regard, the null hypothesis Ho_2stating that there will be no association between the selected demographic variables and clinical outcome among control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention was retained.

Association between selected clinical variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention.

There was a significant association between selected clinical variables and clinical outcomes (non-invasive hemodynamic parameters like blood pressure).

There was a significant association between selected clinical variables namely BMI ($\chi 2=8.26,df=1$), ejection fraction ($\chi 2=13.09,df=1$), history of coronary artery disease($\chi 2=4.88,df=1$) and clinical outcomes (heart rate and pain) at $p<0.01$ level. However, there was no significant association between other clinical variables like smoking, extent of coronary artery disease, percentage of stenosis and clinical outcome (heart rate, pain).hence the null hypothesis Ho_3 stating that there will be no association between the selected clinical variables and clinical outcome among the control and the experimental groups of Patients

with unstable angina undergoing percutaneous coronary intervention was rejected with regard to BMI, ejection fraction and history of coronary artery disease.

There is a significant association between the BMI ($\chi 2$ =4.21,df=1), smoking ($\chi 2$=6.16,df=1), extent of coronary artery disease ($\chi 2$=3.90,df=1) and selected clinical outcomes (Anxiety, Depression) at $p<0.05$ level. However, there is no significant association between other clinical variables like history of coronary artery disease, percentage of stenosis, ejection fraction and clinical outcome (Anxiety, Depression). Hence, the null hypothesis Ho_3 stating that there will be no association between the selected clinical variables and clinical outcome among the control and the experimental groups of Patients with unstable angina undergoing percutaneous coronary Intervention was rejected with regard to BMI, smoking and extent of coronary artery disease.

Conclusion

The present study concludes that noetic therapies are effective for maintaining normal blood pressure, heart rate, minimize pain, improving the wellbeing of anxiety and depression in unstable angina patients undergoing percutaneous intervention. A majority of the patients undergoing percutaneous coronary intervention in the experimental group were highly satisfied with the approach of the researcher, the method of application of noetic therapies and the effectiveness of the noetic therapies.

Implications

The conclusion derived from the study can be applied in the field of nursing practice, nursing education, nursing administration and nursing research.

Nursing practice

Noetic therapies were found ideal for maintaining blood pressure at normal level, heart rate, minimize pain, improving the wellbeing of anxiety, depression in unstable angina patients undergoing percutaneous intervention. Hence, it is the responsibility of the nurse to assess the clinical outcome of the patients, to enable encouraging them to go for noetic therapies. The nurse should have adequate knowledge of noetic the rapiesin to help the nursing staff to incorporate the derived conclusion in practice. Nurse as a team leader can plan, organize and co-ordinate activities for the patient contributing to his better health.

Nursing education

With the emerging healthcare demands and newer trends in the field of nursing education, focus should be on innovations for enhancing nursing care. The nurses should have knowledge of the factors which enhance and influence the clinical outcome of unstable angina patients undergoing percutaneous intervention. A majority of the patients undergoing percutaneous coronary intervention, Integration of theory and practice is a vital need and is important in nursing education. Nurse educators should take initiative to organize continuing education programmes for nurses about the noetic the rapies which could be instituted to the patients undergoing percutaneous coronary intervention. Demonstration of noetic the rapies in the clinical set up can help students to acquire an adequate knowledge and incorporate it in their practice. Nurse educators should take initiatives to publish articles in journals related to effectiveness of noetic therapies and curriculum has to be updated accordingly.

Nursing administration

With technological advances and ever growing challenges of health care, the nurse administrators have a responsibility to provide nurses with substantive continuing nursing education opportunities. This will enable the nurses to update their knowledge, acquire special skills and demonstrate high quality care in promoting good health for the unstable angina patients undergoing percutaneous intervention by instituting noetic for better clinical outcome

Nurse administrators should collaborate with governing bodies in formulating policies and protocols in providing patient education and plans for man power, money, materials, methods and time to conduct successful and useful patient education programmes. Nurse administrators should provide opportunities for the nurses to attend various training programmes. Audits on Quality Indicators should be conducted periodically.

Nursing research

Growing demand for nursing education has led to a heightened urgency to expand the evidence base to support for better clinical outcome of unstable angina patients undergoing percutaneous intervention. There is a need for extensive and intensive research in this area for generating more specific data base and identifying the benefits of noetic the rapies and for providing vital information for practice. It opens a big avenue for research on innovative methods for reducing pain and improving physiological and psychological well being. Dissemination of the findings of the research through conferences, seminars, and publications in national and international nursing journals, World Wide Web will benefit a wider community. More theories can be generated based on the research findings.

Recommendations

- The present study could be replicated in different settings.
- A similar study could be undertaken on a larger scale for more valid generalization.
- This method may be implemented in all the settings like cath lab, cath day-care, pre-op holding area, endoscopy and can be made as a standard intervention as routine procedure.
- A study on noetic therapies could be done for haemodialysis patients, percutaneous valvular correction patients, arthroscopy patients, endoscopy patients where patients remain awake.
- A similar study on various therapies like touch therapy, reflexology, diversional therapies like music, guided imagery can be separately done for patients undergoing PCI, CABG, C-clamp procedures.

Limitations

- This study is limited to patients with unstable angina undergoing PCI at Apollo Hospitals for a limited duration of 6 weeks of data collection.

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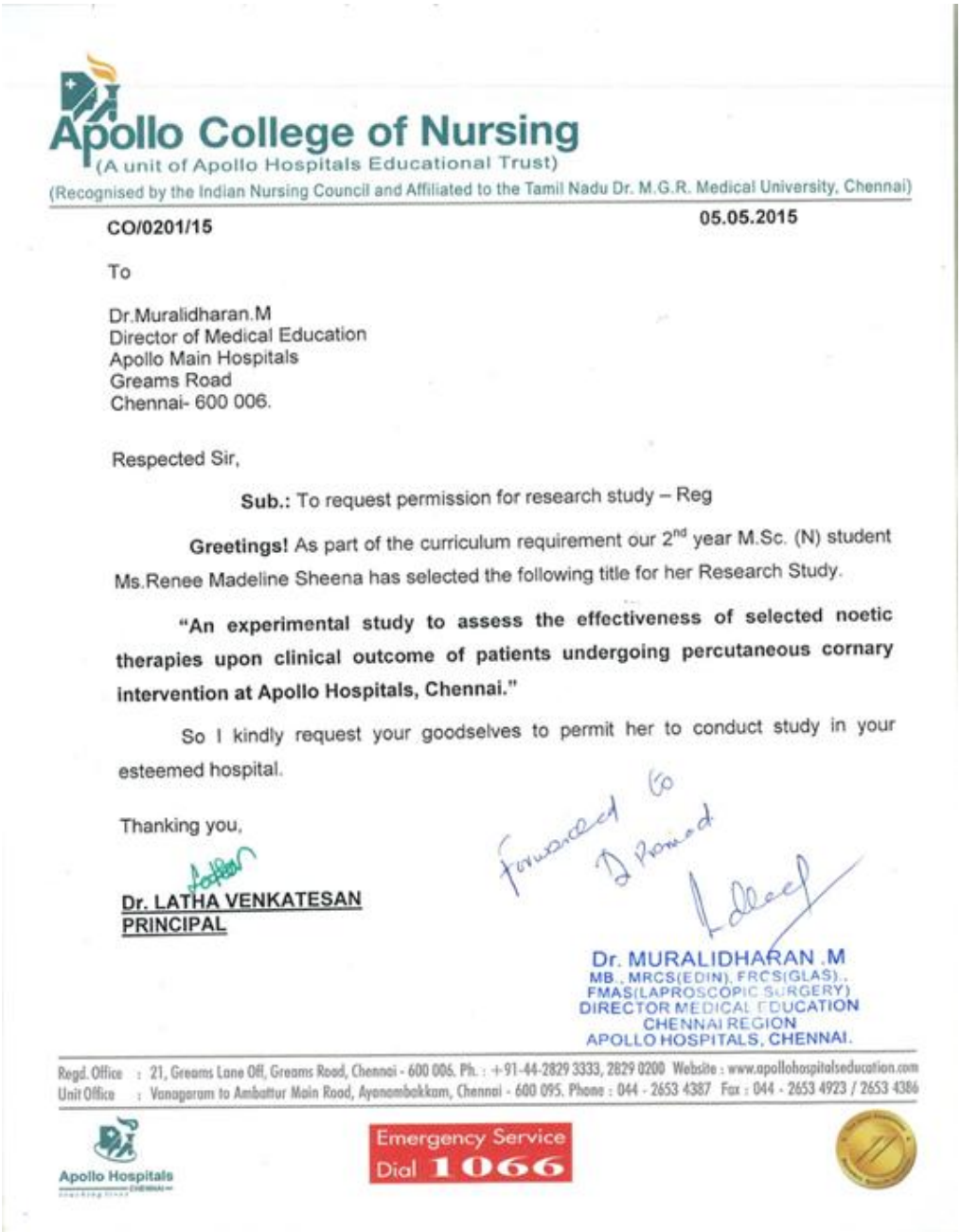
APPENDIX I

