

**DISSERTATION ON  
“A STUDY TO ASSESS THE EFFECTIVENESS OF  
PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN  
REDUCING NAUSEA AND VOMITING FOR CANCER  
PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY  
WARD AT RAJIV GANDHI GOVERNMENT GENERAL  
HOSPITAL, CHENNAI-03”.**

**M.SC (NURSING) DEGREE EXAMINATION  
BRANCH- I MEDICAL SURGICAL NURSING**

**COLLEGE OF NURSING  
MADRAS MEDICAL COLLEGE, CHENNAI-600 003**



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CHENNAI- 600 032**

*In partial fulfillment of the requirement for the award of degree of*

**MASTER OF SCIENCE IN NURSING**

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**“A STUDY TO ASSESS THE EFFECTIVENESS OF  
PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN  
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Institution : COLLEGE OF NURSING,  
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CHENNAI – 600 003.

Sd: \_\_\_\_\_

Internal Examiner

Date: \_\_\_\_\_

Sd: \_\_\_\_\_

External Examiner

Date: \_\_\_\_\_

**THE TAMILNADU DR.M.G. R MEDICAL UNIVERSITY,  
CHENNAI – 600 032.**

## **CERTIFICATE**

This is to certify that this dissertation titled “**A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN REDUCING NAUSEA AND VOMITING FOR CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY WARD AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03**” is a bonafide work done by **PRIYADHARSHINI.G**, M.Sc. (N) II year student, College of Nursing, Madras Medical College, Chennai submitted to The Tamil Nadu DR.M.G. R Medical University, Chennai-03, in partial fulfillment of the requirements for the award of degree of Master of Science in Nursing, Branch I- **MEDICAL SURGICAL NURSING**, under our guidance and supervision during the academic period from 2017 – 2019.

**Mrs.A.Thahira Begum, M.Sc(N)., MBA., M.Phil.,**  
Principal  
College of Nursing,  
Madras Medical College,  
Chennai -03

**Dr.R.Jayanthi, MD, FRCP(Glasg)**  
Dean  
Madras Medical College  
Chennai -03

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WARD AT RAJIV GANDHI GOVERNMENT GENERAL  
HOSPITAL, CHENNAI-03”.**

Approved by the Dissertation Committee on 24.07.2018

**CLINICAL SPECIALITY GUIDE**

**Mrs.V.K.R.Periyar Selvi, M.Sc(N).,**  
Reader in Medical Surgical Nursing,  
College of Nursing,  
Madras Medical College,  
Chennai -03.

\_\_\_\_\_

**HEAD OF THE DEPARTMENT**

**Mrs.A.Thahira Begum, M.Sc(N)., M.B.A., M.Phil.,**  
Principal,  
College of Nursing,  
Madras Medical College,  
Chennai-03.

\_\_\_\_\_

**DEAN**

**DR.R.Jayanthi, MD., FRCP (Glasg).,**  
Dean,  
Madras Medical College,  
Chennai-03.

\_\_\_\_\_

*A Dissertation submitted to*  
**THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY,  
CHENNAI**

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Nilamisai needu vazhvaar”*

*- Thirukkural, Kural:3*

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## **ABSTRACT**

Cancer is a group of disease involving abnormal cell growth with the potential to invade or spread to the other parts of the body. The treatment of choice for cancer is chemotherapy, radiation therapy and surgeries. Chemotherapy drugs have a range of side effects that depends on the type of medications used. The most common side effects are nausea and vomiting. The side effects of chemotherapy are treated by pharmacological and non-pharmacological measures. Progressive Muscle Relaxation is a mind-body technique that involves slowly tensing and then relaxing each muscle in the body. The various studies suggest PMR significantly reduces nausea and vomiting induced by chemotherapy agent.

**TITLE:** “A study to assess the effectiveness of progressive muscle relaxation technique in reducing nausea and vomiting for cancer patients receiving chemotherapy in Oncology Ward at Rajiv Gandhi Government General Hospital, Chennai-03”.

**OBJECTIVES:** To assess the post-intervention level of chemotherapy induced nausea and vomiting in the control and experimental group. To assess the effectiveness of Progressive Muscle Relaxation technique among chemotherapy patients in oncology ward for experimental group. (Post intervention level). To associate the effectiveness of post test score with selected demographical variables.

**METHODS AND MATERIALS:** This study was conducted with 60 samples (Oncology clients) in quantitative approach, True experimental design, Post-test only control group design, sampling selection was done by probability sampling technique-Simple random sampling. Post test scoring of nausea and vomiting after chemotherapy was assessed by using modified Rhodes index of nausea and vomiting. The intervention of Progressive Muscle Relaxation Technique for the duration of 25-30 minutes and was implemented twice a day

from the day of admission (Before one hour of administration of chemotherapy agents and other at evening time), Carried out for the following three days of chemotherapy.

**RESULTS:** In experiment group, 83.33% of them are having mild level of nausea and vomiting score, 16.67% of them are having moderate level of nausea and vomiting and none are having severe level of nausea and vomiting score.

In control group, none of them are having mild level of nausea and vomiting score, 80.00% of them are having moderate level of nausea and vomiting and 20% are having severe level of nausea and vomiting score.

Experiment group patients are having 6.70 Nausea and vomiting score and control group patients are having 14.64 Nausea and vomiting score, so the difference is 7.94, this difference is large and it is significant. It was tested using Student independent t-test.

**CONCLUSION:** Progressive Muscle Relaxation Technique had a significant effect on the level of chemotherapy induced nausea and vomiting. Hence the investigator concludes that Progressive Muscle Relaxation as a non-pharmacological intervention is effective in reducing chemotherapy induced nausea and vomiting among patients receiving chemotherapy.

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## LIST OF ABBREVIATIONS

ABBREVIATION	EXPANSION
CINV	Chemotherapy Induced Nausea and Vomiting
CAM	Complementary Alternative Medicine
CIM	Complementary Integrative Medicine
PMRT	Progressive Muscle Relaxation Technique
IARC	International Agency for Research on Cancer
CINAHL	Cumulative Index to Nursing and Allied Health Literature
QoL	Quality of Life
VAS	Visual Analog Scale
ANV	Anticipated Nausea and Vomiting
CRF	Cancer Related Fatigue
ESAS	Edmonton Symptoms Assessment Scale
MYCWQ	Measures Yourself Concerns and Well Being Questionnaire
GI	Guided Imagery
BAI	Beck Anxiety Inventory
FSI	Fatigue Symptom Inventory
MANE	Morrow Assessment of Nausea and Emesis
DDB	Deep Diaphragmatic Breathing
FACT-G	Functional Assessment of Cancer Therapy General
X <sup>2</sup>	Chi-Square test
SD	Standard Deviation
S	Significant
NS	Non-Significant

## CHAPTER-I INTRODUCTION

*“Scientific approach to disease was like a silver lining in the Darker cloud of Black magic witchcraft and human sacrifices”*

Cancer is the name given to a collection of related disease. In all types of cancer, some of the body's cells begin to divide without stopping and spread into surrounding tissues. Cancer can start almost anywhere in the human body, which is made up of trillions of cells. Normally, human cells grow and divide to form new cells as the body needs them. When cells grow old and or become damaged, they die, and new cells take their place. When cancer develops, however this orderly process breaks down. As cells become more and more abnormal, old or damaged cell survive when they should die, and new cells form when they are not needed. These extra cells can divide without stopping and may growth is called tumors.

As per worldwide cancer statistics view, 17 million new cases are reported, 9.6 million deaths are occurred by cancer issues, and 33% cancer cases linked to exposure to tobacco smoke worldwide. The three most common modalities are used to treat cancer are surgery, radiation therapy and chemotherapy. Treatment which aimed at removing the cancer cells or destroying them with the administration of medication or by radiation exposure.

Nausea and vomiting are common and debilitating side effects of chemotherapy. Despite recent advances in managing nausea and vomiting in these settings, these two symptoms remain amongst the most feared side effects of chemotherapy. Chemotherapy-induced nausea and vomiting (CINV) affects 70-80% of people with cancer, and has a significant impact on the patients and on healthcare resources.

Nausea is defined as a sick sensation felt in the stomach which may result in vomiting (or emesis). Vomiting is the act by which the stomach contents are expelled via the mouth. Chemotherapy is thought to initiate nausea and vomiting by activating chemicals which stimulate areas in the brain responsible for vomiting. These chemicals are known as neurotransmitters and they are responsible for relaying messages from the stomach to the brain. The key neurotransmitters involved are called Serotonin, Neurokinin-I and Dopamine.

CINV can be classified as acute, delayed or anticipatory based on the timing and type of chemotherapy involved. Acute and delayed CINV are directly related to how likely the chemotherapy drugs to induce vomiting, or its “emotogenicity”. Anticipatory CINV, as the name suggests, is thought to be related to previous experiences with chemotherapy, and the psychological triggers associated with it.

Since pharmacological treatments have not meet the complete successful rate to manage chemotherapy induced nausea and vomiting, exploring of complementary role of other Non-pharmacological technique that can be used in addition to pharmacological approaches become paramount. Moreover cancer treatments becomes more aggressive during the last 20 years, so the need for new Complementary Alternative Modalities (CAM) to manage nausea and vomiting has become apparent.

The client responds well to various types of mind/body intervention of CAM as a relaxation technique such intervention is commonly used to treat nausea and vomiting. Progressive Muscle Relaxation (PMR) as a type of cognitive behavioural therapy in mind body medicine domains in CAM can effectively control anticipatory nausea and vomiting in adult patients. Progressive Muscle Relaxation (PMRT) was defined as a technique of alternatively tensing and relaxing



muscle groups throughout the body to become aware of tension and contrast between muscle tension and relaxation. It was developed by Dr. Edmund Jacobson, American Physician in the year 1908.

It includes progressive muscle relaxation (tense-release) of 11 groups of muscles (right arm, left arm, forehead, jaw and neck, back and shoulders, stomach, thighs, right calf, right foot, and left foot) and deep breathing. The progressive muscle relaxation (PMRT) sessions starts by tensing-releasing the groups of muscles in the upper body first and then progresses to tense-release the groups of muscles in the lower part of the body. Tension-release of groups of muscles was followed by deep breathing for about 25 minutes.

Progressive muscle relaxation as a non-pharmacological intervention may be beneficial for preventing or managing nausea and vomiting to patients receiving chemotherapy. Several studies examined effectiveness of progressive muscle relaxation in reducing the side effects of chemotherapy such as nausea and vomiting. The study conducted by Bern Kurt et al. (2018) shows that the progressive muscle relaxation significantly reduces the physical symptoms especially nausea, vomiting and fatigue.

Andreas Charalambous et al. (2016) A Randomized Controlled Trial in which 208 patients equally assigned either in the intervention or the control group. After implementing the relaxation technique, the result shows that there is the evidence of nausea, vomiting and retching occurred significantly less often in intervention group. This study provided evidence that the PMR can be effective in the management of nausea, vomiting and retching in cancer patients receiving chemotherapy.

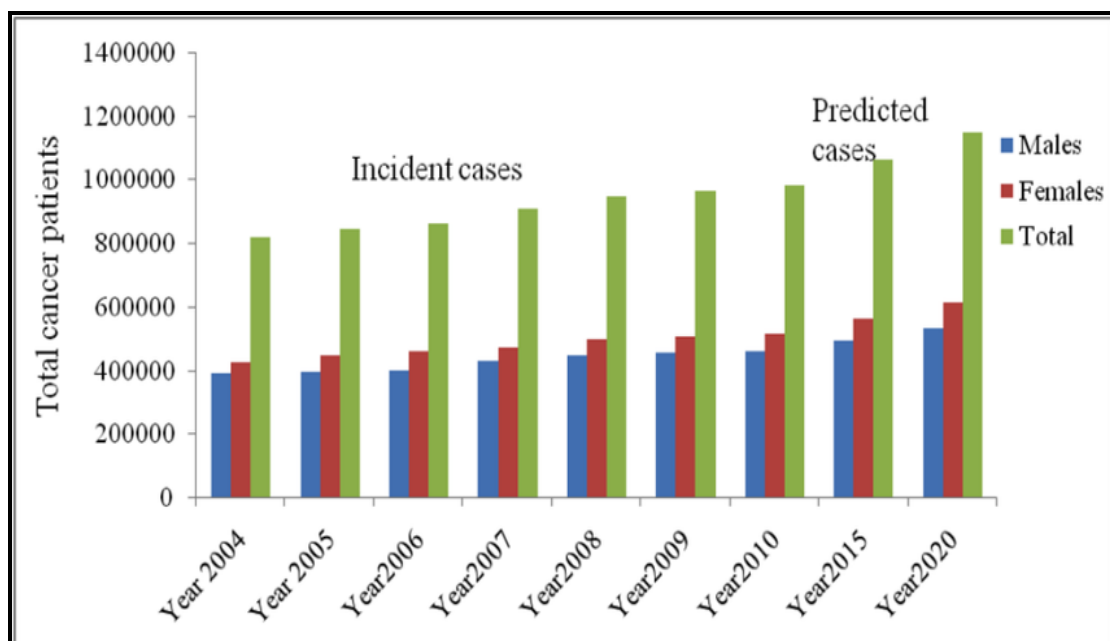
According to the cancer organization, the non-drug treatments can also be used to reduce anticipatory nausea and vomiting in

chemotherapy patients. Patient who learn PMR often go on to use this method as a way to cope with other stresses, too. It's also used to help with nervousness, pain, anger, headache and depression.

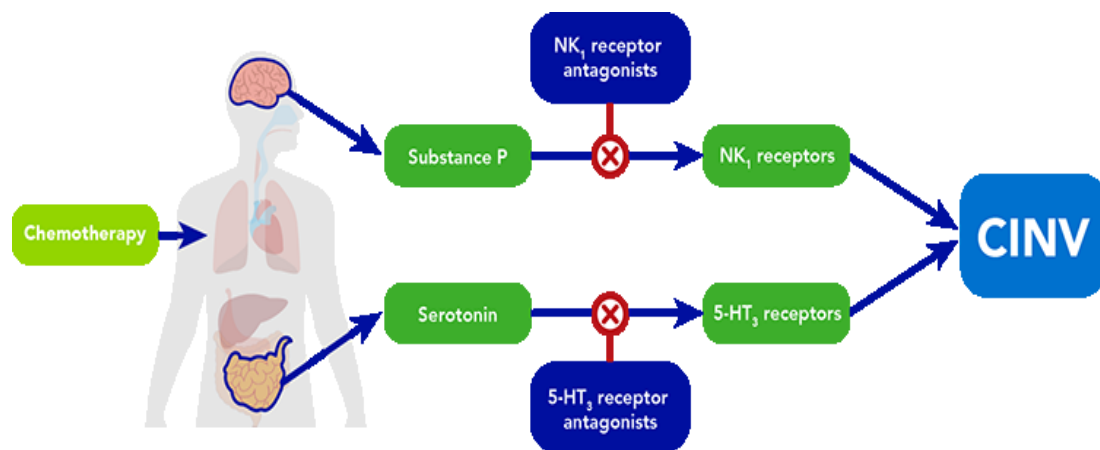
### 1.1. BACKGROUND OF THE STUDY

Cancer have profound social and economic consequences for people in India, often leading to family impoverishment and social inequity. Slightly 1 million new cases of cancer are diagnosed every year in a population of 1.2 billion. In age – adjusted terms this represents a combined male and female incidence of about a quarter of that recorded in western Europe. However, an estimated 6 deaths in India were caused by cancer in 2012. Many cancer cases in India are associated with tobacco use, infections, and other avoidable causes. Social factors, especially inequalities, are major determinants of India's cancer burden, with poorer people more likely to die from cancer before the age of 70 years than those who are more affluent.