LETTER SEEKING PERMISSION TO CONDUCT STUDY



Apollo College of Nursing
(A unit of Apollo Hospitals Educational Trust)
(Recognised by the Indian Nursing Council and Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

CO/0201/15 05.05.2015

To

Dr.Muralidharan.M
Director of Medical Education
Apollo Main Hospitals
Greams Road
Chennai- 600 006.

Respected Sir,

Sub.: To request permission for research study – Reg

Greetings! As part of the curriculum requirement our 2nd year M.Sc. (N) student Ms.Renee Madeline Sheena has selected the following title for her Research Study.

"An experimental study to assess the effectiveness of selected noetic therapies upon clinical outcome of patients undergoing percutaneous cornary intervention at Apollo Hospitals, Chennai."

So I kindly request your goodselves to permit her to conduct study in your esteemed hospital.

Thanking you,

Dr. LATHA VENKATESAN
PRINCIPAL

forwarded to D Ramesh

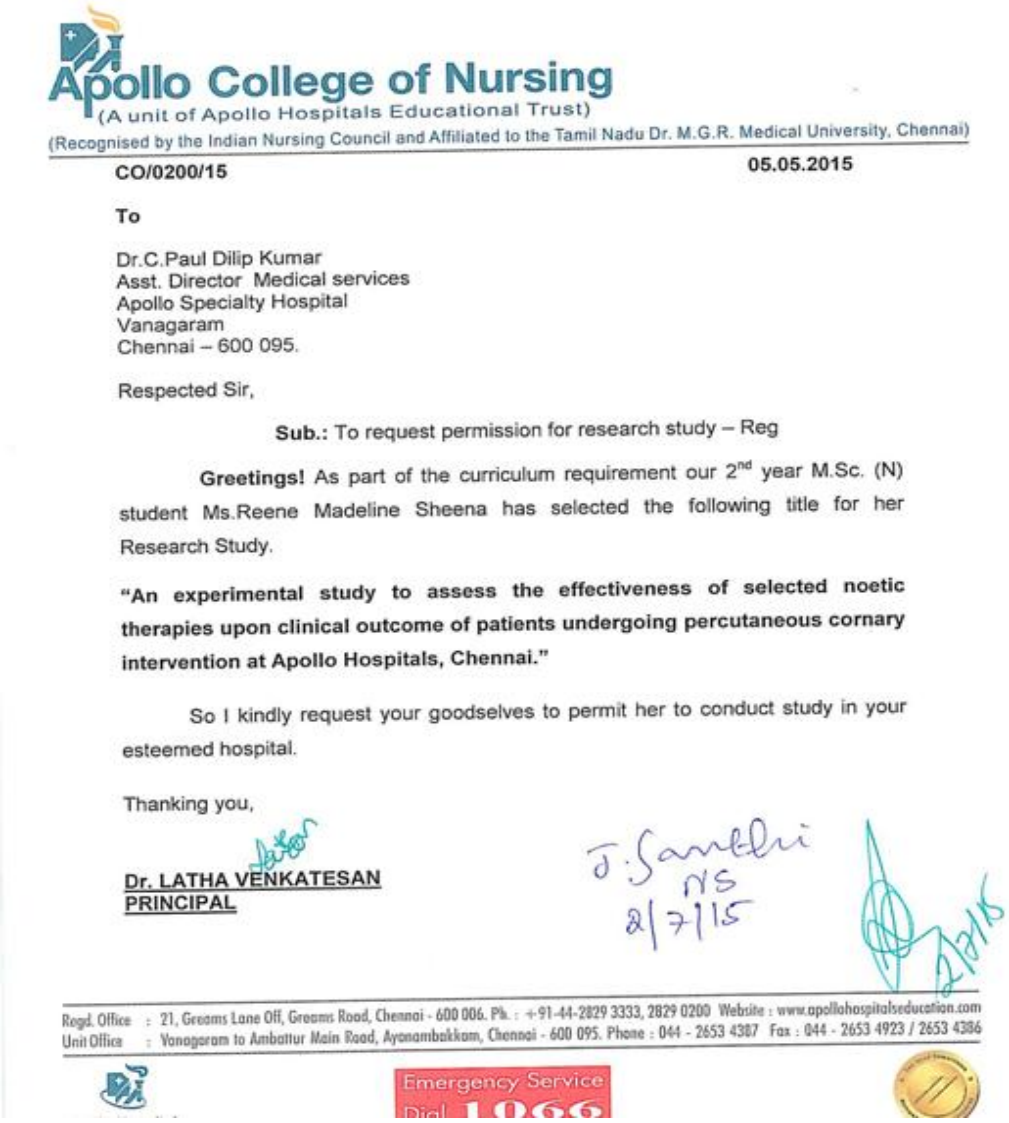
Dr. MURALIDHARAN .M
MB., MRCS(EDIN), FRCS(GLAS)., FMAS(LAPROSCOPIC SURGERY)
DIRECTOR MEDICAL EDUCATION
CHENNAI REGION
APOLLO HOSPITALS, CHENNAI.

Regd. Office : 21, Greams Lane Off, Greams Road, Chennai - 600 006. Ph. : +91-44-2829 3333, 2829 0200 Website : www.apollohospitalseducation.com
Unit Office : Vanagaram to Ambattur Main Road, Ayanambakkam, Chennai - 600 095. Phone : 044 - 2653 4387 Fax : 044 - 2653 4923 / 2653 4386

Apollo Hospitals

Emergency Service
Dial 1066

LETTER SEEKING PERMISSION TO CONDUCT STUDY



Apollo College of Nursing
(A unit of Apollo Hospitals Educational Trust)
(Recognised by the Indian Nursing Council and Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

CO/0200/15 05.05.2015

To

Dr.C.Paul Dilip Kumar
Asst. Director Medical services
Apollo Specialty Hospital
Vanagaram
Chennai – 600 095.