**FIG NO 1.1 YEAR WISE TOTAL CANCER PREVALENCE IN INDIA (ICMR)**



As the second most populous nation and one of the fastest - growing major economies, India faces many challenges, but one which is often overlooked is the provision of cancer care. Currently, overall public expenditure on health care is only 1.5% of GDP. Although incidence of cancer is low in India compared with high-income countries, mortality is high, and incidence is projected to rise to 1.7 million individuals in 2035-this is a serious health issue which cannot be ignored. By Lancet Oncology view, Leading health professionals and policy makers examine the challenges that India facing in providing care in a diverse and complex environment, and suggest how this can be achieved.



**FIG NO.1.2 CHEMOTHERAPY INDUCED NAUSEA AND VOMITING**

The main modalities of cancer treatment are Chemotherapy, Radiation therapy and Surgery. In that Chemotherapy treatment which also cause side effects in cancer patients. According to Bhawan Gupta et al. (2016) conducted a study to assess the effectiveness of Progressive Muscle Relaxation in reducing nausea and vomiting in chemotherapy patient. His study result shows that highly significant different in pre-intervention and post-intervention nausea and vomiting level in experimental and control group. PMR is effective in reducing the nausea and vomiting due to chemotherapy.

## **1.2 NEED FOR THE STUDY**

Chemotherapy is treatment that uses drugs (either alone or in combination) to treat cancer. There are many different kinds of chemotherapy drugs.

Nausea and vomiting are common distressing side effects of anti-cancer therapy. The degree of nausea and vomiting while getting chemotherapy depends on many things. That is the type of chemo drugs used; The dose of the drugs; When and how often the drug is given; How the drugs are given; if other drugs are in use (such as pain medications). Chemotherapy related nausea and vomiting is classified as Acute Nausea and Vomiting, Usually happens a few minutes to hours after chemo. Delayed Nausea and vomiting starts more than 24 hours after chemo and upto 5-7 days after treatment. Anticipatory nausea and vomiting is a learned or conditional response. Other types are Breakthrough nausea and vomiting and Refractory vomiting.

According to International Agency for research on cancer (IARC), They estimated the global burden of cancer in that 18.1 million new cases and 9.6 million death are reported.1 in 5 men and 1 in 6 women develop cancer during their lifetime.1 in 8 men and 1 in 11 women die from such diseases.5-year prevalence, is estimated to be 43.8 million.

Global pattern shows that for men and women combined, nearly half of the new cases and more than half of the cancer death worldwide in 2018 are estimated to occur in Asia, in part because the region has nearly 60% of the global populations.

In India, new cases are 11,57,294 lakhs and cancer related death are 7,84,821 are reported. In that males are 4,13,519 lakhs and females are 3,71,302 are reported.

The study by Gayathri Baburaj et al. (2018) A prospective study in which they concluded that the incidence of CINV was high. Among the study population, the incidence of nausea post-chemotherapy was 69.5% of which 54% for acute and 15.5% for delayed. The incidence of vomiting post-chemotherapy was 46% in which 36.5% for acute and 9.5% for delayed, whereas in other study, the incidence of nausea post-chemotherapy was found to be 65.38% and vomiting 50%

In Chennai,80,999 cases were reported. Cancer associated with the use of tobacco, 40.7% proportion.

Overall studies shown that by the implementation of Progressive Muscle Relaxation, there is the reduction of nausea and vomiting and there is the evidence of reduction in mood disturbances.S. Bhatnagar, by utilizing Cochrane databases, the information which concise of all the Complementary Alternative Medicine especially Hypnosis, Relaxation technique, Progressive Muscle Relaxation, Distraction and Guided Imagery are also used to reduce pain and allay anxiety. Its role also in managing chemotherapy induced acute vomiting. It might be considered for relief of opioid induced nausea and vomiting.

The findings suggest that PMRT is a useful adjuvant technique to complement antiemetics for Chemotherapy-induced nausea and vomiting and that incorporates of such interventions in the care plan can enhance the standards of care of cancer patients who experience side effects of chemotherapy.

In Rajiv Gandhi Government General Hospital approximately 200 new patients are admitted with diagnosis of some types of cancer daily. The main modalities of treatment are chemotherapy, Radiation therapy and Surgical management. Approximately 100-150 patients are attending the outpatient department of medical oncology daily, of which 40-60 patients are admitted for chemotherapy per day. The type of

chemotherapy drugs, its dosage and frequency are determined by the type of cancer, stage of cancer and associated comorbidities. Approximately 60-70% of patients develop nausea and vomiting during chemotherapy cycle in spite of administration of anti-emetic drugs.

During my clinical experience, researcher came across many oncology patients and also known about their sufferings. In addition to that the researcher also saw her neighbour, 25 years old Female was suffering with Brain tumor and got treatment. During the course of treatment of Oncology patient, the researcher found that most commonly occurring distress symptoms such as nausea and vomiting even though the patient had the antiemetic protocol.

In order to reduce the distressing symptoms, the researcher conducts wide range of search through thorough and in depth analysis of books, articles, thesis and journals. The researcher found that the alternative therapy (i.e.,) Progressive Muscle Relaxation significantly reduces nausea and vomiting.

So, the researcher taught and demonstrate Progressive Muscle Relaxation Technique to the cancer patient admitted in Oncology ward in an effort to reduce nausea and vomiting.

Nurses possess the ability to educate patients undergoing potentially emetogenic therapy regarding possible risk factors and risk modifications, non-pharmacological treatment and potential side effects from prescribed antiemetics. Assessment, Communication, and education are key nursing roles in the successful treatment of CINV.

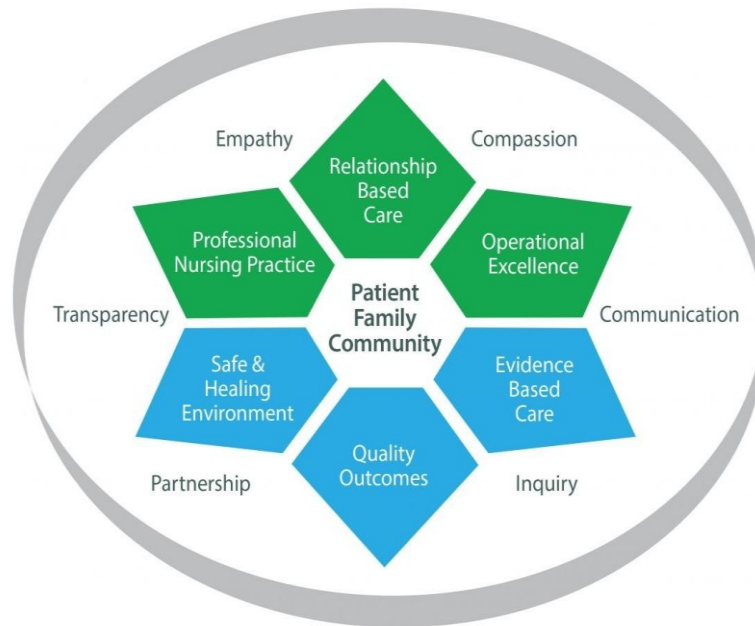
Further, health professionals especially nurses may spend considerable time in providing practical and emotional support for cancer patients and it is very frustrating for them when symptoms such as nausea and vomiting may be viewed as a challenge for the oncology

nurses. Therefore, in view of the close relationship between physiological and psychological factors, psychobehavioural techniques such as Progressive Muscle Relaxation Training (PMRT) could be used to decrease nausea and vomiting.

**Patient Care Delivery (Care Delivery Model)** at Allegheny Health Network is centered on the Relationship Based Care (RBC) model. This model is an integral part of our professional practice. We provide a healing environment that embodies the commitment, we have with patient, family, community and health care team. This creates a human connection with people in our care. RBC focuses on the relationship between patients and their families and members of the clinical team.

The six diamonds represent the elements essential to **the implementation of Relationship Based Care.**

**FIG NO.1.3 CARE DELIVERY MODEL**



Based on the care delivery model, the professional nursing practice component is insisted in this study. The researcher insists that

the **Practice of Progressive Muscle Relaxation** to be taught and demonstrated to the oncology patient in order to reduce nausea and vomiting induced by chemotherapy agent.

### **1.3 STATEMENT OF THE PROBLEM**

“A study to assess the effectiveness of progressive muscle relaxation technique in reducing nausea and vomiting for cancer patients receiving chemotherapy in Oncology Ward at Rajiv Gandhi Government General Hospital, Chennai-03”.

### **1.4 OBJECTIVES**

- 1) To assess the post-intervention level of chemotherapy induced nausea and vomiting in the control and experimental group.
- 2) To assess the effectiveness of Progressive Muscle Relaxation technique among chemotherapy patients in oncology ward for experimental group. (Post-interventional level)
- 3) To associate the effectiveness of post intervention score with selected demographical variables.

### **1.5 OPERATIONAL DEFINITIONS**

#### ***1. Assess***

In his study it refers to the process of documents about the effectiveness of Progressive Muscle Relaxation Technique.

#### ***2. Effectiveness***

This term refers to the significant reduction in nausea and vomiting during chemotherapy.

#### ***3. Progressive Muscle Relaxation***

It refers to step by step relaxation in which there is tensing and relaxing each muscle group of the body, one group at a time from head to foot or vice-versa.



#### **4. Nausea**

Unpleasant sensation of urge to vomiting due to the effect of chemotherapeutic drugs.

#### **5. Vomiting**

Throwing up or forceful projection of stomach content due to the effect of chemotherapy.

#### **6. Chemotherapy**

Chemotherapy is a medication to treat cancer.

### **1.6. ASSUMPTIONS**

The study is based on the following assumptions.

Progressive Muscle Relaxation technique will reduce nausea and vomiting (In addition with Anti-Emetic)

### **1.7 RESEARCH HYPOTHESIS**

H1: There will be significant difference in episodes of nausea and vomiting between experimental group and control group after the progressive muscle relaxation.

H2: There will be significant association between post intervention level of nausea and vomiting with selected demographical variables.

### **1.8 DELIMITATIONS**

The study is limited to

- 1) The data collection period is only 4 weeks.
- 2) Study is limited to only 60 samples.

- 3) The study is only conducted in Medical Oncology ward, Rajiv Gandhi Government General Hospital, Chennai-03.

## **1.9 CONCEPTUAL FRAMEWORK**

Theoretical and conceptual framework play a several interrelated roles in progress of science. Their overall purpose is to make research findings more meaningful and generalisable. Theories allows the researchers to knit together the observations and facts into an orderly scheme. They are efficient mechanisms for drawing together accumulated facts. The linkage of findings into coherent structure can make the body of accumulated evidence more accessible and thus more useful.

A conceptual model framework deals with the concept of the research problems as assembled together to provide certain frame of reference. The framework helps and guides the researcher to gain insight into the problems by explaining the relationship between the facts.

To describe the relationship of concepts in the study, Open System Model by J.W. Kenny' s was used. Open system model serves as a model for reviewing people as interacting with environments. "Open system model is a set of related definition, assumption and prepositions which deals with reality as an integrated hierarchy." System model focuses each system as a whole, but pays particular attention to the interaction of its part or subsystems. A system is a group of elements that interact with one another in order to achieve a goal.

The following are the major concepts of the study:

### **INPUT**

Input is the matter, energy and transformation that enters the system. In the present study, the input is the characteristics of the subjects like Age, Gender, Educational qualification, Occupation,

Income, Type of family, Marital status, Language known, Duration of chemotherapy treatment and Previous history of chemotherapy induced nausea and vomiting.

## **THROUGHPUT**

Throughput is the use of biological, psychologic and socio-cultural subsystems to transform the inputs. Throughput was the teaching and demonstration of Progressive Muscle Relaxation technique along with standard antiemetic protocols for the subjects in the experimental group.

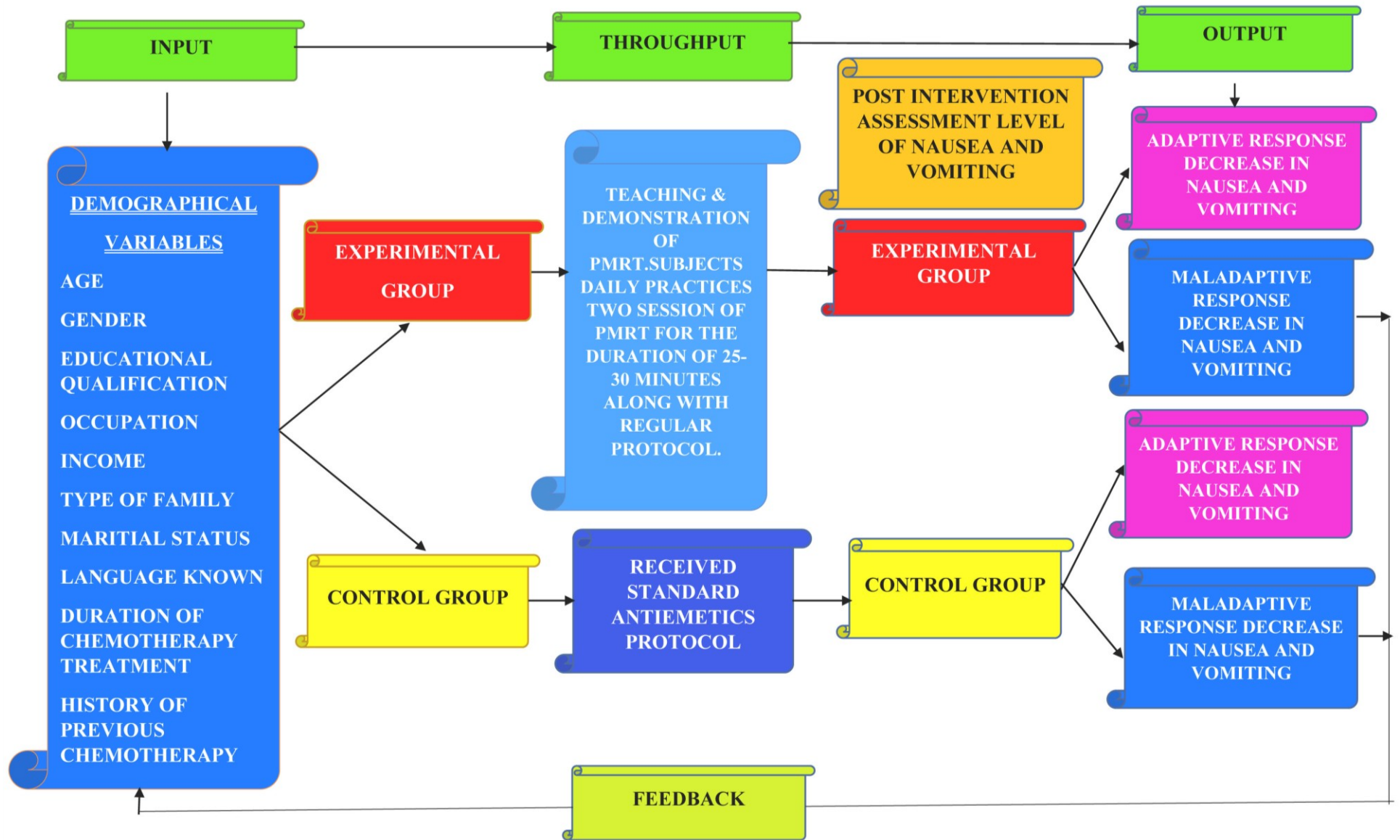
## **OUTPUT**

Output is the return of matter, energy and information to the environment in the form of both physical and psychological behaviour. The expected outcome was obtained by assessing level of nausea and vomiting using Rhodes index of nausea and vomiting scale in the experimental and control group. Throughput was considered in terms of differences in the level of nausea and vomiting between the experimental and control group.

## **FEEDBACK**

The difference in the level of nausea and vomiting between the experimental and control group was observed. In the present study, the feedback was considered as a process of maintaining the effectiveness of Progressive Muscle Relaxation. It was assessed by comparing the scores of experimental and control group using students independent t-test. The effectiveness of Progressive Muscle Relaxation was also tested between the obtained scores of the samples with their demographic variables with Pearson chi-square test.

**FIG.NO.1.4. CONCEPTUAL FRAMEWORK J.W. KENNYS OPEN SYSTEM MODEL**



## **CHAPTER-II**

### **2.1 REVIEW OF LITERATURE**

**According to Bloomsburg university, review of literature** is a comprehensive summary of previous research on a topic. The literature review surveys scholarly articles, books and other sources relevant to a particular area of research. The review should enumerate, describe, summarize, objectively evaluate and clarify this previous research.it should give a theoretical base for the research and help the researcher to determine the nature of research.

**This section consists of four parts**

2.1.1. Studies related to cancer prevalence.

2.1.2. Studies related to side effects of chemotherapy.

2.1.3. Studies related to application of Progressive Muscle Relaxation.

2.1.4. Studies related to implementation of Progressive Muscle Relaxation in controlling side effects caused by chemotherapy.

#### **2.1.1. STUDIES RELATED TO CANCER PREVALENCE**

*Freddie Bray et al. (2019)* Global cancer statistics 2018, this article provides a status report on the global burden of cancer worldwide using the GLOBOCON 2018 estimates of cancer incidence and mortality produced by the International Agency for research on cancer with a focus on geographical variability across 20 world region. There will be estimated 18.1 million new cancer cases and 9.6 million cancer deaths in 2018.In both sexes combined, lung cancer is the most commonly diagnosed cancer (11.6% of the total cancer) and the leading cause of cancer death(18.4% of the total cancer deaths),followed by female breast cancer(11.6%),prostate cancer(7.1%) and colorectal cancer(6.1%),

stomach cancer (8.2%) and liver cancer (8.2%) for mortality. Thus concluded that cancer is an important cause of morbidity and mortality all over the world.

***Nancy Glory Davidson et al. (2018)*** Risk factors of primary lung cancer among females: Lung cancer is fast emerging to be a leading cause of cancer mortality, both in developing and developed countries alike. Cross-sectional study was carried out for a period of 15 months among the female outpatients who were suspected of lung cancer and confirmed as any one of the types of primary lung cancers by histopathological diagnosis. The mean age of the study participants was 49 years. Breathlessness was present in 51.6% of the participants, while cough and chest pain were present in 13 patients (41.9%) each, Exposure to ETS (Environment, Tobacco, Smoke) was present in 14 patients (45.2%), Genetics (16.1%) in 5 patients. Thus concluded that occupational pollutants and radiation have an additive effect in the background of genetic predisposition in the causation of lung cancer in females.

***Soumya Swaroop Sahoo et al. (2017)*** An overview of cancer registration in India: Present status and future challenges: Cancer registration is pivotal for cancer epidemiology and for planning and implementation of cancer policy and research. Morbidity and mortality burden of cancer in India is one of the Highest in the world. The cancer registration in India has expanded including many new hospitals-based and population-based cancer registers. New initiatives such as cancer atlas and online software programmes have been started for streamlining the process. Thus conclude that India has made slow but substantial improvement in cancer registration in recent times.

***Lindsey A Torse. (2015)*** According to Global Cancer Statistics, Cancer constitutes an enormous burden on society in more or less

economically developed countries alike. The occurrence of the cases increases because of the growth and aging of the populations. GLOBOCAN 2012, produced by the IARC, were used. GLOBOCAN provides estimates of cancer incidence, mortality and prevalence worldwide, and for countries and regions. An estimated 14.1 million new cases and 8.2 million cancer death occurred in 2012 worldwide, lungs and breast cancer are the most frequently diagnosed cancer and leading causes of cancer death in both sex. Thus conclude that a substantial portion of cancer cases and deaths could be prevented by broadly applying effective preventive measures, such as tobacco control, vaccination and the use of early detection tests.

*A. Gupta et al. (2015)* Breast cancer awareness among women in India: Breast cancer is the most common female cancer worldwide including India, where advanced stages at diagnosis and rising incidence and mortality rates, make it essential to understand cancer literacy in women. A structured literature search using combined keywords was undertaken on bibliographic databases including MEDLINE, Cochrane database of systematic reviews, Cumulative Index to Nursing and Allied Health (CINAHL) and Scopus. A total of 7066 women aged 15-70 years showed varied levels of awareness on risk factors such as family history (13-58%), reproductive history (1-88%) and obesity (11-51%). This review revealed low cancer literacy of breast cancer risk factors among Indian women, irrespective of their socio-economic and educational background.

### **2.1.2. STUDIES RELATED TO SIDE EFFECTS OF CHEMOTHERAPY**

*G.Dranitsaris et al. (2017)* Cycle based model to predict the risk of  $\geq$  grade 2 CINV ( $\geq 2$  vomiting episodes or a decrease in oral intake due to nausea) from days 0 to 5 post-chemotherapy was developed. Data from 1198 patients enrolled in one of the five non-interventional CINV

prospective studies were pooled. Generalized estimating equations were used in a backwards elimination process with the *P*-value set at  $<0.05$  to identify the relevant predictive factors. Over 4197 chemotherapy cycles, 42.2% of patients experienced  $\geq$ grade 2 CINV. Eight risk factors were identified. This prediction tool will be an important source of individual patient risk information.

***Silvia Sommariva et al. (2016)*** A systematic review: Chemotherapy-induced nausea and vomiting (CINV) is a particularly distressing event for oncology patients. This review aims at analysing the impact of CINV on Health-Related Quality of Life (QoL) and on the use of healthcare resources. A systematic search was conducted according to the PRISMA statement on MEDLINE, EMBASE and NHS EED. Sixty-seven studies were included in the final selection. Despite the availability of numerous treatment options, CINV was found to have a strong impact on HRQoL of patients. Evidence supports the notion that CINV continues to have a negative impact on HRQoL of patients, even for those receiving moderately emetic chemotherapy.

***Alexander Molassiotis et al. (2016)*** Conducted to evaluate risk factors for AN and assess its impact on CINV development. They analysed data ( $n = 991$ ) from a prospective observational multisite study in eight European countries over three cycles of chemotherapy. History of nausea/vomiting (Yes/No), patient expectation of CINV (0–100 mm visual analog scale, [VAS]), and prechemotherapy anxiety (0–100 mm VAS) also were collected before chemotherapy. A patient-completed diary during each chemotherapy cycle obtained information on AN in the 24 hours before chemotherapy administration and nausea and vomiting (episodes of vomiting and severity of nausea) daily for five days after administration of chemotherapy (0–100 mm VAS). AN was reported by 8.3%–13.8% of patients, increasing in frequency and intensity over each cycle. AN is a challenging symptom, and its



prevention needs to consider better CINV prevention in the previous cycles as well as managing prechemotherapy anxiety.

*Anita R. Peoples et al. (2016)* Cancer-related fatigue (CRF) is a prevalent and distressing side effect of cancer and its treatment that remains inadequately understood and poorly managed. The objectives of this study were to examine the prevalence, severity, and potential predictors for the early onset of CRF after chemotherapy cycle 1 in breast cancer patients. We report on a secondary data analysis of 548 female breast cancer patients from a phase III multi-center randomized controlled trial examining antiemetic efficacy. CRF was assessed by the Brief Fatigue Inventory at pre- and post-chemotherapy cycle 1 as well as by the four-day diary. This study showed a high prevalence (75%) of clinically relevant CRF in breast cancer patients following their initial chemotherapy, and that nausea severity, disturbed sleep, pre-treatment CRF, and age were significant predictors of symptom.

*Alexandre Chan et al. (2015)* Longitudinal analysis: Some patients experience nausea and/or vomiting (NV) before receipt of chemotherapy. The study objective was to evaluate the impact of prior chemotherapy-induced NV (CINV) on the incidence of anticipatory NV in later cycles. This multicentre, prospective non-interventional study enrolled chemotherapy-naive adults scheduled to receive highly or moderately emetogenic chemotherapy (HEC/MEC) for cancer in six Asia Pacific countries, excluding those with emesis within 24 h before cycle 1 chemotherapy. Multivariate logistic regression was used to assess the impact of prior CINV on anticipatory NV in cycles 2 and 3. This study highlight the importance of preventing CINV in cycle 1 to reduce anticipatory NV in subsequent cycles.

### **2.1.3. STUDIES RELATED TO APPLICATION OF PROGRESSIVE MUSCLE RELAXATION IN CONTROLLING NAUSEA AND VOMITING MANIFESTED AS SIDE-EFFECTS OF CHEMOTHERAPY**

*Behnam Masmouri et al. (2019)* Conducted the study is to investigate the effect of relaxation technique on self-efficacy of patients suffering from cancer. Clinical trial in which 80 patients suffering from cancer were randomly assigned to two groups of experimental and control group. Data collection instruments consists of demographic information and strategies used by people to promote health questionnaires. In the experimental group, the patient performed relaxation techniques once a day for 30 min of two months.in control group, the patients receives the routine care. A statistically significant difference was observed between the mean self-efficacy indices in the experimental group( $P=0.001$ ). There was no significant difference in the control group( $P=0.3$ ). Muscle relaxation can enhances self-efficacy of cancer patients. Therefore, it can be used as an alternative method for patients who are willing to use this technique.

*Bern Kurt et al. (2018)* Conducted the study is to determine the effect of PMR on chemotherapy symptoms in patients with breast cancer who were undergoing adjuvant chemotherapy. Non-Randomized controlled trail, Open-label, Parallel group experimental research design was used. They selected 49 breast cancer patients in which 25 of them under experimental group and remaining 24 of them in control group. The intervention group received instruction in relaxation exercises from the researcher in the clinic. They practiced in the hospital with the researcher in the clinic, and individually applied the exercise at home. The result is that the severity of pain, fatigue, nausea, sadness, shortness of breath, changes in skin, nails and mouth ulcers were significantly less in the intervention group than in the control group. Relaxation exercise

had a positive effect on reducing the symptoms resulting from adjuvant chemotherapy.

***Eran Ben Arye et al. (2018)*** Conducted to examine the impact of a complementary/integrative Medicine(CIM) Program on QoL related concerns among patients scheduled for chemotherapy for breast and gynaecological cancer.56 patients were selected among them 31 are in experimental group and 24 are there in control group.in intervention program, they used to taught PMR.Assessment of quantitative outcomes was conducted during the week before chemotherapy; at 24 Hours before and after the treatment; and at 1 week post treatment. The tools used to evaluate are The Edmonton Symptoms Assessment Scale (ESAS), Measures Yourself Concerns and Well Being Questionnaire (MYCWQ) and ATLAS.Ti software is used to analyse the collected data. Reduce the severity of fatigue, depression and impaired wellbeing.

***August Kapogiannis MS et al. (2018)*** Conducted the study aim is to systematically review the current state of knowledge regarding the effects of the PMR, GI combination on cancer patients receiving chemotherapy. A search for relevant records was carried out in 4 electronic databases (AMED, Cochrane library, PubMed and Scopus),342 publications were screened and 71 was considered as potentially relevant. The flow of information of this study was in line with the PRISMA statement. The trials quality was assessed using the Jaded scale. PMR, GI combination is an effective way to tackle the impact of nausea and vomiting and to improve patient's mental state.

***Hacer Alan Dikmen et al. (2018)*** Conducted the study to investigate the effect of reflexology and PMR exercises on pain, fatigue and QoL of gynaecological cancer patients during chemotherapy. By randomization 80 participants were selected in which four groups are divided which consists of reflexology alone, PMR Exercise alone, Both

reflexology and PMR exercise and Control group exists. the tools used are general data collection, Brief pain and fatigue inventories, multidimensional Quality of Life scale to assess the outcome. Reflexology and PMR exercise given to the gynaecological cancer patient during chemotherapy were found to decrease pain and fatigue and increase QoL.

***D.Luo. (2017)*** Conducted the study is to assess the effectiveness of PMR training in reducing the nausea and vomiting by Highly emetogenic chemotherapy in Chinese lung cancer patients.72 chemotherapy naïve lung cancer patients were participated.36 are there in experimental group and 36 in control group. Experimental group received PMRT 1hour before and after chemotherapy with cisplatin for 3 days and daily thereafter for another 4 days. Twice a day for the duration of 25 minutes. the tools used are MASCC Antiemesis tool (MAT) which was used daily for 7 post chemotherapy days. The use of PMRT considerably reduces the vomiting episodes and nausea intensity in the experimental group compared with the control group. Thus the nausea and vomiting is reduced by practicing PMR.

***Panagiotis Pelekasis et al. (2017)*** The study main aim is to review the evidence regarding the use of PMR as a supportive intervention for cancer patients undergoing chemotherapy treatment.6 Databases were electronically searched AMED, the Cochrane library, MEDLINE, psychoINFO, Scopus and the web of science.700 Publications were screened. Out of them 57 identified as potentially relevant. The PRISMA statement is followed in flow of information.in inclusion criteria, the use of PMR as an intervention alone. In exclusion criteria, studies that combined PMR with other intervention. Methodological quality of included trials was assessed using the Jaded scale and the CONSORT guidelines. The result indicates that PMR

might improve comfort and reduce the anxiety level and side effects caused by chemotherapy such as nausea, vomiting and fatigue.

*Asli Niyazi et al. (2017)* Conducted the study to evaluate the effectiveness of PMR, by which several physical and psychological side effects including fatigue, nausea, vomiting, pain and anxiety which decreases the patients Quality of Life (QoL). Two interventional and control group and two pre-test and post-test designs are employed. 30 patients were selected in state hospital by randomization in which 15 patients under the experimental group and 15 patients under the control group. The tools used are Demographic Questionnaires, the Beck Anxiety Inventory (BAI), the Short Form of the McGill Pain Questionnaire (SF-MPQ), the Fatigue Symptom Inventory (FSI), The Morrow Assessment of Nausea and Vomiting (MANE). The result shows that there is decrease in pain, anxiety, nausea and vomiting. PMR is effective relaxation technique in reducing anxiety, pain and side effects of chemotherapy.