Respected Sir,

Sub.: To request permission for research study – Reg

Greetings! As part of the curriculum requirement our 2nd year M.Sc. (N) student Ms.Reene Madeline Sheena has selected the following title for her Research Study.

"An experimental study to assess the effectiveness of selected noetic therapies upon clinical outcome of patients undergoing percutaneous cornary intervention at Apollo Hospitals, Chennai."

So I kindly request your goodselves to permit her to conduct study in your esteemed hospital.

Thanking you,

Dr. LATHA VENKATESAN
PRINCIPAL

J. Santhi
RN
2/7/15

2/7/15

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APPENDIX II

LETTER PERMITTING TO CONDUCT STUDY

Apollo College of Nursing
(A unit of Apollo Hospitals Educational Trust)
(Recognised by the Indian Nursing Council and Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

CO/0199/15 **05.05.2015**

To

Ms.Sunitha.D
Senior Nursing Superintendent
Apollo Main Hospitals
Greams Road
Chennai- 600 006.

Dear Madam,

Sub.: To request permission for research study – Reg

Greetings! As part of the curriculum requirement our 2nd year M.Sc. (N) student Ms.Reene Madeline Sheena has selected the following title for her Research Study.

"An experimental study to assess the effectiveness of selected noetic therapies upon clinical outcome of patients undergoing percutaneous coronary intervention at Apollo Hospitals, Chennai."

So I kindly request your goodselves to permit her to conduct study in your esteemed hospital.

Thanking you,

Dr. LATHA VENKATESAN
PRINCIPAL

D. Sunitha
SAN

Regd. Office : 21, Greams Lane Off, Greams Road, Chennai - 600 006. Ph. : +91-44-2829 3333, 2829 0200 Website : www.apollohospitalseducation.com
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APPENDIX III

ETHICS COMMITTEE CERTIFICATE

Institutional Ethics Committee - Clinical Studies
Reg. No. : ECR/37/Inst/TN/2013

7 July 2015

To,
Ms. Renee Madeline Sheena S.,
First year, M.SC (Nursing),
Department of Medical Surgical Nursing,
Apollo College of Nursing, Chennai.

Ref: An experimental study to assess the effectiveness of selected noetic therapies upon clinical outcome of patients with unstable angina undergoing percutaneous coronary intervention at Apollo Hospitals, Chennai.

Sub: Approval of the above referenced project and its related documents.

Dear Ms. Renee,

The Institutional Ethics Committee-Clinical Studies has received the following document submitted by you related to the conduct of the above-referenced study -

- Project Proposal
- Informed Consent Form

The Institutional Ethics Committee-Clinical Studies reviewed (through expedited review) and discussed the project proposal documents submitted by you at a specially convened meeting held on 7 July 2015.

The following members were present at the meeting held on 7 July 2015 at 2:00pm at Apollo Hospitals Educational Research Foundation, Conference Hall, Room No: 19, 2nd Floor, Krishnadeep Chambers, Wallace Garden, Chennai:

Name	Gender	Designation	Affiliation	Position in the committee
Dr. Rema Menon	F	Blood Bank Officer	Apollo Hospitals, Chennai	Member Secretary (Clinician)
Dr. Pradeep Kumar	M	Clinical Pharmacologist	Apollo Hospitals, Chennai	Member (Pharmacologist)
Dr. Rama Narasimhan	F	Senior Consultant-Internal Medicine	Apollo Hospitals, Chennai	SRSC Member (Clinician)

Apollo Hospitals Enterprise Limited,
21, Greams Lane, Off Greams Road, Chennai - 600 006, India, T : +91 44 2829 5045 / 6641 Fax : 91-44-2829 4449
Email : ecapollochennai@gmail.com

Dr. Sivagnanasundaram	M	Senior Consultant - Endocrinology	Madras High Court, Chennai	SRSC - Member (Clinician)

The Institutional Ethics Committee-Clinical Studies reviewed the proposal, its methodology and design of the study. The proposed thesis work is approved in its present proposal without any modifications.

The Institutional Ethics Committee-Clinical Studies review and approval of the report is only to meet their academic requirement and will not amount to any approval of the conclusion / recommendations as conclusive, deserving adoption and implementations, in any form, in any health care institution.

The Institutional Ethics Committee-Clinical Studies is constituted and works as per ICH-GCP, ICMR and revised Schedule Y guidelines.

Regards,

Rema Menon

Dr. Rema Menon,
Member Secretary,
Institutional Ethics Committee-Clinical Studies,
Apollo Hospitals, Chennai.

Date: 7/7/2015

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE CLINICAL STUDIES
APOLLO HOSPITALS, AHEL
CHENNAI, TAMILNADU.

Apollo Hospitals Enterprise Limited,
21, Greams Lane, Off Greams Road, Chennai - 600 006, India, T : +91 44 2829 5045 / 6641 Fax : 91-44-2829 4449
Email : ecapollochennai@gmail.com

APPENDIX IV

LETTER SEEKING PERMISSION FOR CONTENT VALIDITY

From

Ms.S.Renee Madeline Sheena,

M.Sc. (Nursing) Second Year,

Apollo College of Nursing,

Chennai – 600 095.

To

Forwarded Through:

Dr. LathaVenkatesan,

Principal,

Apollo College of Nursing.

Sub: Requesting for opinions and suggestions of experts for establishing content validity for research tool.

Respected Madam,

I am a postgraduate student of the Apollo College of Nursing. I have selected the below mentioned topic for research project to be submitted to The Tamil Nadu Dr. M.G.R Medical University, Chennai as a partial fulfilment of Masters of Nursing Degree.

TITLE OF THE TOPIC: "An Experimental Study to assess the Effectiveness of selected Noetic Therapies upon clinical outcome of Patients with Unstable Angina undergoing Percutaneous Coronary Intervention at Apollo Hospitals, Chennai."

With regards may I kindly request you to validate my tool for its appropriateness and relevancy. I am enclosing the Background, Need for the study, Statement of the problem, Objectives of the study, Demographic Variable Proforma, Clinical Variable Proforma, Observation Checklist to assess the blood pressure and heart rate, universal pain assessment tool, hospital anxiety and depression scale and Rating Scale on Satisfaction of patients with unstable angina undergoing percutaneous coronary intervention. I would be highly obliged and remain thankful for your great help if you could validate and send it as soon as possible.