*Mohren Shahriari et al. (2017)* The study is to assess the effect of Progressive Muscle Relaxation, Guided Imagery and Deep Diaphragmatic Breathing on Quality of Life in elderly with breast or prostate cancer. The Randomized Controlled Trail is employed. 50 elderly patients were selected with breast cancer or prostate cancer. European organization for research and treatment of cancer and QoL Questionnaire were utilized. The data was analysed by analysed SPSS Package. There was statistically significant improvement in QoL ( $p < 0.001$ ) and Physical functioning and Physical functioning ( $P < 0.001$ ) after PMR, GI and DDB intervention. The conclusion is that the findings indicated that concurrent application of PMR, GI and DDB would improve QoL in the elderly with breast or prostate cancer.

***Paula Paras Bravo et al. (2017)*** The aim is to determine the impact of a relaxation protocol on improving Quality of Life(QoL) in a sample of oncology patients treated in the selected hospitals. It is a multicentred interventional study without a control group. 272 patients with different oncology pathology were selected for the study from 10 Spanish public hospitals. They were followed by weekly telephone calls to each patient over a 1 month period. Patients' quality of life was assessed using the Functional Assessment of Cancer Therapy, General (FACT-G) Questionnaire. Bivariate and univariate analysis were performed along with an analysis of multiple correspondences to identify subgroups of patients with similar situations on the FACT-G. The conclusion is that the patient with cancer who learned and practiced PMR experienced improvement in their perceived QoL as measured by FACT-G.

***Andreas Charalambous et al. (2016)*** conducted the study to reflect the gap in the literature and aimed to test the effectiveness of guided imagery (GI) and PMR on a cluster of symptoms experienced by patients undergoing chemotherapy. Randomized Control Trial, 208 patients were selected. They are equally assigned either in the intervention or control group. The intervention is for four weeks. Patients were assessed for pain, fatigue, nausea and vomiting and retching, anxiety and depression. The variables are assessed by self-reported Health Related Quality of Life-HR-QoL, Chi-Square test ( $\chi^2$ ), Independent t test, Linear Mixed Model. The conclusion is that GI and PMR can be effective in the management of a cluster of symptoms in cancer patients receiving chemotherapy.

***Bhawan gupta et al. (2016)*** Cancer killed 5,56,400 people in the country in 2010 accounted for 8% total deaths. The study is to assess the effectiveness of progressive muscle relaxation technique on physical symptoms among cancer patients receiving chemotherapy. 60 samples

those who availing chemotherapy treatment are selected by purposive sampling technique for this study.30 are in experimental and remaining in control group. The tools applied to evaluate are A modified graphical rating scale is to assess nausea, Common toxicity criteria is to assess vomiting, standardized 0-10 Numerical Pain rating scale.PMR is taught and practiced to the experimental group. Result shows that highly significant difference in pre-intervention and post-interventional physical symptoms of experimental and control group.PMR is effective in reducing the physical symptoms due to chemotherapy.

*Muzeyyen Aeslan et al. (2015)* Conducted the study to criticize that the Complementary and alternative therapy methods used in the management of chemotherapy induced nausea and vomiting. Patients with cancer apply for complementary medicine methods for the ineliminable symptoms such as nausea and vomiting. The primary complementary and alternative medicine that cancer patients frequently use were herbal products, relaxation and meditations. Nurses need to be knowledgeable about these practice in order to achieve their goal, guide the patients to use complementary method based on evidence, prevent harmful effects and abuse of patients.

*S. Semmalar et al. (2015)* Conducted the study to assess the effectiveness of Progressive Muscle Relaxation (PMR) technique in reducing the levels of Anxiety, Nausea and Vomiting for cancer patients receiving chemotherapy. Evaluative research approach was used to conduct this study Quasi experimental research design was adopted for the research design.50 samples are selected based on the purposive sampling technique from two different hospitals. The tools used are instruments (Demographical variables, State anxiety inventory from I and Duke descriptive scale for nausea and vomiting). PMR can be an effective non-pharmacological intervention to reduce the side effect, In addition to many beneficial effects of PMR on the human body.

*Shu-fen Chen et al. (2015)* The study aim is to evaluate the effect of relaxation with guided imagery on patient with breast cancer. A two group Pre-test-Post test, Quasi experimental design was used. Randomized Controlled Trial was employed. 65 breast cancer patients were randomly assigned to either n=32 in experimental group and n=33 in control group. Both groups received chemotherapy self-care education, but the experimental group also received relaxation and guided imagery training. The training on relaxation with GI was conducted before chemotherapy. Comparing the two groups, statistically significant difference were found in the overall symptom distress. Relaxation with guided imagery had a positive effect on mediating anxiety, depression and physical symptoms in breast cancer patients.

#### **2.1.4. STUDY RELATED TO IMPLEMENTATION OF PROGRESSIVE MUSCLE RELAXATION IN CONTROLLING SIDE EFFECTS CAUSED BY CHEMOTHERAPY**

*Amini et al. (2018)* Insomnia, anxiety, and fatigue are more common in haemodialysis patients than in healthy people and affect patients' quality of life. To evaluate the effectiveness of progressive muscle relaxation (PMR) and aerobic exercise on anxiety, sleep quality, and fatigue in patients with chronic renal failure undergoing haemodialysis were evaluated. In this double-blind clinical trial, 100 haemodialysis patients were randomly assigned to three groups. Data were analysed by Stata software. PMR program significantly decreased general anxiety, trait anxiety, state anxiety, and Beck anxiety and aerobic exercise significantly reduced beck anxiety. PMR program and aerobic exercise both significantly improved sleep quality in haemodialysis patients. PMR program significantly reduced Rhoden fatigue but did not affect Piper fatigue. Aerobic exercise had no effect on Rhoden and Piper fatigue. Results showed better function of PMR compared to aerobic exercise in improving the symptoms of anxiety, sleep disorders, and fatigue in haemodialysis patients.



**Andreas Charalambous et al. (2017)** To explore the effect of Progressive Muscle Relaxation (PMR) and Guided Imagery (GI), in reducing anxiety levels among parents of children diagnosed with any type of malignancy receiving active treatment at a Paediatric Oncology Unit in Republic of Cyprus and in Greece. A randomized non-blinded control trial was conducted between April 2012 to October 2013, at two public paediatric hospitals. Fifty-four eligible parents of children hospitalized with a malignancy were randomly assigned to the intervention (PMR and GI) ( $n = 29$ ) and a control group ( $n = 25$ ). The study evaluated the changes in anxiety levels (HAM-A) and mood changes (POMSb). This study concludes that the positive effect of the combination of PMR and GI in reducing anxiety and improving mood states in parents of children with malignancy.

**Kaina Zhou et al. (2015)** To examine effects of music therapy and progressive muscle relaxation training on depression, anxiety and length of hospital stay in Chinese female breast cancer patients after radical mastectomy. A total of 170 patients were randomly allocated to the intervention group ( $n = 85$ ) receiving music therapy and progressive muscle relaxation training for twice a day plus routine nursing care and the control group ( $n = 85$ ) receiving routine nursing care. A general linear model with univariate analysis showed that the intervention group patients had significant improvement in depression and anxiety. Music therapy and progressive muscle relaxation training can reduce depression, anxiety and length of hospital stay in female breast cancer patients after radical mastectomy.

**Stefano Bruneli et al. (2015)** Music therapy and progressive muscle relaxation training can reduce depression, anxiety and length of hospital stay in female breast cancer patients after radical mastectomy. Randomized controlled prospective trial with 2 parallel groups. The experimental group performed combined training of progressive muscle

relaxation, mental imagery, and phantom exercises 2 times/week for 4 weeks, whereas the control group had the same amount of physical therapy. The Prosthesis Evaluation Questionnaire and the Brief Pain Inventory were used to evaluate changes. Combined training of progressive muscle relaxation, mental imagery, and modified phantom exercises should be taken into account as a valuable technique to reduce phantom limb pain and sensation.

*Yunping Li et al. (2015)* Conducted to assess the effects of progressive muscle relaxation (PMR) on anxiety, depression, and quality of life (QOL) in patients with pulmonary arterial hypertension (PAH). One hundred and thirty Han Chinese patients with PAH were randomly assigned to a PMR group (n=65) and a control group (n=65). In a 12-week study duration, the PMR group received hospital-based group and in-home PMR practice, while the control group received hospital-based mild group stretching and balance exercises. In conclusion, this study suggests that PMR practice is effective in improving anxiety, depression, and the mental health components of QOL in patients with PAH.

## CHAPTER-III METHODOLOGY

Research methodology is a way to systematically solve the research problem. The scope of research methodology is wider than that of research methods. Thus, when we talk of research methodology we not only talk of the research methods but also consider the logic behind the methods we use in the context of our research study and explain why we are using a particular method or technique and why we are not using others so that research results are capable of being evaluated either by the researcher himself or by others.

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

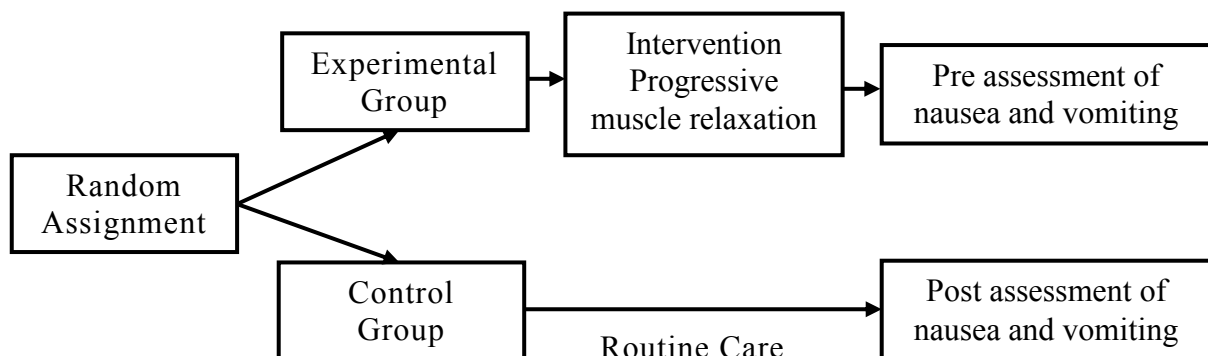
### 3.1. RESEARCH APPROACH

The research approach selected for the study is **Quantitative approach**.

### 3.2. RESEARCH DESIGN

The research design used in this study is **Randomized Contolled Trial**.

*Fig. No.3.1. Post-test only control group design*



## **EXPERIMENTAL GROUP**

Subjects who receive progressive muscle relaxation along with antiemetic protocol.

## **CONTROL GROUP**

Subjects who receives standard antiemetic protocols.

### **3.3. DURATION OF THE STUDY**

Four weeks from 02.02.2019 to 04.03.2019.

### **3.4. SETTINGS OF THE STUDY**

The study was conducted in Male and Female Medical Oncology Ward, Department of Medical Oncology, Rajiv Gandhi Government General Hospital, Chennai-03. Department of Medical Oncology has two male and two female medical Oncology ward with approximately 60 patients.

### **3.5. STUDY POPULATION**

**3.5.1.** The study population includes patients who were receiving highly emetogenic chemotherapy drugs for minimum three days in the male and female medical oncology ward, Rajiv Gandhi Government General Hospital, Chennai-03.

**3.5.2.** Who are available at the time of data collection in selected wards.

### **3.6. SAMPLE**

The sample consists of patients who fulfil the inclusion criteria were selected from the male and female medical oncology ward, Department of Medical Oncology, Rajiv Gandhi Government General Hospital, Chennai-03.

### **3.7.SAMPLE SIZE**

The sample size for this study was 60 patients receiving chemotherapy in medical oncology ward with 30 samples in experimental group and 30 samples in control group.

### **3.8. CRITERIA FOR SAMPLE SELECTION**

#### ***3.8.1. Inclusion Criteria***

- 1) Patient receiving day one chemotherapy.
- 2) Patients receiving chemotherapy for minimum of 3 days.
- 3) Patients who are on 2<sup>nd</sup> or above chemotherapy cycle.
- 4) Patients between the age group of 25-60 years.
- 5) Both male and female patient.
- 6) Patient who are willing to participate in the study.
- 7) Patient who are able to understand Tamil or English.

#### ***3.8.2. Exclusion criteria***

- 1) The patient with any other complication.
- 2) The patient with any other systemic illnesses.
- 3) The patient who have previously got Progressive Muscle Relaxation therapy session.

### **3.9. SAMPLING TECHNIQUE**

The samples were selected by probability sampling technique-simple random sampling-Lottery method is followed for selecting the samples. Each day from the newly admitted patients' basic details were collected and those who fulfil the inclusion criteria were selected and randomized into experimental and control group.

### **3.10. VARIABLES**

#### ***3.10.1. Independent Variables***

Progressive Muscle Relaxation technique.

#### ***3.10.2. Dependent Variables***

Level of chemotherapy induced nausea and vomiting.

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

The tools were developed after detailed review of literature and expert's opinion from the medical, nursing and psychology.

#### ***3.11.1. The Tool Comprises of***

##### ***Section-A***

Demographic variables which includes age in years, sex, educational status, occupation, income, type of family, marital status, dietary habits and personal habits.

##### ***Section-B***

Clinical data which includes clinical diagnosis, duration of illness, type of chemotherapy drugs, No. of chemotherapy days and No. of chemotherapy cycle.

##### ***Section-C***

Observational checklist of certain biophysiological parameters before and after Progressive Muscle Relaxation to know the outcome of Progressive Muscle Relaxation and it comprises of Pulse, Respiration and Blood Pressure.

##### ***Section-D***

Rhode's index of nausea and vomiting.

This scale is developed by Rhode's V.A. in the year of 1986. It is an 6-items instrument used to assess nausea and vomiting over the previous 12 hrs in patients receiving chemotherapy. Six 5-point self-report items measures the patient's perception of frequency, duration and distress of nausea and vomiting. The possible responses in the scale are presented in the same order. The Likert type scale for each item is scored from 0(indicating minimal or no symptoms) to 4(representing the worst symptoms). Item scores are summed for a total score with a range of 0-24.

The reliability of the tool is Cronbach's alphas and validity is Spearman's correlation coefficient.

### ***3.11.2. Scoring Procedure***

#### ***Section-A***

The demographic variables were coded to assess the subject for statistical analysis.

#### ***Section-D***

***Table-3.1: Scoring Procedure***

<b>S. No</b>	<b>CLASSIFICATION</b>	<b>SCORES</b>
1.	Mild Nausea and Vomiting	1-8
2.	Moderate Nausea and Vomiting	9-16
3.	Severe Nausea and Vomiting	17-24

### **3.12. CONTENT VALIDITY**

Content validity was obtained from professor and HOD, Department of medical oncology, Rajiv Gandhi Government General Hospital, Chennai-03 and also from two medical surgical nursing experts. The content validity was also obtained from psychologist.

Experts suggestions were incorporated in the tools.

### **3.13. RELIABILITY OF THE TOOL**

After pilot study reliability of the tool was assessed by using Test-retest method. Nausea and Vomiting score reliability was assessed using test retest method and its correlation coefficient is 0.82. The correlation coefficients are very high and it is good tool for assessing the effectiveness of Progressive Muscle Relaxation technique on Nausea and Vomiting among chemotherapy patients.

### **3.14. PROTECTION OF HUMAN RIGHTS**

Formal ethical clearance was obtained from the Ethical Committee before starting the study. All the subjects were explained about the study and informed consent was obtained from them. Subjects were given assurance that all the data collected will be kept confidential.

### **3.15. PILOT STUDY**

Formal permission was obtained from the professor and HOD of the department of medical oncology, Rajiv Gandhi Government General Hospital, Chennai-03. Pilot study was done for the period of 5 days. Totally 6 patients have been selected, among that 3 were allotted to the experimental group and 3 were allotted to the control group. Analysis of the study results showed positive effects of Progressive Muscle Relaxation on nausea and vomiting among experimental group when compared to control group. The study was practically feasible. Subjects who were selected and observed for pilot study were not included in the main study.

### **3.16. DATA COLLECTION PROCEDURES**

- 1) The study was conducted after obtaining approval from Institutional Ethics Committee.
- 2) Two samples per day in each group was selected by using lottery method.



- 3) The researcher was introduced herself and established rapport with the selected samples both in experimental and control group.
- 4) The researcher was explained about the study and informed consent was obtained from the samples both in experimental and control group.
- 5) The intervention of Progressive Muscle Relaxation Technique for the duration of 15 minutes and was implemented one hour before the administration of chemotherapy and daily thereafter for the following three days of chemotherapy.
- 6) The post test was conducted at end of chemotherapy cycle.

### **3.17. INTERVENTION PROTOCOL**

*Table No-3.2: Intervention Protocol*

Place	Rajiv Gandhi Government General Hospital, Chennai-03.
Intervention	Progressive Muscle Relaxation
Duration	Starting from day of admission, 25-30 minutes practice for twice a day.
Time	First session- at 8 am, Second session-at 4pm.
Recipient	Oncology patients
Administered by	The investigator

### **3.18. DATA ANALYSIS**

All the collected data were analysed using both descriptive and inferential statistics. The interpretations and findings were presented in tables and figures.

Demographic variables in categories were given in frequencies with their percentage.

Modified Rhodes index of nausea and vomiting scale score were given in mean and standard deviation.

Similarity between experimental and control group on demographic variables were analysed using Pearson chi-square test.

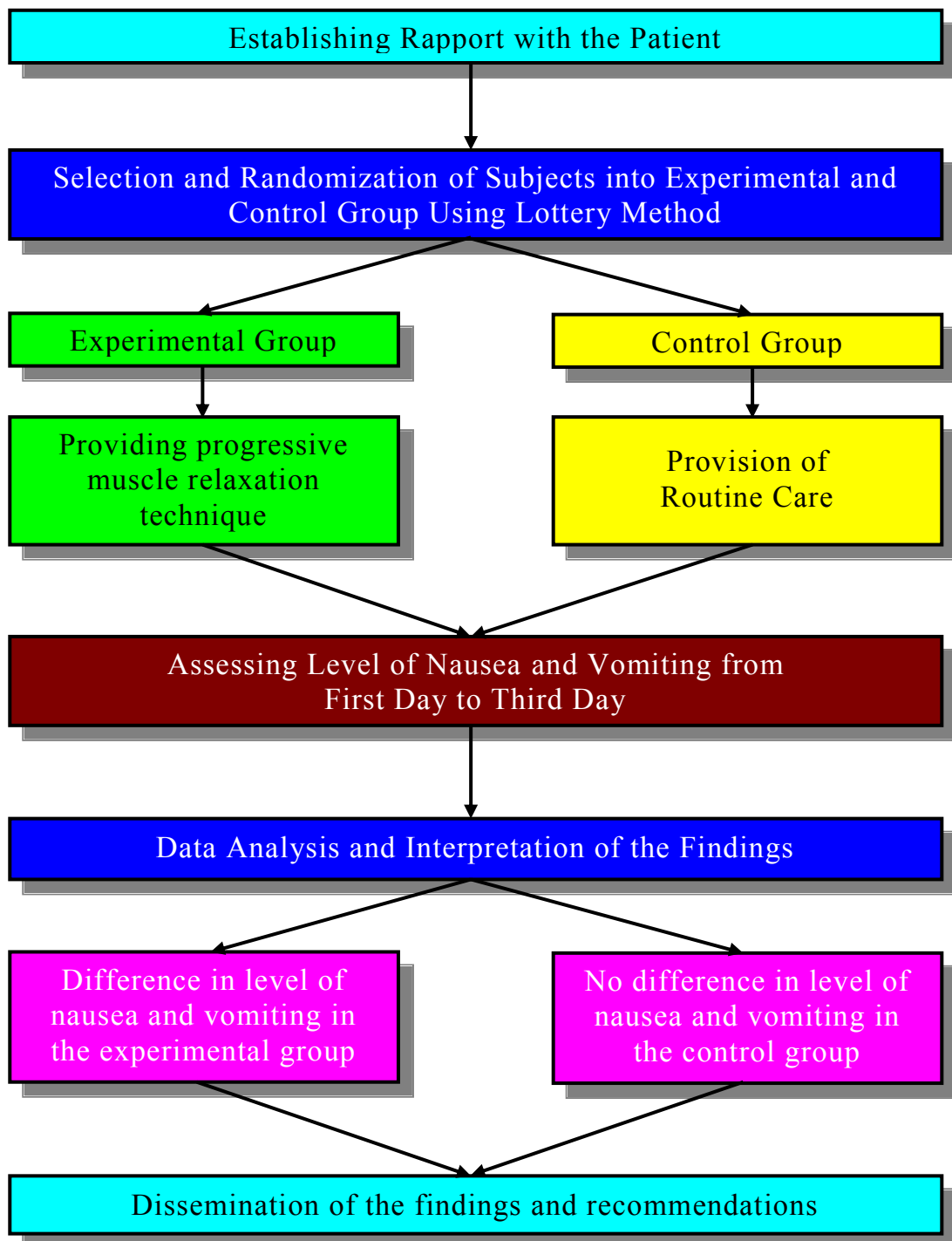
Association between demographic variables and nausea and vomiting score were analysed using Pearson chi-square test.

Quantitative nausea and vomiting score in experimental and control were compared using student's independent t-test.

Simple bar diagram, Multiple bar diagram, and Simple bar diagram with 2 standard error were used to represent the data.

$P < 0.05$  was considered statistically significant. All statistically test are two tailed test.

**FIG.NO.3.2. SCHEMATIC REPRESENTATION OF THE STUDY DESIGN**



## **CHAPTER-IV DATA ANALYSIS AND INTERPRETATION**

This chapter deals with the analysis and interpretation of data collected from the sample of 60 subjects who underwent chemotherapy.

### **ORGANIZATION OF DATA**

#### ***Section-A***

Distribution of demographic and clinical data.

#### ***Section-B***

Percentage distribution of nausea and vomiting in experimental and control group.

#### ***Section-C***

Analysis of Post intervention level of nausea and vomiting in experimental and control group.

#### ***Section-D***

Comparison of post intervention level of nausea and vomiting between Experimental group and control group.

#### ***Section-E***

Effectiveness of progressive muscle relaxation technique on nausea and Vomiting in the experimental group.

#### ***Section-F***

Association between level of nausea and vomiting with selected Demographic variables in experimental and control group.

## SECTION-A: DISTRIBUTION OF DEMOGRAPHIC AND CLINICAL DATA

*Table-4.1: Demographic Profile*

Demographic variables		Group			
		Experiment (n=30)		Control (n=30)	
		n	%	N	%
Age of the Client	25 -35 years	7	23.33%	5	16.67%
	36 -45 years	4	13.34%	7	23.33%
	46 -55 years	7	23.33%	9	30.00%
	56 -60 years	12	40.00%	9	30.00%
Gender	Male	15	50.00%	15	50.00%
	Female	15	50.00%	15	50.00%
Educational Qualification	Professionals	0	0.00%	0	0.00%
	Graduate or postgraduate	0	0.00%	0	0.00%
	Intermediate or post-high school diploma	1	3.33%	1	3.33%
	High school certificate	6	20.00%	7	23.33%
	Middle school certificate	7	23.33%	5	16.67%
	Primary school certificate	7	23.34%	14	46.67%
	Illiterate	9	30.00%	3	10.00%
Occupation	Legislators, Senior officials and managers.	0	0.00%	0	0.00%
	Professionals	0	0.00%	0	0.00%
	Technicians and associate professionals	2	6.67%	1	3.33%
	Clerk	1	3.33%	0	0.00%
	Skilled workers and shop and market sales workers	0	0.00%	0	0.00%
	Skilled agricultural and fishery workers	2	6.67%	6	20.00%
	Craft and related trade workers	5	16.67%	4	13.33%
	Plant and machine operators and assemblers	4	13.33%	4	13.33%
	Elementary occupation	15	50.00%	12	40.00%
	Unemployed	1	3.33%	3	10.00%
Income of the family	Below Rs.5,000	0	0.00%	0	0.00%
	Rs.5,000-Rs.10,000	24	80.00%	21	70.00%
	Rs.10,001-Rs.15,000	4	13.33%	7	23.33%
	Above Rs.15,000	2	6.67%	2	6.67%

Demographic variables		Group			
		Experiment (n=30)		Control (n=30)	
		n	%	N	%
Type of family	Nuclear family	23	76.67%	25	83.33%
	Joint family	7	23.33%	5	16.67%
	Extended family	0	0.00%	0	0.00%
Marital status	Married	25	83.34%	25	83.33%
	Unmarried	3	10.00%	2	6.67%
	Separated	1	3.33%	1	3.33%
	Widow/widower	1	3.33%	2	6.67%
Language known	Tamil	27	90.00%	27	90.00%
	English	0	0.00%	0	0.00%
	Both A and B	3	10.00%	3	10.00%
	Other Language	0	0.00%	0	0.00%
How long does the patient undergone chemotherapy treatment	For the past few months	25	83.33%	22	73.33%
	For the past one year	3	10.00%	3	10.00%
	More than one year.	2	6.67%	5	16.67%
Complaints of nausea and vomiting	Yes	29	96.67%	30	100.00%
	No	1	3.33%	0	0.00%

***Table no.4.1 predicts that***

Majority (40%) of the subjects were between the age group of 56-60 years in the experimental group and (30%) in the control group.

Half of the proportion (50%) of them were males in the experimental and control group and remaining (50%) were females in the experimental and control group respectively.

Majority (30%) of them are illiterate in experimental group and (46.67%) of them completed primary school education in control group.

Majority (83.34%) of them were married in both groups.

Majority (96.67%) in experimental group and (100%) in control group having the complaints of nausea and vomiting during chemotherapy.

**Table-4.2: Clinical Profile**

Clinical Variables		Group			
		Experiment(n=30)		Control(n=30)	
		n	%	N	%
Clinical diagnosis	Respiratory system	4	13.33%	4	13.33%
	Digestive system	13	43.33%	8	26.67%
	Reproductive system	8	26.67%	9	30.00%
	Others	5	16.67%	9	30.00%
Duration of illness	Less than 6 months	18	60.00%	16	53.33%
	6 months-2 years	10	33.33%	9	30.00%
	More than 2 years	2	6.67%	5	16.67%
Number of chemotherapy cycles	1-2 cycles	6	20.00%	8	26.67%
	3-4 cycles	15	50.00%	14	46.66%
	5-6 cycles	7	23.33%	6	20.00%
	> 7 cycles	2	6.67%	2	6.67%
Number of chemotherapy days	1-2 days	0	0.00%	0	0.00%
	3-4 days	29	96.67%	30	100.00%
	5-6 days	0	0.00%	0	0.00%
	> 7 days	1	3.33%	0	0.00%
Name of chemotherapy drugs	Docetaxel, cisplatin,5-Flurouracil	5	16.67%	2	6.67%
	Capecitabine, Oxaliciplatin	3	10.00%	3	10.00%
	Docetaxel, Adriamycin, cyclophosphamide	2	6.67%	5	16.67%
	5-Flurouracil, Oxaliciplatin, leucovorin	7	23.33%	4	13.33%
	Others	13	43.33%	16	53.33%

***Table 4.2 predicts that***

Majority (43.33%) of the subject had digestive system carcinomas (such as carcinoma in buccal mucosa, tongue, stomach, OG junction, rectosigmoid, gall bladder, rectum) whereas in control group (30%) of the subjects had reproductive system(carcinoma in breast, carcinoma in ovary, carcinoma in testis) and some other types (Hodgkin's lymphoma, Non- Hodgkin's lymphoma and sarcomas).

Majority (60%) of the subject in experimental group avail the chemotherapy treatment for the duration of less than 6 months and (53.33%) of the subjects in the control group avail the same treatment as experimental group.

Majority of subjects (50%) in experimental group undergone 3-4 cycles of chemotherapy and (46.66%) in control group undergone the same treatment as experimental group.