Thanking you,

Date: Yours sincerely,

Place: (Renee Madeline Sheena)

APPENDIX V

LIST OF EXPERTS FOR CONTENT VALITY

1. Dr. Latha Venkatesan, M.Sc (N).,M.Phil. (N).,Ph.D (N).,

Principal and Professor in Maternity Nursing,

Apollo College of Nursing,

Chennai- 600 095

2. Dr. Pramod Kumar, MBBS, MD, DNB (Cardiology),

Consultant, Cardiologist,

Apollo Main Hospital, Greams Road,

Chennai

3. Prof. Lizy Sonia. A, M.Sc (N).,[Ph.D(N).,]

Vice Principal and Professor in Medical Surgical Nursing,

Apollo College of Nursing,

Chennai-600 095

4. Dr. K. Vijayalakshmi, M.Sc (N)., M.A (Psy).,Ph.D (N).,MBA.,

HOD of Psychiatric Nursing,

Apollo College of Nursing,

Chennai- 600 095

5. Prof. Nesa Sathya Satchi, M.Sc.(N)., [Ph.D (N).,]

HOD of Pediatric Nursing,

Apollo College of Nursing,

Chennai- 600 095

6. Mrs. Jaslina Gnana Rani .J, M.Sc (N).,[Ph.D (N).,]

Reader in Medical Surgical Nursing,

Apollo College of Nursing,

Chennai- 600 095

7. Mrs. Sasi Kala. D, M.Sc (N).,[Ph.D (N).,]

Reader in Medical Surgical Nursing,

Apollo College Of Nursing,

Chennai-600 095

8. Mrs. G. Kanchana, M.Sc (N).,M.Sc (Psy).,

Reader in Medical Surgical Nursing,

Apollo College of Nursing,

Chennai-600 095

9. Mrs.P. Kasthuri, M.Sc (N).,

Reader in Medical Surgical Nursing,

Apollo College of Nursing,

Chennai- 600 095

APPENDIX VI

CERTIFICATE FOR CONTENT VALIDITY

TO WHOMSOEVER IT MAY CONCERN

This is to certify that tools and content for the research study developed by II year M.Sc. (Nursing) student of Apollo College of Nursing for her dissertation **"An Experimental Study to assess the Effectiveness of selected Noetic Therapies upon clinical outcome of Patients with Unstable Angina undergoing Percutaneous Coronary Intervention at Apollo Hospitals, Chennai."** was validated.

Signature of the Expert

Name and Designation

APPENDIX VII

RESEARCH PARTICIPANT CONSENT FORM

Dear participant,

I am M.Sc. Nursing student of Apollo College of Nursing, Chennai. As a part of my study, a research on **"An Experimental Study to assess the Effectiveness of selected Noetic Therapies upon clinical outcome of Patients with Unstable Angina undergoing Percutaneous Coronary Intervention."** Was selected to be conducted.

I hereby seek your consent and co-operation to participate in the study. Please be frank and honest in your responses. The information collected will be kept confidential and anonymity will be maintained.

Signature of the Researcher

I ……,……hereby consent to participate in the study.

Place:

Date: **Signature of the Participant**

APPENDIX VIII

LETTER SEEKING PERMISSION TO USE THE STUDY TOOL

Gmail

Permission to use Hospital Anxiety and Depression Scale

Renee Madeline Sheena <reneemadeline@gmail.com> 1:27 PM (2 minutes ago)

to philipsnaith

Dear Mr. Philip Snaith

With due respect I Ms.Renee Madeline Sheena, Msc Nursing II year would like to state that as a part of my curriculum requirement Iam planning to do a research entitled " An experimental study to assess the effectiveness of selected noetic therapies upon the clinical outcome of patients with unstable angina undergoing percutaneous coronary intervention at Apollo Hospitals,Chennai". For the same I would like to use Hospital anxiety and depression scale as one of my tool.(for academic purpose only).Please consider my request and grant me permission for the same.

Thanking you

APPENDIX IX

PLAGIARISM ORIGINALITY REPORT

Plagiarism Detector - Originality Report

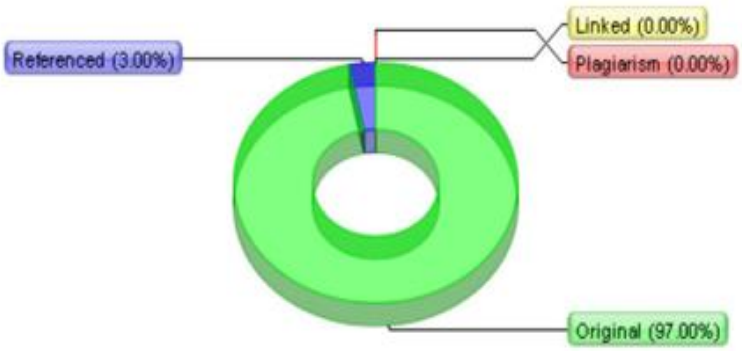
Plagiarism Detector Project:[http://plagiarism-detector.com] Application core version:935

Originality report details:

Generation Time and Date:	04/06/2016 01:15:20 PM
Document Name:	Renee Thesis.docx
Document Location:	C:\Documents and Settings\Administrator\Desktop\Thesis Renee Thesis.docx
Document Words Count:	143248

Important Hint: To understand what exactly is meant by any report value - you can click, "Help image".It will navigate you to the most detailed explanation at our web site.

Plagiarism Detection Chart:



Referenced 3% / Linked 0%

Original - 97% / 0% - Plagiarism

APPENDIX X

CERTIFICATE FOR ENGLISH EDITING

TOWHOMSOVER IT MAY CONCERN

This is to certify thatthe dissertation entitled **"An Experimental Study to assess the Effectiveness of selected Noetic Therapies upon the clinical outcome of patients with Unstable Angina undergoing Percutaneous Coronary Intervention at Apollo Hospitals, Chennai"** by S. Renee Madeline Sheena., II year M.Sc. Nursing student of Apollo College of Nursing, was edited for English Language appropriateness.

Prof. J.L. NARASIMHAN
New No.8, Second Main Road,
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Signature

APPENDIX XI

DEMOGRAPHIC VARIABLE PROFORMA FOR PATIENT RECEIVING NOETIC THERAPIES

Purposes

This Proforma is used by the investigator to collect information on demographic variables such as age, gender, education status, occupation, type of family, marital status, smoking, food pattern.

Instruction

The investigator will collect data by asking questions in the form of interview. The investigator will obtain the consent from the patient and assure the patients that the data gathered will be confidential and anonymity will be maintained.

IDENTIFICATION DATA

Sample No:

1. Age in years

1.1 30 – 40 years

1.2 41 – 50 years

1.3 51 – 60 years

2. Gender

2.1 Male

2.2 Female

3. Type of family

3.1 Joint family

3.2 Nuclear family

3.3 Extended family

4. Marital status

4.1 Married

4.2 Unmarried

5. Educational Status

5.1 Higher secondary

5.2 Degree and above

5.3 Primary

5.4 Secondary

5.5 No formal education

6. Occupation

6.1 Employed

6.2 Unemployed

6.3 Home maker

6.4 Retired

7. Type of food

7.1 Non- vegetarian

7.2 Vegetarian

APPENDIX XII

CLINICAL VARIABLE PROFORMAFOR PATIENT RECEIVING NOETIC THERAPIES

Purpose

Clinical variable proforma is designed to identify the clinical characteristics of Patient after Percutaneous Coronary.

Instructions

The investigator will collect information by interviewing the patient who are proposed for Percutaneous Coronary Intervention. Some of the data gathered by the investigator will be kept confidential and anonymity will be maintained.