**Table-4.3: Observational Checklist**

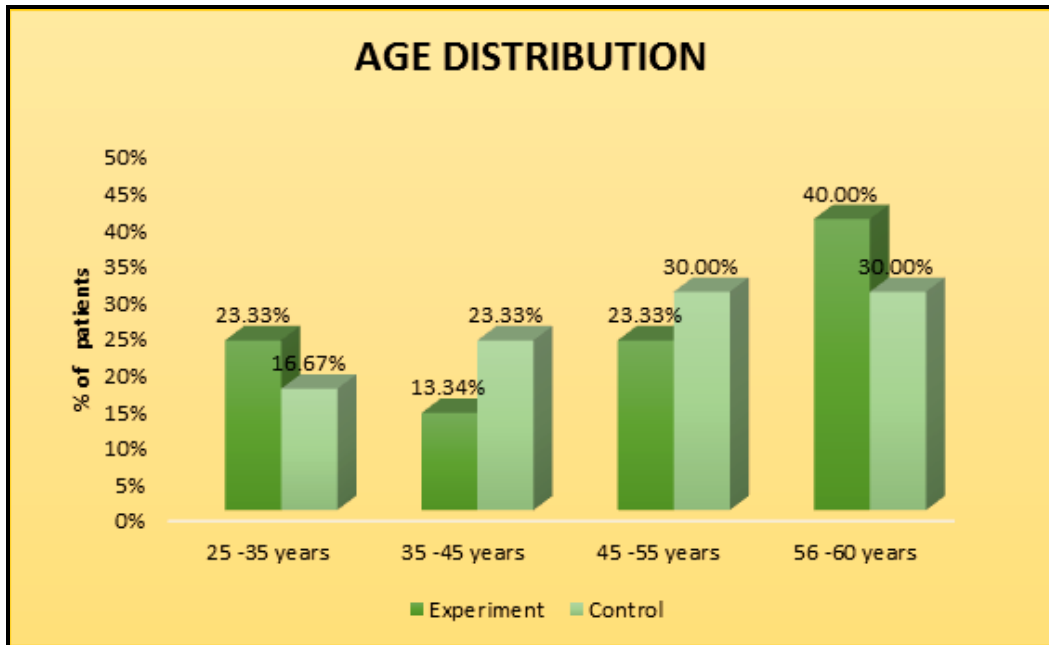
Vital Signs		Group			
		Experiment(n=30)		Control(n=30)	
		n	%	n	%
Pulse in beats/min	Less than 76	0	0.00%	1	3.33%
	76-86	30	100.00%	29	96.67%
	> 86	0	0.00%	0	0.00%
Respiration in Res/min	Less than 16	0	0.00%	0	0.00%
	16-18	25	83.33%	25	83.33%
	More than 18	5	16.67%	5	16.67%
Blood Pressure in mm of Hg	Below 120/80	8	26.67%	4	13.33%
	120/80-130/90	21	70.00%	26	86.67%
	Above 130/90	1	3.33%	0	0.00%

**Table 4.3 predicts that**

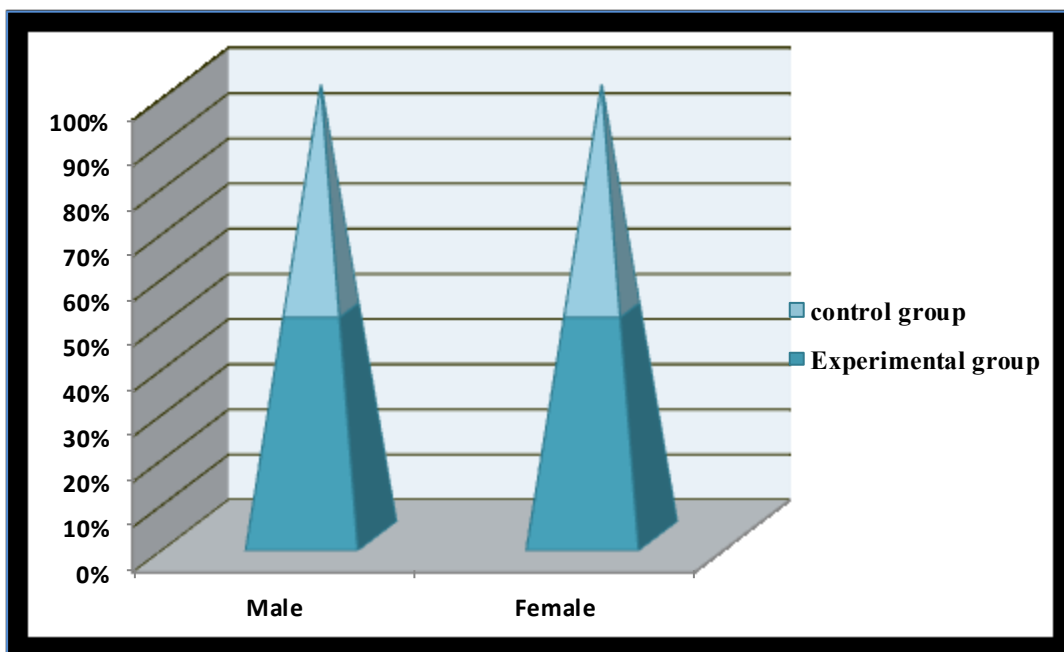
Majority (100%) of the subjects have the pulse rate of 76-86 beats/min, (97%) in control group.

Majority (83%) of the subjects in both experimental and control group have the respiratory rate of 16-18 respiration/minute.

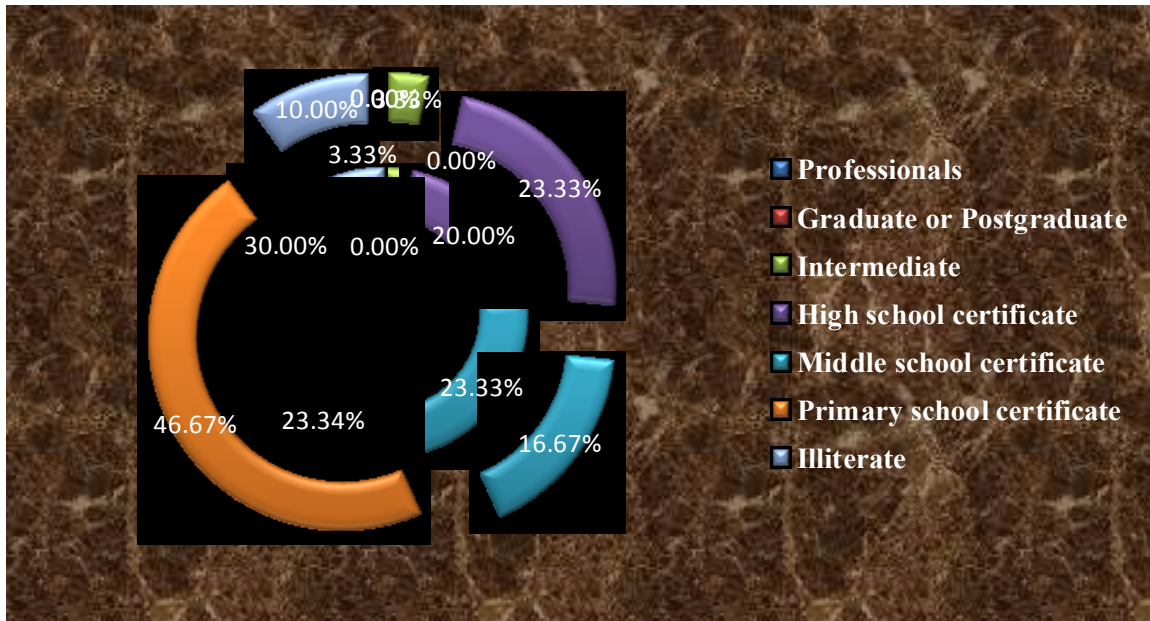
Majority (70%) of the subject in experimental group have the blood pressure range of 120/80-130/90 mm of hg, (87%) in control group.



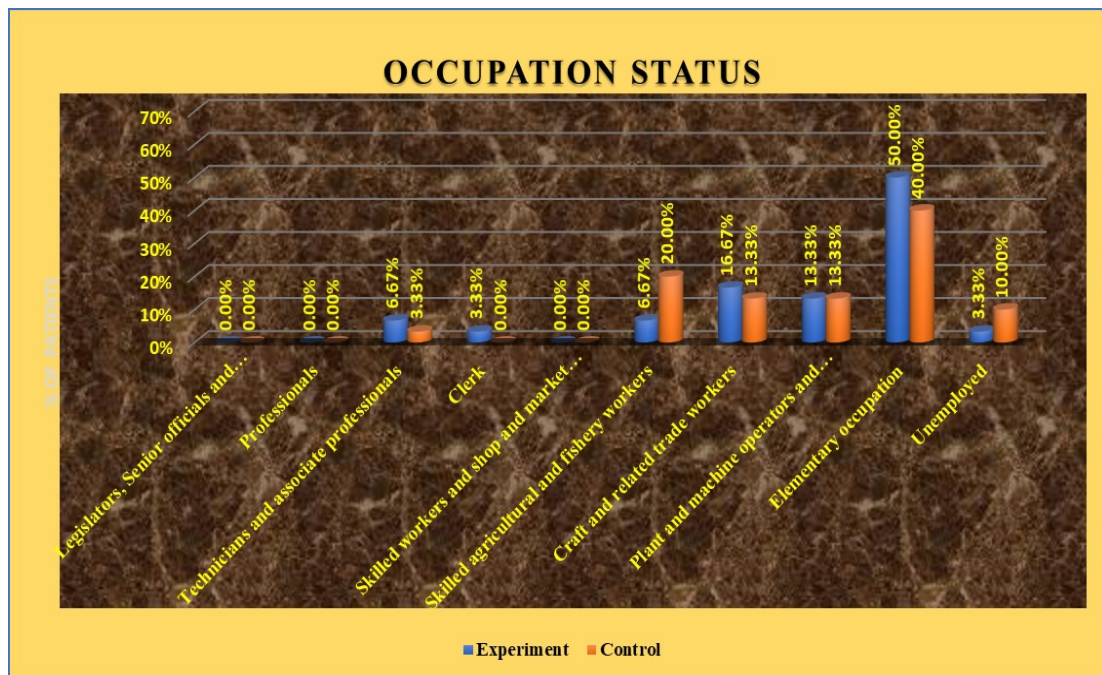
*Fig.No-4.1: Age distribution of chemotherapy patients*



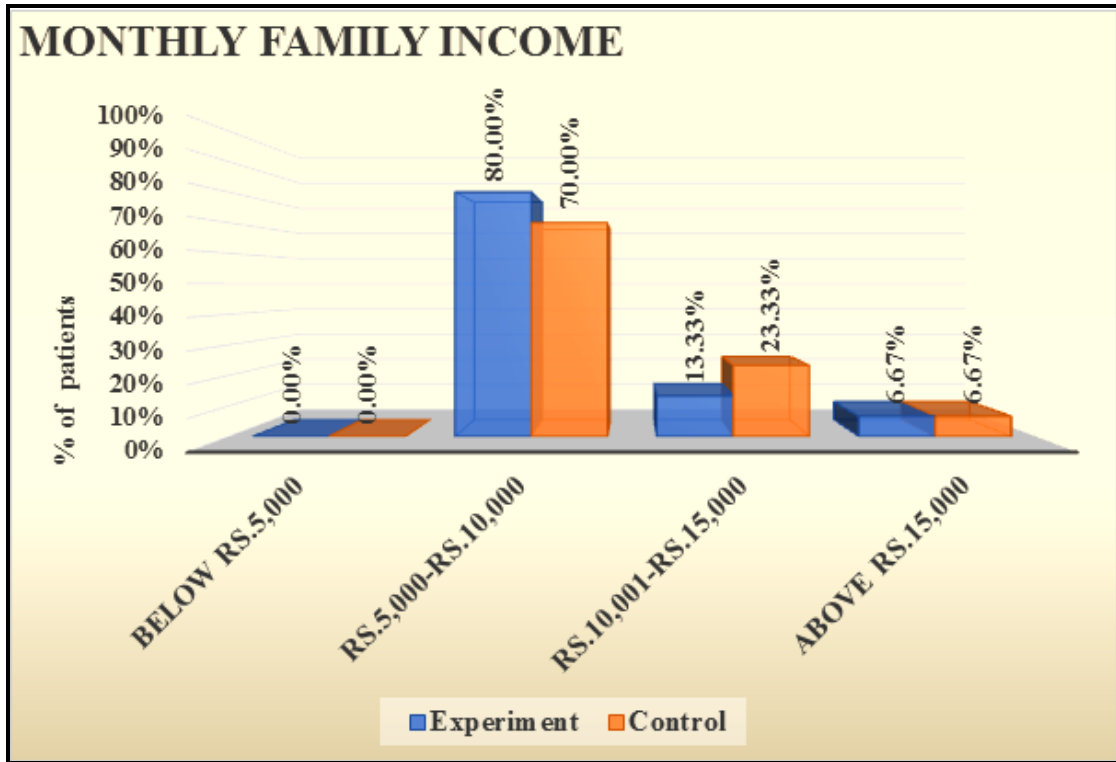
*Fig.No-4.2: Depicts the gender distribution*



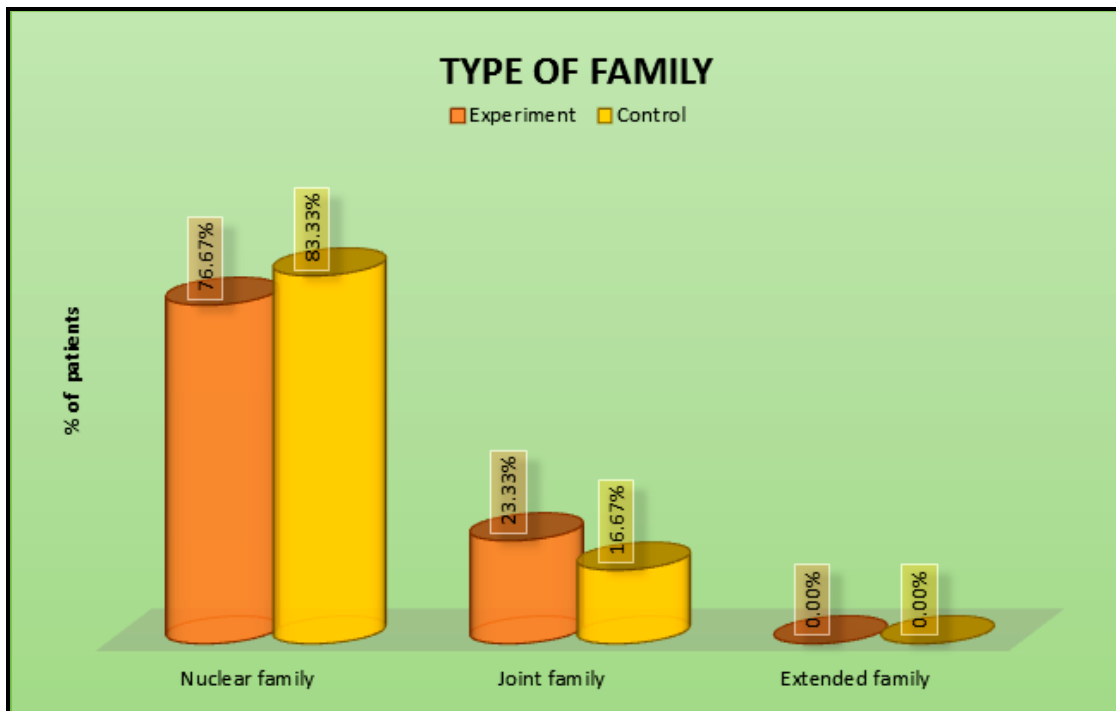
*Fig.No-4.3: Depicts the educational qualification*



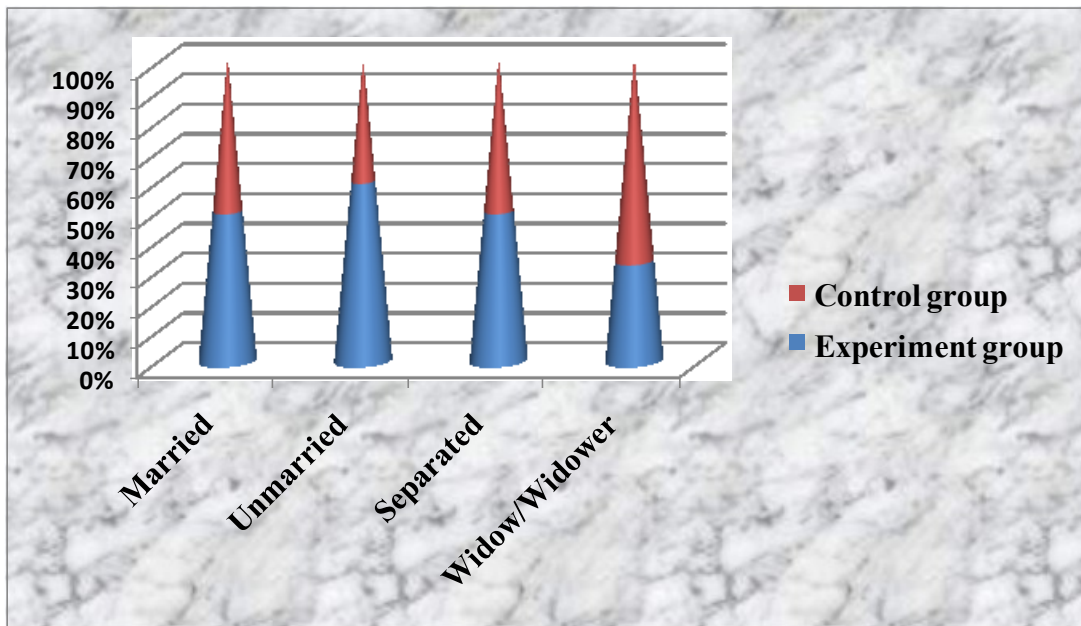
*Fig.No-4.4: Depicts the occupational status*



*Fig.No-4.5: Depicts that family income*



*Fig.No-4.6: Depicts the type of family*

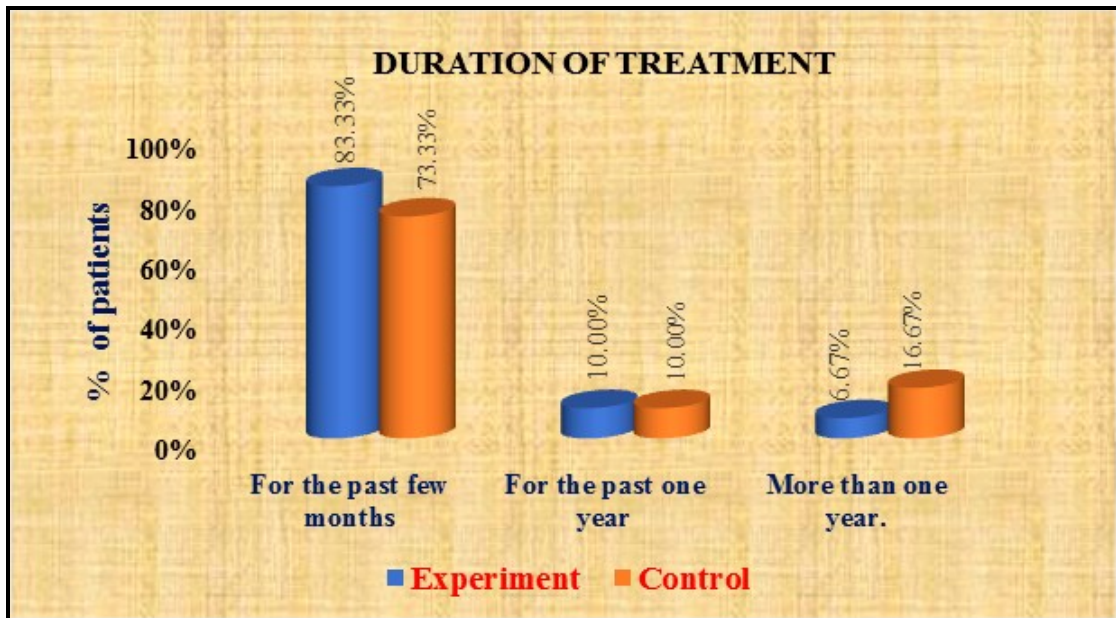


*Fig. No-4.7: Depicts the martial status*

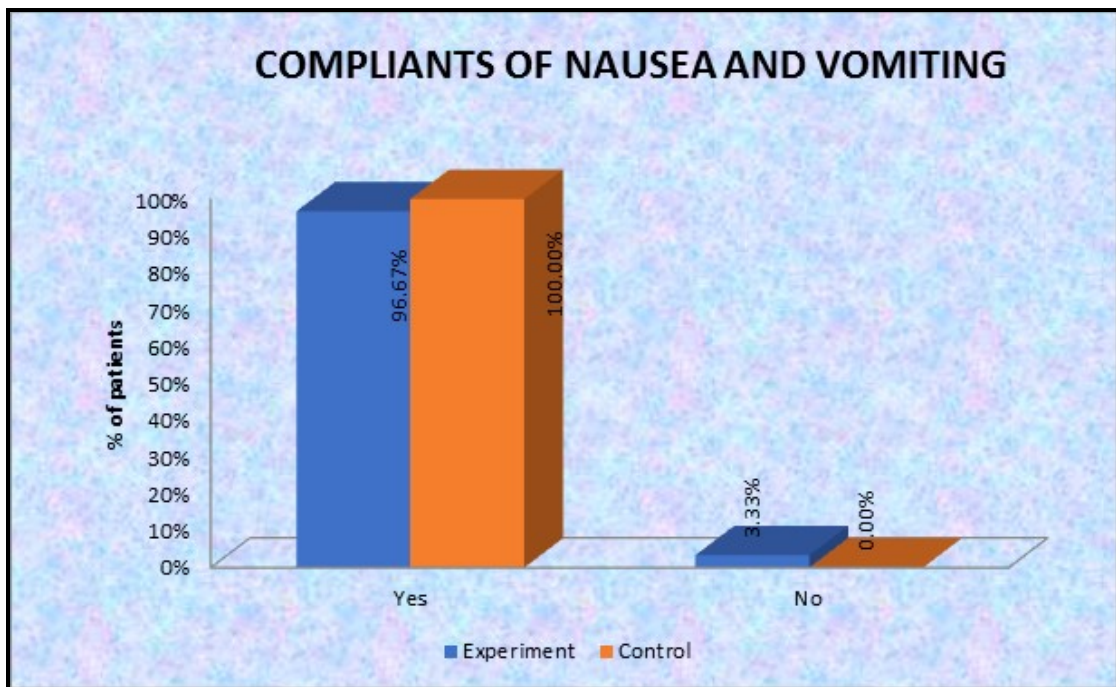


*Fig. No-4.8: Depicts that majority of patients used to speak Tamil*

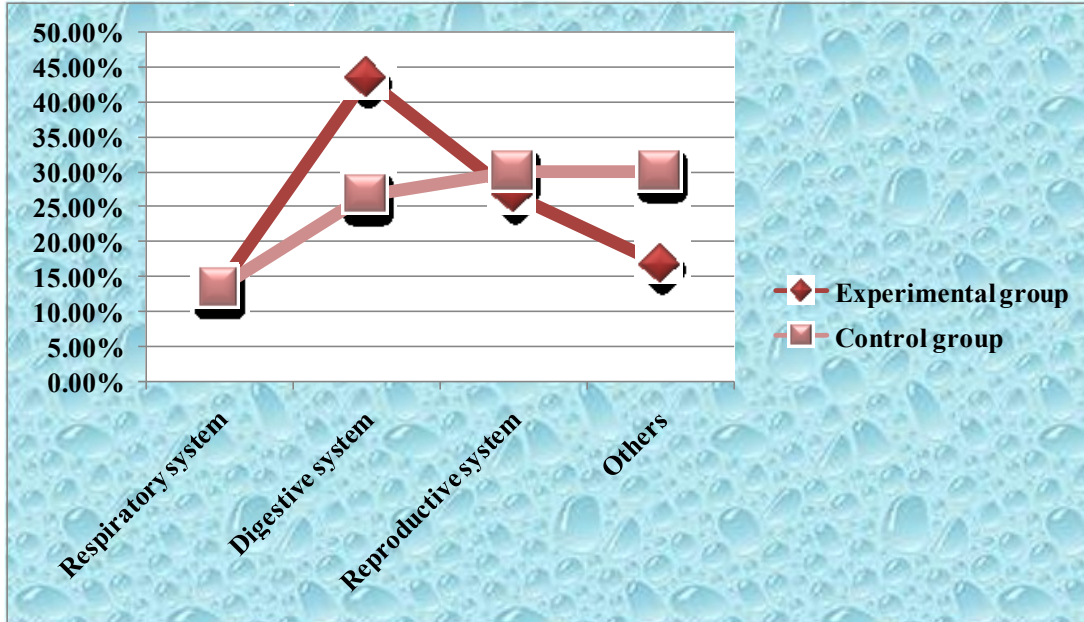




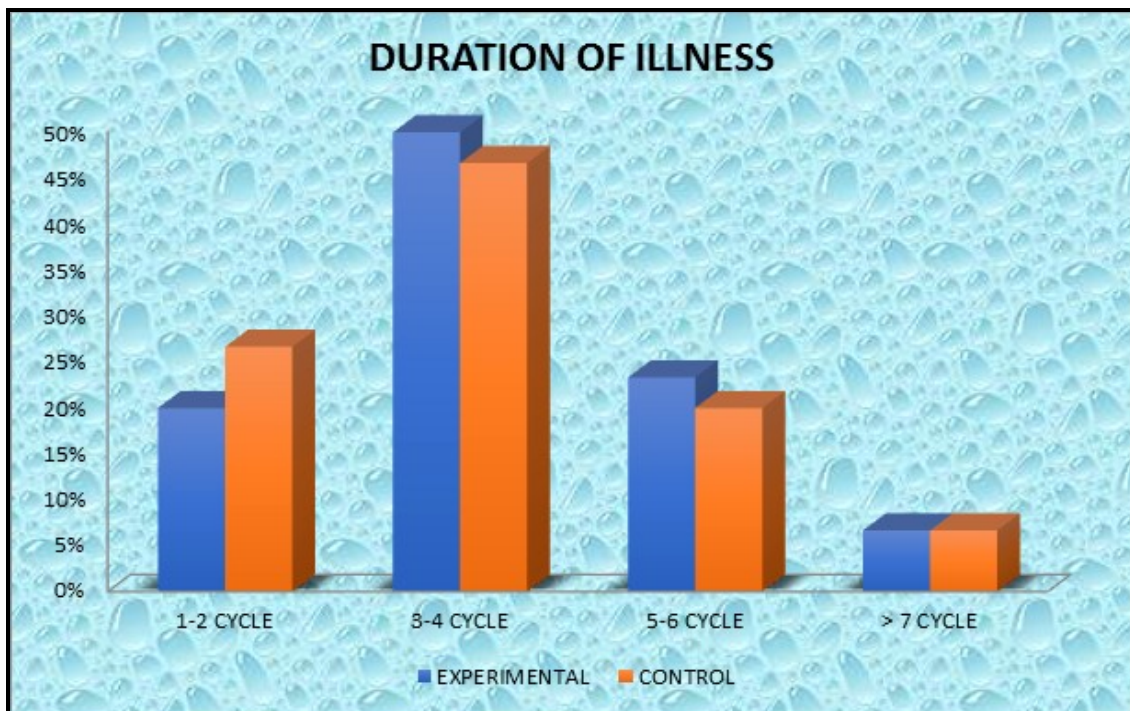
*Fig.No-4.9: Duration of treatment*



*Fig.No-4.10: Complaints of nausea and vomiting*

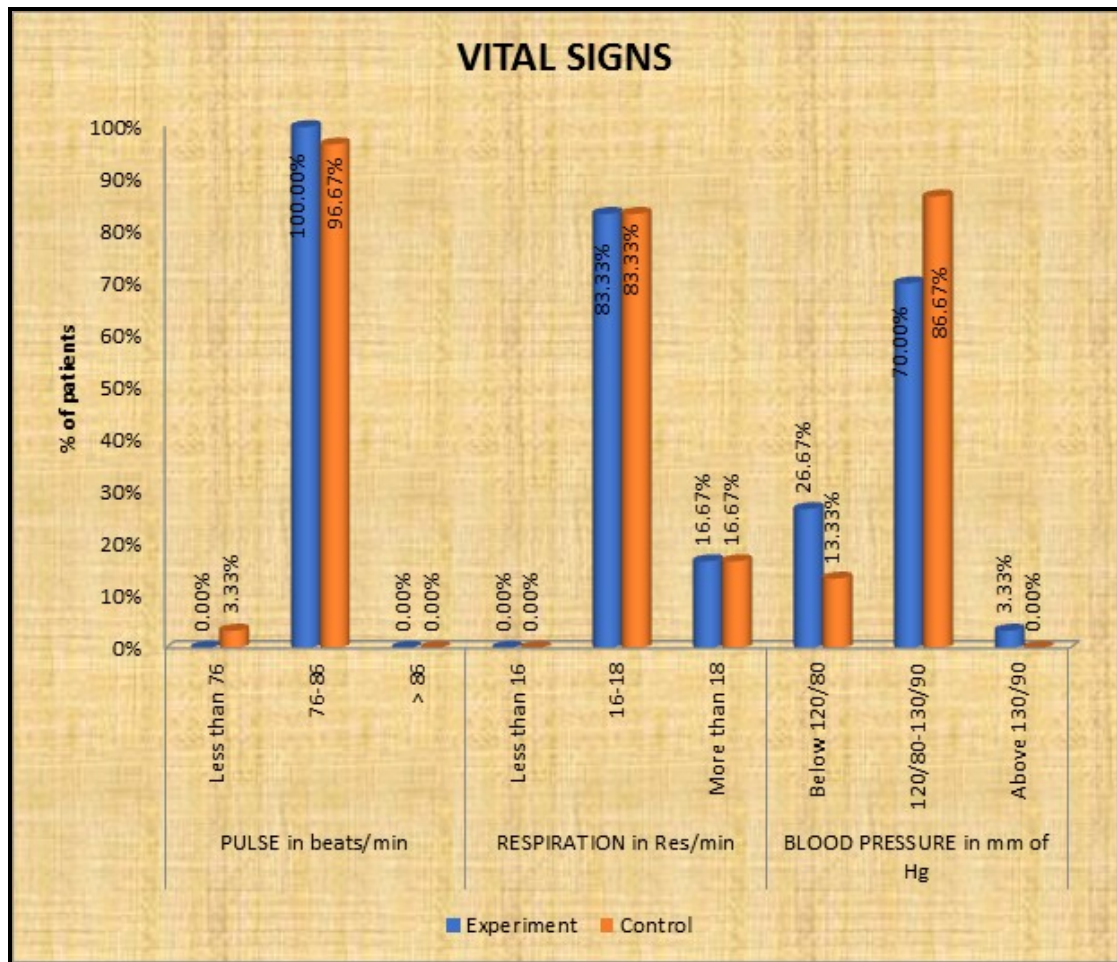


*Fig. No-4.11: Depicts the clinical diagnosis*



*Fig.No-4.12: Depicts the duration of illness*





***Fig.No-4.13: Depicts the vital signs of the patients receiving chemotherapy treatment***



**SECTION-B: PERCENTAGE DISTRIBUTION OF NAUSEA AND VOMITING IN EXPERIMENTAL AND CONTROL GROUP**

*Table-4.4: Modified Rhodes Index of Nausea and Vomiting*

		Group			
		Experiment (n=30)		Control (n=30)	
		n	%	n	%
In the last 12 hrs, you have felt nauseated times.	Not at all	0	0.00%	0	0.00%
	1-2 times	21	70.00%	0	0.00%
	3-4 times	9	30.00%	12	40.00%
	5-6 times	0	0.00%	18	60.00%
	7 or more times	0	0.00%	0	0.00%
In the last 12 hrs, you have felt nauseated or sick to your stomach	Not at all	0	0.00%	0	0.00%
	1hr or less	24	80.00%	0	0.00%
	2-3hrs	6	20.00%	13	43.33%
	4-6hrs	0	0.00%	17	56.67%
	More than 6 hrs	0	0.00%	0	0.00%
In the last 12hrs, from nausea or sick to your stomach you have felt distress	No	0	0.00%	0	0.00%
	Mild	24	80.00%	0	0.00%
	Moderate	6	20.00%	12	40.00%
	Great	0	0.00%	18	60.00%
	Severe	0	0.00%	0	0.00%
In the last 12hrs, you threw up times	Not at all	2	6.67%	0	0.00%
	1-2 times	24	80.00%	0	0.00%
	3-4 times	4	13.33%	22	73.33%
	5-6 times	0	0.00%	8	26.67%
	7 or more times	0	0.00%	0	0.00%

		Group			
		Experiment (n=30)		Control (n=30)	
		n	%	n	%
In the last 12hrs, each time you threw up, you produced a amount.	I didn't threw up	2	6.67%	0	0.00%
	Small upto ½ cup	27	90.00%	0	0.00%
	Moderate ½ to 2 cups	1	3.33%	21	70.00%
	Large 2-3 cups	0	0.00%	9	30.00%
	Very large 3 cups or more	0	0.00%	0	0.00%
In the last 12hrs, from vomiting or throw up you have felt distress	No	2	6.67%	0	0.00%
	Mild	25	83.33%	0	0.00%
	Moderate	3	10.00%	18	60.00%
	Great	0	0.00%	12	40.00%
	Severe	0	0.00%	0	0.00%

***Table 4.4 Depicts that***

The post-test percentage distribution of subjects having chemotherapy induced nausea and vomiting in the control and experimental group. 70% of subjects in experimental group felt nauseated 1-2 times for last 12 hours, 60% of subjects in control group felt nauseated 5-6 times for last 12 hours. In the last 12 hours, 80% of subjects in experimental group threw up 1-2 times, and 73% in the control group threw up 3-4 times.