Sample No:

1. **Height in cms**

   1.1 <150

   1.2 151 to 160

   1.3 161 to 170

   1.4 >170

2. **Weight in kgs**

   2.1 <50

   2.2 51 to 60

   2.3 61 to 70

   2.4 >70

3. **Pulse _____ beats per minute. (70 to 74 bts/min)**

    3.1 Bradycardia (below 60)

    3.2 Normal heart rate (60-100beats)

    3.3 Tachycardia (more than 100 beats)

4. Body mass index

    4.1 Obese [>30]

    4.2 Overweight [26-30]

    4.3 Normal weight [18-25]

5. Blood Pressure in mm of Hg(120/80 mm hg)

    5.1 Hypotensive (less than 100/70 mm hg)

    5.2 Normal blood pressure (between110-120 systolic and 70-80 diastolic)

    5.3 Mild Hypertensive (between121-130 systolic and 81-90 diastolic)

    5.4 Moderate Hypertensive (between131-149 systolic and 91-99 diastolic)

    5.5 Severe Hypertensive (more than 150 systolic and 100 or above diastolic)

6. History of smoking

    6.1 Yes

    6.2 No

If yes specify how many cigarettes per day _____

7.Previous history of any Coronary Artery Diseases

    7.1 Yes

    7.2 No

If **yes** specify _____

8. If yes, Percentage of stenosis

8.1 1 to 49% (Non-Obstructive)

8.2 > 50% (Obstructive)

8.3 No obstruction

9. Extent of Coronary Artery Diseases

9.1 No vessels involved

9.2 Single vessel involved

9.3 Two vessels involved

9.4 Three vessels involved

10. Ejection fraction

10.1 50 to 75% (Normal)

10.2 36 to 49% (Below normal)

10.3 35% and below (Low)

11.Severity of symptoms (NYHA)

11.1 Normal physical activity causes no fatigue (Class I)

11.2 Slight limitation of physical activity (Class II)

11.3 Marked physical activity comfortable at rest (Class III)

11.4 Unable to carry out activities without discomfort (Class IV)

12. History of taking any treatment for illness

12.1 Yes

12.2 No

13. History of Co-morbid illness

13.1Diabetes Mellitus

13.2Hypertension

13.3 Chronic Obstructive Pulmonary Disease

13.4 Others

13.5 None

14. Any premedication given before procedure

14.1 Yes

14.2 No

15. Any pain medication after procedure

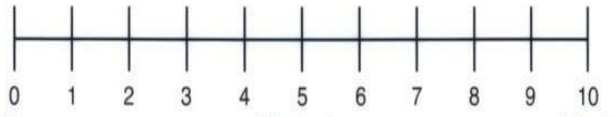
15.1 Yes

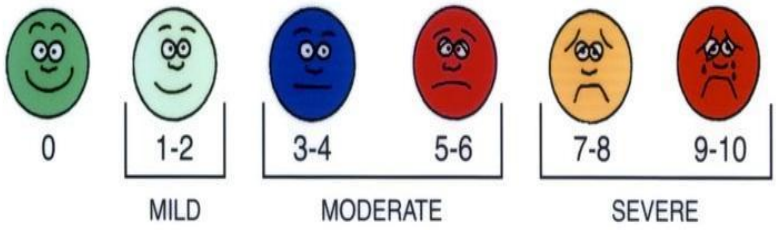
15.2 No

APPENDIX XIII

UNIVERSAL PAIN ASSESSMENT TOOL

This pain assessment tool is intended to help patient care providers assess pain according to individual patient needs. Explain and use 0-10 Scale for patient self-assessment. Use the faces or behavioral observations to interpret expressed pain when patient cannot communicate his/her pain intensity.





ACTIVITY TOLERANCE SCALE	NO PAIN	CAN BE IGNORED	INTERFERES WITH TASKS	INTERFERES WITH CONCENTRATION	INTERFERES WITH BASIC NEEDS	BEDREST REQUIRED

APPENDIX XIV

HOSPITAL ANXIETY AND DEPRESSION SCALE FOR PATIENT RECEIVING NOETIC THERAPIES

Purposes:

This rating scale was designed by Zigmond and Snaith, 1983. The purpose is to assess the anxiety and depression level of the participants in the experimental group regarding selected noetic therapies.

Instruction

Kindly read the items and answer appropriately. The response will be kept confidential and used for research purpose only.

A. I feel tense or wound up:

   Most of the time (3)

   A lot of the time (2)

   From time to time, occasionally (1)

   Not at all (0)

D. I still enjoy the things I used to enjoy:

   Definitely as much (0)

   Not quite so much (1)

   Only a little (2)

   Hardly at all (3)

A. I get a sort of frightened feeling as if something awful is about to happen;

Very definitely and quite badly (3)

Yes, but not too badly (2)

A little, but it doesn't worry me (1)

Not at all (0)

D. I can laugh and see the funny side of things

As much as I always could (0)

Not quite so much now (1)

Definitely not so much now (2)

Not at all (3)

A. Worrying thoughts go through my mind

A great of the time (3)

A lot of the time (2)

From time to time, but not too often (1)

Only occasionally (0)

D. I feel cheerful

Not at all (3)

Not often (2)

Sometimes (1)

Most of the time (0)

A. I can sit at ease and feel relaxed

Definitely (0)

Usually (1)

Not often (2)

Not at all (3)

D. I feel as if I am slowed down

Nearly all the time (3)

Very often (2)

Sometimes (1)

Not at all (0)

A. I get a sort of frightened feeling like butterflies in the stomach

Not at all (0)

Occasionally (1)

Quite often (2)

Very often (3)

D. I have lost interest in my appearance

Definitely (3)

I don't take as much care as I should (2)

I may not take quite as much care (1)

I take just as much care as ever (0)

A. I feel restless as I have to be on the move

Very much indeed (3)

Quite a lot (2)

Not very much (1)

Not at all (0)

D. I look forward with enjoyment to things

As much as I ever did (0)

Rather less than I used to (1)

Definitely less than I used to (2)

Hardly at all (3)

A. I get sudden feelings of panic

Very often indeed (3)

Quite often (2)

Not very often (1)

Not at all (0)

D. I Can enjoy a good book or radio or TV program

Often (0)

Sometimes (1)

Not often (2)

Very seldom (3)

Scoring (add the A's = Anxiety, add the D's= depression).The norms below will give you an idea of the level of anxiety and depression.

0-7 = Normal

8 – 10 = Borderline abnormal (anxiety or depression)

11- 21 = Abnormal (anxiety or depression)

(Zigmond and Snaith (1983)

APPENDIX XV

OBSERVATION CHECKLIST FOR BLOOD PRESSURE FOR PATIENT RECEIVING NOETIC THERAPIES

Purposes:

The purpose is to assess the non-invasive hemodynamic parameters like blood pressure of the participants in the experimental group regarding selected noetic therapies.

Components	0	1	2	3	4
Blood Pressure (mmHg)	**BP less than 100 systolic and below 70**	**BP between 110-120 systolic and 70-80 diastolic**	**BP between 121-130 systolic and 81-90 diastolic**	**BP between 131-1149 systolic and 91-99 diastolic**	**BP more than 150 systolic and 100 or above 100 diastolic**

INTERPRETATION

0 Hypotensive

1 Normal blood pressure

2 Mild Hypertensive

3 Moderate Hypertensive

4 Severe Hypertensive

APPENDIX XVI

OBSERVATION CHECKLIST FOR HEART RATE FOR PATIENT RECEIVING NOETIC THERAPIES

Purposes:

The purpose is to assess the non-invasive hemodynamic parameters like heart rate of the participants in the experimental group regarding selected noetic therapies.

Components	0	1	2
Heart Rate (Beats/min)	**Pulse rate below 60**	**Pulse rate between 60 to 100**	**Pulse rate more than 100**

INTERPRETATION

0 Bradycardia

1 Normal heart rate

2 Tachycardia

APPENDIX XVII

BLUEPRINT FOR RATING SCALETO ASSESS THE LEVEL OF SATISFACTION OF PATIENTS REGARDING NOETIC THERAPIES.

S.No	Content	Items	Total items	Percentage
1	Researchers approach	1,2,3,6	4	26.66%
2	Method of application of noetic therapies	4,5,7	3	20%
3	Effectiveness of noetic therapies	8,9,10,11,12,13,14,15	8	53.33%
	TOTAL	-	15	100%

RATING SCALE ON THE LEVEL OF SATISFACTION OF SELECTED NOETIC THERAPIES

Purposes:

This rating scale is designed to assess the level of satisfaction of the participants in the experimental group regarding selected noetic therapies.

Instruction

There are 15 items below. Kindly read the items carefully and give your response with regard to how you feel about the noetic therapies from highly satisfactory, satisfactory, to highly dissatisfactory. Put a tick mark against your answers. Describe your responses freely and frankly. The response will be kept confidential and used for research purpose only.

S.No	Items	Highly Satisfied	Satisfied	Dissatisfied	Highly Dissatisfied
1	Explanation regarding selected noetic therapies				
2	Approach of the researcher				
3	Time spent by the researcher (20 to 30 min)				
4	Not interfere with the routine treatment				
5	Arrangements for privacy made during the programme				

6	The programme was easy to understand and follow				
7	Given at appropriate time and frequency				
8	Effectiveness of noetic therapies				
9	Effect of therapy in relaxing				
10	Therapy is as per my likes				
11	Acceptable to my cultural values				
12	Suitability of therapy for patients conditions				
13	Cost effectiveness				
14	Usefulness for other stress conditions				
15	Suitable for suggesting to others				

Scoring

Highly Dissatisfied - 0

Dissatisfied - 1

Satisfied - 2

Highly satisfied - 3

The total score is converted into percentage and graded as given below.

SCORING KEY

SCORING	**INTERPRETATION**
Highly Satisfied	76-100%
Satisfied	51-75%
Dissatisfied	25-50%
Highly Dissatisfied	Below 25%

APPENDIX XVIII

DATA CODE SHEET

1. Age in years (AGE)

1.1 30 – 40 years

1.2 41 – 50 years

1.3 51 – 60 years

2. Gender(GEN)

2.1 Male

2.2 Female

3. Type of family(FAM)

3.1 Joint family

3.2 Nuclear family

3.3 Extended family

4.Marital status(MS)

4.1 Married

4.2 Unmarried

5. Educational Status(EDU.S)

5.1 Higher secondary

5.2 Degree and above

5.3 Primary

5.4 Secondary

5.5 No formal education

6. Occupation(OC)

6.1 Employed

6.2 Unemployed

6.3 Home maker

6.4 Retired

7. Type of food(FD TYP)

7.1 Non- vegetarian

7.2 Vegetarian

1. Height in cms(HT)

1.1 <150

1.2 151 to 160

1.3 161 to 170

1.4 >170

2. Weight in kgs(WT)

2.1 <50

2.2 51 to 60

2.3 61 to 70

2.4 >70

3. Pulse _____ beats per minute. (70 to 74 bts/min)(H.R)

3.1 Bradycardia (below 60)

3.2 Normal heart rate (60-100beats)

3.3 Tachycardia (more than 100 beats)

4. Body mass index(BMI)

4.1 Obese [>30]

4.2 Overweight [26-30]

4.3 Normal weight [18-25]

5. Blood Pressure in mm of Hg(120/80 mm hg)(BP)

5.1 Hypotensive (less than 100/70 mm hg)

5.2 Normal blood pressure (between110-120 systolic and 70-80 diastolic)

5.3 Mild Hypertensive (between121-130 systolic and 81-90 diastolic)

5.4 Moderate Hypertensive (between131-149 systolic and 91-99 diastolic)

5.5 Severe Hypertensive (more than 150 systolic and 100 or above diastolic)

6. History of smoking(H/O SMO)

6.1 Yes

6.2 No

If yes specify how many cigarettes per day _____

7.Previous history of any Coronary Artery Diseases(H/O CAD)

7.1 Yes

7.2 No

If **yes** specify _____

8. If yes, Percentage of stenosis(% OF STE)

8.1 1 to 49% (Non-Obstructive)

8.2 > 50% (Obstructive)

8.3 No obstruction

9. Extent of Coronary Artery Diseases (EXD OF CAD)

9.1 No vessels involved

9.2 Single vessel involved

9.3 Two vessels involved

9.4 Three vessels involved

10. Ejection fraction (EF)

10.1 50 to 75% (Normal)

10.2 36 to 49% (Below normal)

10.3 35% and below (Low)

11.Severity of symptoms (NYHA) (SEV OF SYMP)

11.1 Normal physical activity causes no fatigue (Class I)

11.2 Slight limitation of physical activity (Class II)

11.3 Marked physical activity comfortable at rest (Class III)

11.4 Unable to carry out activities without discomfort (Class IV)

12. History of taking any medicine (H/O MED)

12.1 Yes

12.2 No

13. History of Co-morbid illness (H/O CO-ILL)

13.1Diabetes Mellitus

13.2Hypertension

13.3 Chronic Obstructive Pulmonary Disease

13.4 Others

13.5 None

14. Any premedication given before procedure (PRE MED)

14.1 Yes

14.2 No

15. Any pain medication after procedure (PO MED)

15.1 Yes

15.2 No

APPENDIX XIX

MASTER CODING SHEET - CONTROL GROUP

DEMOGRAPHIC VARIABLE								CLINICAL VARIABLE														CLINICAL OUTCOME					
S.NO	AGE	GEN	FAM	MS	EDU.S	OC	FD TYP	HT	WT	H.R	BMI	BP	H/O SMO	H/O CAD	% OF STE	EXD OF CAD	EF	SEV OF SYMP	H/O MED	H/O CO-ILL	PRE MED	PO MED	SYS BP	DIAS BP	HR	PAIN	ANX	DEP
1	1.3	2.1	3.1	4.1	5.1	6.1	7.1	1.2	2.2	3.3	4.2	5.2	6.1	7.2	8.1	9.3	10.2	11.2	12.2	13.4	14.2	15.1	145	80	120	2	6	11
2	1.3	2.1	3.1	4.1	5.2	6.4	7.1	1.3	2.2	3.2	4.2	5.1	6.1	7.2	8.1	9.3	10.1	11.1	12.2	13.4	14.2	15.1	140	80	102	3	19	13
3	1.3	2.1	3.2	4.1	5.1	6.1	7.2	1.2	2.3	3.1	4.3	5.1	6.2	7.2	8.2	9.2	10.2	11.3	12.2	13.5	14.2	15.1	158	80	98	2	7	7
4	1.2	2.1	3.2	4.1	5.1	6.1	7.1	1.2	2.4	3.2	4.2	5.2	6.1	7.1	8.1	9.2	10.1	11.3	12.2	13.5	14.2	15.1	140	80	118	3	9	4
5	1.3	2.1	3.1	4.1	5.4	6.4	7.2	1.2	2.4	3.2	4.2	5.1	6.1	7.2	8.2	9.1	10.2	11.3	12.2	13.5	14.1	15.1	140	78	65	2	19	10
6	1.3	2.2	3.2	4.1	5.2	6.3	7.1	1.1	2.1	3.2	4.1	5.2	6.2	7.2	8.2	9.2	10.2	11.3	12.2	13.5	14.1	15.1	150	80	80	2	6	16
7	1.3	2.1	3.3	4.1	5.4	6.1	7.1	1.3	2.2	3.2	4.1	5.1	6.1	7.2	8.1	9.3	10.2	11.1	12.2	13.4	14.2	15.1	140	60	121	2	16	9
8	1.2	2.1	3.1	4.1	5.4	6.1	7.2	1.2	2.2	3.3	4.1	5.2	6.1	7.2	8.2	9.2	10.1	11.2	12.1	13.2	14.1	15.1	120	80	102	3	11	14
9	1.1	2.1	3.2	4.1	5.4	6.1	7.2	1.3	2.3	3.4	4.1	5.1	6.2	7.2	8.1	9.3	10.1	11.1	12.1	13.1	14.2	15.1	118	80	104	2	10	15
10	1.3	2.1	3.3	4.1	5.4	6.1	7.2	1.3	2.3	3.3	4.1	5.1	6.2	7.1	8.2	9.2	10.2	11.2	12.2	13.4	14.1	15.1	120	92	103	3	11	11
11	1.2	2.1	3.2	4.1	5.4	6.4	7.2	1.2	2.4	3.2	4.2	5.2	6.1	7.2	8.3	9.1	10.2	11.2	12.2	13.5	14.1	15.1	160	80	98	1	13	7
12	1.3	2.2	3.1	4.1	5.1	6.3	7.1	1.1	2.1	3.1	4.3	5.2	6.2	7.2	8.1	9.3	10.2	11.3	12.1	13.2	14.2	15.1	150	90	102	2	7	16
13	1.2	2.1	3.1	4.1	5.2	6.1	7.2	1.3	2.2	3.3	4.3	5.1	6.1	7.2	8.1	9.2	10.2	11.1	12.2	13.5	14.1	15.1	145	92	79	3	16	17
14	1.3	2.1	3.2	4.1	5.4	6.4	7.1	1.4	2.2	3.4	4.2	5.2	6.1	7.2	8.2	9.3	10.1	11.2	12.2	13.5	14.2	15.1	140	85	86	2	15	11
15	1.3	2.1	3.3	4.1	5.4	6.1	7.1	1.3	2.2	3.2	4.1	5.2	6.1	7.1	8.2	9.2	10.2	11.2	12.2	13.5	14.1	15.1	158	90	80	3	7	13
16	1.3	2.1	3.2	4.1	5.4	6.1	7.2	1.4	2.3	3.3	4.1	5.1	6.2	7.2	8.2	9.3	10.3	11.1	12.2	13.5	14.1	15.1	140	90	74	1	15	8
17	1.3	2.1	3.1	4.1	5.4	6.1	7.2	1.2	2.3	3.2	4.3	5.1	6.1	7.2	8.2	9.2	10.2	11.1	12.1	13.1	14.2	15.1	140	92	83	2	10	13
18	1.2	2.1	3.1	4.1	5.1	6.1	7.1	1.2	2.3	3.1	4.3	5.1	6.2	7.2	8.1	9.2	10.1	11.2	12.2	13.5	14.1	15.1	150	80	90	3	17	17
19	1.1	2.1	3.2	4.1	5.2	6.1	7.1	1.3	2.2	3.2	4.3	5.2	6.2	7.2	8.2	9.3	10.1	11.1	12.2	13.5	14.1	15.1	130	83	100	2	9	16
20	1.3	2.1	3.2	4.1	5.2	6.4	7.2	1.2	2.2	3.3	4.3	5.3	6.1	7.2	8.2	9.2	10.1	11.2	12.2	13.5	14.1	15.1	149	70	74	1	14	7
21	1.3	2.1	3.2	4.1	5.2	6.1	7.2	1.2	2.2	3.2	4.3	5.3	6.2	7.1	8.1	9.2	10.1	11.3	12.2	13.5	14.2	15.1	114	90	80	3	7	12
22	1.3	2.1	3.1	4.1	5.1	6.1	7.1	1.3	2.2	3.3	4.3	5.2	6.1	7.2	8.3	9.1	10.1	11.2	12.2	13.5	4.1	15.1	136	75	100	1	16	15
23	1.2	2.1	3.2	4.1	5.1	6.1	7.1	1.4	2.2	3.4	4.3	5.2	6.1	7.2	8.1	9.2	10.2	11.2	12.2	13.5	14.2	15.1	120	79	102	3	9	5
24	1.1	2.2	3.1	4.1	5.1	6.3	7.1	1.1	2.1	3.1	4.3	5.3	6.2	7.2	8.3	9.1	10.1	11.1	12.2	13.5	14.1	15.1	140	85	79	2	19	15
25	1.3	2.1	3.1	4.1	5.4	6.4	7.1	1.3	2.3	3.3	4.3	5.2	6.1	7.2	8.2	9.2	10.2	11.1	12.2	13.5	14.1	15.1	115	70	86	0	8	6
26	1.3	2.1	3.2	4.1	5.1	6.1	7.1	1.4	2.4	3.2	4.2	5.1	6.1	7.2	8.1	9.2	10.1	11.1	12.1	13.2	14.1	15.1	129	80	80	2	6	11
27	1.3	2.1	3.1	4.1	5.4	6.1	7.1	1.3	2.3	3.3	4.3	5.2	6.2	7.2	8.2	9.2	10.2	11.2	12.2	13.5	14.1	15.1	117	90	90	2	17	10
28	1.3	2.1	3.1	4.1	5.4	6.1	7.1	1.2	2.2	3.3	4.3	5.2	6.1	7.2	8.3	9.1	10.2	11.1	12.2	13.5	14.1	15.1	150	70	94	1	10	19
29	1.3	2.1	3.2	4.1	5.1	6.4	7.1	1.2	2.2	3.3	4.3	5.2	6.2	7.1	8.3	9.1	10.1	11.2	12.2	13.5	14.1	15.1	130	90	83	2	5	15
30	1.3	2.1	3.2	4.1	5.4	6.1	7.1	1.2	2.2	3.4	4.3	5.2	6.1	7.2	8.3	9.1	10.2	11.2	12.2	13.5	14.1	15.1	114	90	120	1	17	11

MASTER CODING SHEET - EXPERIMENTAL GROUP

DEMOGRAPHIC VARIABLE								CLINICAL VARIABLE														CLINICAL OUTCOME					
S.NO	AGE	GEN	FAM	MS	EDU.S	OC	FD TYP	HT	WT	H.R	BMI	BP	H/O SMO	H/O CAD	% OF STE	EXD OF CAD	EF	SEV OF SYMP	H/O MED	H/O CO-ILL	PRE MED	PO MED	SYS BP	DIAS BP	HR	PAIN	ANX	DEP
1	1.2	2.1	3.2	4.1	5.4	6.1	7.1	1.2	2.3	3.3	4.2	5.1	6.1	7.1	8.1	9.2	10.2	11.2	12.1	13.1	14.2	15.1	130	60	120	1	7	5
2	1.3	2.1	3.2	4.1	5.2	6.1	7.1	1.3	2.4	3.2	4.3	5.2	6.1	7.1	8.2	9.2	10.2	11.2	12.1	13.2	14.2	15.1	120	63	102	0	5	6
3	1.3	2.1	3.2	4.1	5.1	6.1	7.1	1.3	2.3	3.4	4.2	5.2	6.1	7.1	8.2	9.3	10.1	11.3	12.1	13.2	14.2	15.1	120	70	98	1	8	10
4	1.2	2.2	3.2	4.1	5.2	6.4	7.1	1.1	2.1	3.3	4.2	5.2	6.2	7.2	8.2	9.1	10.1	11.1	12.2	13.5	14.2	15.1	122	70	118	0	10	5
5	1.3	2.1	3.2	4.1	5.2	6.1	7.1	1.3	2.3	3.2	4.1	5.2	6.1	7.2	8.2	9.3	10.2	11.4	12.1	13.2	14.1	15.1	125	70	65	1	7	11
6	1.3	2.1	3.2	4.1	5.2	6.1	7.1	1.2	2.3	3.1	4.1	5.2	6.1	7.2	8.2	9.2	10.1	11.1	12.2	13.5	14.2	15.1	120	70	80	0	8	6
7	1.1	2.1	3.1	4.1	5.2	6.4	7.1	1.2	2.4	3.2	4.2	5.2	6.1	7.1	8.2	9.2	10.2	11.2	12.2	13.5	14.2	15.1	110	70	121	1	10	10
8	1.2	2.2	3.1	4.1	5.4	6.3	7.2	1.3	2.3	3.2	4.2	5.2	6.2	7.1	8.3	9.3	10.2	11.3	12.1	13.2	14.1	15.1	120	80	102	1	5	6
9	1.1	2.1	3.2	4.1	5.2	6.1	7.1	1.2	2.3	3.1	4.1	5.2	6.1	7.2	8.1	9.3	10.2	11.3	12.2	13.5	14.2	15.1	118	80	104	0	11	12
10	1.2	2.1	3.1	4.1	5.4	6.1	7.1	1.2	2.4	3.3	4.2	5.2	6.1	7.1	8.2	9.2	10.1	11.2	12.2	13.5	14.2	15.1	120	75	103	1	10	6
11	1.3	2.1	3.2	4.1	5.2	6.1	7.1	1.2	2.3	3.4	4.2	5.1	6.1	7.2	8.2	9.3	10.2	11.3	12.1	13.1	14.2	15.1	125	82	98	0	6	8
12	1.3	2.2	3.1	4.1	5.2	6.3	7.2	1.2	2.4	3.3	4.3	5.2	6.2	7.1	8.2	9.3	10.2	11.3	12.1	13.2	14.2	15.1	120	50	102	1	9	11
13	1.2	2.1	3.2	4.1	5.1	6.1	7.1	1.2	2.3	3.3	4.1	5.1	6.1	7.2	8.1	9.4	10.3	11.4	12.1	13.1	14.2	15.1	120	70	79	1	11	7
14	1.3	2.1	3.2	4.1	5.2	6.1	7.1	1.3	2.4	3.2	4.1	5.2	6.1	7.1	8.2	9.2	10.3	11.2	12.2	13.5	14.2	15.1	124	70	86	0	10	10
15	1.3	2.1	3.3	4.1	5.4	6.4	7.1	1.2	2.3	3.1	4.2	5.1	6.1	7.2	8.3	9.2	10.1	11.2	12.2	13.5	14.1	15.1	120	80	80	1	12	9
16	1.2	2.2	3.2	4.1	5.4	6.3	7.1	1.3	2.4	3.3	4.1	5.2	6.2	7.1	8.2	9.3	10.1	11.3	12.1	13.2	14.2	15.1	120	70	74	0	9	12
17	1.3	2.1	3.1	4.1	5.4	6.1	7.1	1.2	2.3	3.4	4.2	5.2	6.1	7.2	8.2	9.3	10.2	11.3	12.2	13.5	14.2	15.1	110	80	83	1	8	11
18	1.1	2.1	3.2	4.1	5.2	6.1	7.1	1.3	2.3	3.2	4.2	5.2	6.1	7.2	8.2	9.3	10.3	11.3	12.2	13.5	14.2	15.1	112	70	90	0	9	9
19	1.3	2.1	3.1	4.1	5.1	6.1	7.1	1.2	2.3	3.4	4.1	5.1	6.1	7.2	8.1	9.2	10.2	11.2	12.2	13.5	14.2	15.1	118	72	100	0	10	10
20	1.3	2.1	3.2	4.1	5.2	6.3	7.1	1.3	2.3	3.3	4.3	5.2	6.2	7.1	8.2	9.4	10.3	11.4	12.1	13.2	14.2	15.1	120	70	74	1	9	11
21	1.3	2.1	3.3	4.1	5.4	6.1	7.1	1.2	2.3	3.2	4.2	5.1	6.1	7.1	8.3	9.3	10.2	11.3	12.1	13.1	14.1	15.1	140	75	80	0	8	8
22	1.2	2.1	3.3	4.1	5.4	6.1	7.1	1.2	2.3	3.1	4.2	5.2	6.1	7.2	8.2	9.2	10.1	11.2	12.2	13.5	14.2	15.1	122	79	100	0	11	7
23	1.1	2.1	3.2	4.1	5.1	6.1	7.1	1.3	2.3	3.2	4.2	5.3	6.1	7.2	8.2	9.3	10.3	11.3	12.1	13.2	14.2	15.1	120	75	102	1	10	11
24	1.2	2.2	3.2	4.1	5.2	6.3	7.2	1.2	2.3	3.3	4.1	5.2	6.2	7.2	8.2	9.4	10.2	11.4	12.2	13.5	14.2	15.1	120	80	79	0	11	9
25	1.1	2.1	3.2	4.1	5.4	6.1	7.1	1.2	2.3	3.2	4.1	5.2	6.1	7.1	8.2	9.3	10.2	11.2	12.2	13.5	14.2	15.1	130	75	86	2	12	10
26	1.2	2.1	3.3	4.1	5.4	6.4	7.1	1.3	2.3	3.3	4.2	5.1	6.1	7.2	8.2	9.4	10.3	11.4	12.2	13.5	14.2	15.1	115	70	80	1	9	11
27	1.3	2.1	3.2	4.1	5.2	6.1	7.1	1.2	2.3	3.3	4.2	5.2	6.1	7.1	8.2	9.3	10.1	11.3	12.2	13.5	14.2	15.1	110	70	90	0	10	7
28	1.1	2.1	3.1	4.1	5.4	6.1	7.1	1.2	2.3	3.4	4.2	5.2	6.1	7.2	8.2	9.4	10.3	11.4	12.2	13.5	14.2	15.1	120	80	94	0	7	11
29	1.3	2.1	3.2	4.1	5.1	6.1	7.1	1.2	2.4	3.3	4.1	5.1	6.1	7.2	8.2	9.3	10.2	11.3	12.1	13.1	14.2	15.1	118	75	83	1	8	10
30	1.3	2.1	3.2	4.1	5.2	6.1	7.1	1.3	2.3	3.3	4.3	5.2	6.1	7.2	8.2	9.3	10.2	11.3	12.1	13.2	14.2	15.1	120	80	120	0	8	12

APPENDIX XX

PHOTOGRAPHS DURING DATA COLLECTION