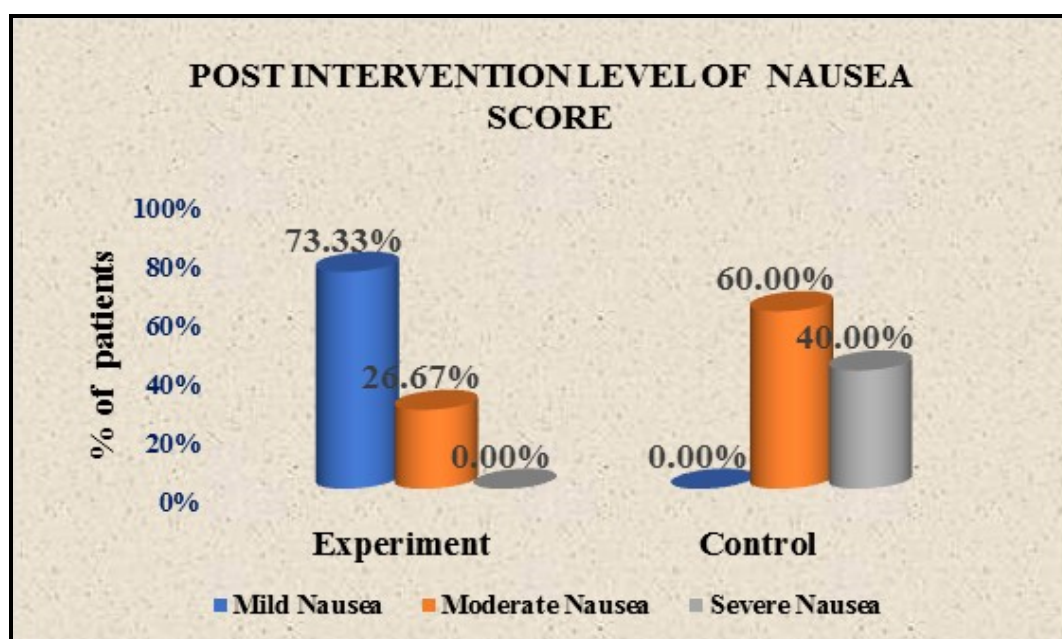
**SECTION-C: ANALYSIS OF POST INTERVENTION LEVEL OF NAUSEA AND VOMITING IN EXPERIMENTAL AND CONTROL GROUP.**

*Table-4.5: Post Intervention Level of Nausea*

Level of Nausea	Experiment group		Control group	
	n	%	n	%
Mild Nausea	22	73.33%	0	0.00%
Moderate Nausea	8	26.67%	18	60.00%
Severe Nausea	0	0.00%	12	40.00%
Total	30	100.0%	30	100.0%

**Table 4.5 depicts that** it assess the level of nausea score in experiment and control group. In experiment group, 73.33% of them are having mild level of nausea score, 26.67% of them are having moderate level of nausea and none are having severe level of nausea score.

In control group, none of them are having mild level of nausea score, 60.00% of them are having moderate level of nausea and 40% are having severe level of nausea score.



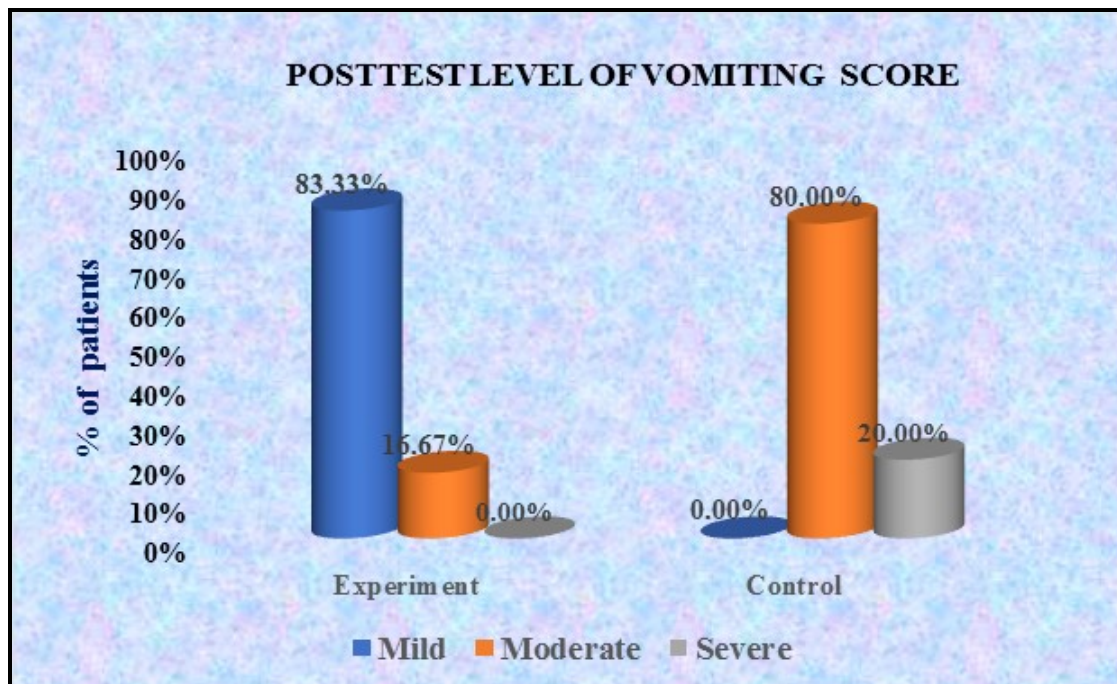
*Fig No-4.14: The figure shows that the post-intervention level of nausea score*

**Table-4.6: Post Intervention Level of Vomiting**

Level of vomiting	Experiment group		Control group	
	n	%	n	%
Mild Nausea	25	83.33%	0	0.00%
Moderate Nausea	5	16.67%	24	80.00%
Severe Nausea	0	0.00%	6	20.00%
Total	30	100.0%	30	100.0%

Table 4.6 depicts the level of vomiting score in experiment and control group. In experiment group, 83.33% of them are having mild level of vomiting score, 16.67% of them are having moderate level of vomiting and none are having severe level of vomiting score.

In control group, none of them are having mild level of vomiting score, 80.00% of them are having moderate level of vomiting and 20% are having severe level of vomiting score.



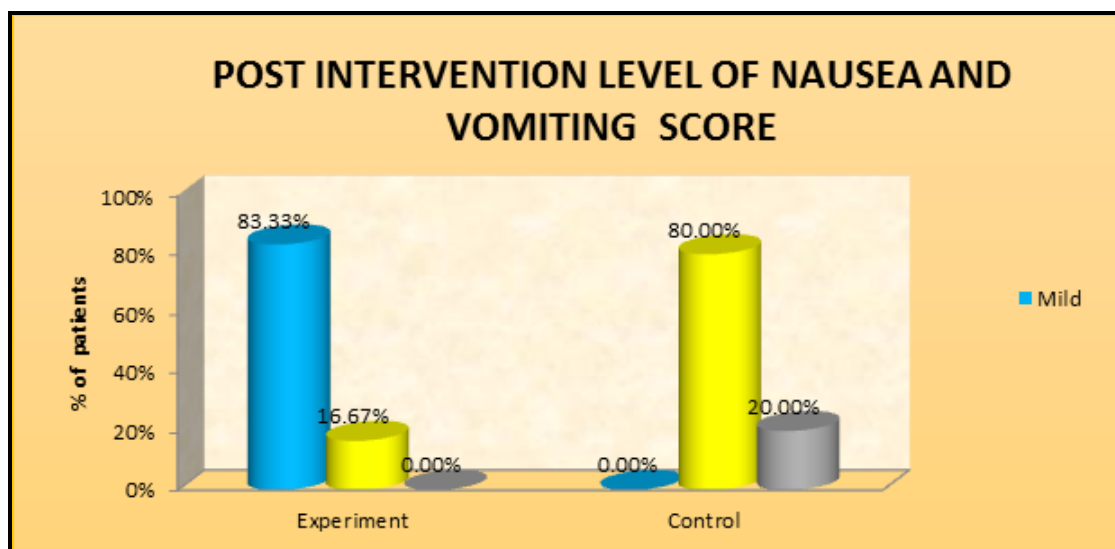
**Fig No-4.15: Post-Intervention Level of Vomiting Score in Experimental and Control Group**

**Table-4.7: Post Intervention Total Level of Nausea and Vomiting**

Level of Nausea and Vomiting	Experiment group		Control group	
	n	%	n	%
Mild Nausea and Vomiting	25	83.33%	0	0.00%
Moderate Nausea and Vomiting	5	16.67%	24	80.00%
Severe Nausea and Vomiting	0	0.00%	6	20.00%
Total	30	100.0%	30	100.0%

**Table 4.7 depicts that** the level of nausea and vomiting score in experiment and control group. In experiment group, 83.33% of them are having mild level of nausea and vomiting score, 16.67% of them are having moderate level of nausea and vomiting and none are having severe level of nausea and vomiting score.

In control group, none of them are having mild level of nausea and vomiting score, 80.00% of them are having moderate level of nausea and vomiting and 20% are having severe level of nausea and vomiting score.



**Fig No-16: Post intervention level of nausea and vomiting in experimental and control group**

**SECTION-D: COMPARISON OF LEVEL OF NAUSEA AND VOMITING BETWEEN EXPERIMENTAL AND CONTROL GROUP**

*Table-4.8: Comparison of post intervention mean modified Rhodes Index of nausea and vomiting scale score*

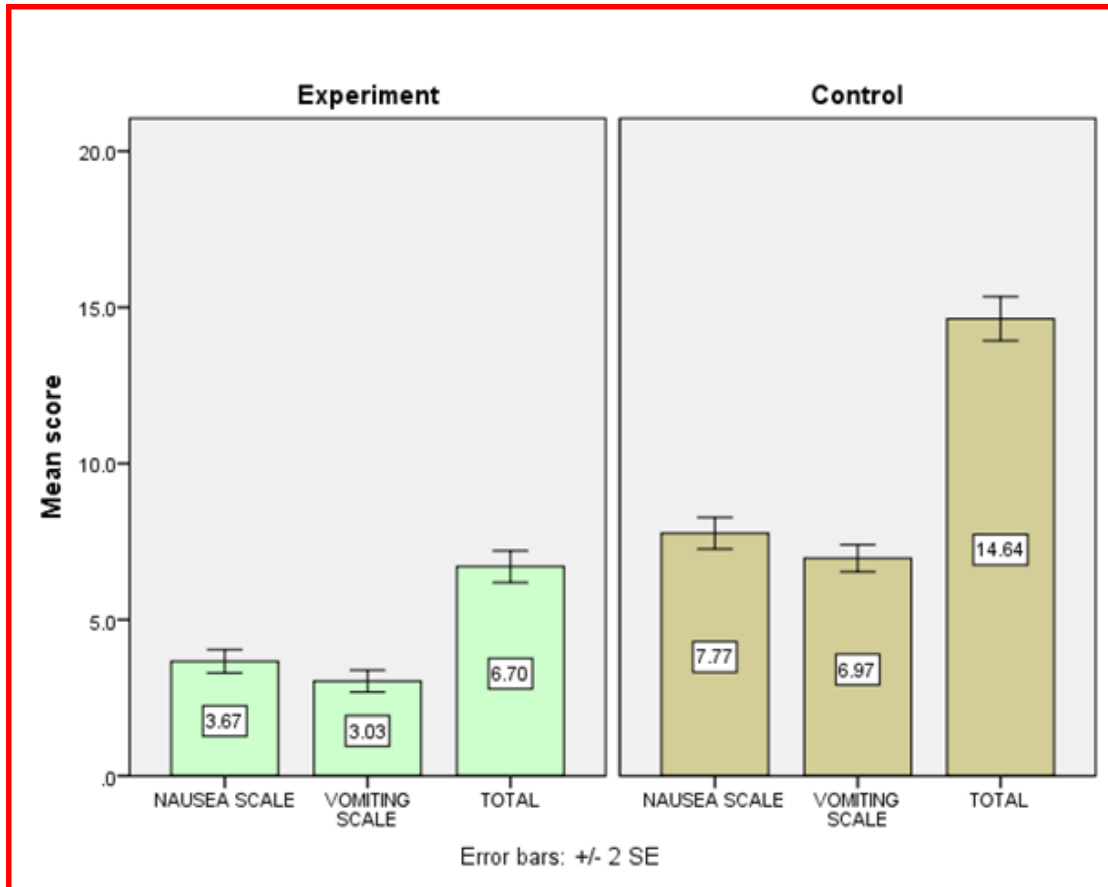
	Experiment		Control		Mean difference	Student independent t-test
	Mean score	SD	Mean score	SD		
Nausea	3.67	1.03	7.77	1.38	4.00	t=13.03 P=0.001***(S)
Vomiting	3.03	.96	6.97	1.19	3.94	t=14.07 P=0.001***(S)
Total score	6.70	1.39	14.64	1.94	7.94	t=18.20 P=0.001***(S)

**Table 4.8 depicts** there is the comparison of the post-intervention mean nausea and vomiting score in experiment and control group.

Considering Nausea, Experiment group patients are having 3.67 nausea score and control group patients are having 7.77 nausea score, so the difference is 4.00, this difference is large and it is significant. It was tested using Student independent t-test.

Considering vomiting, Experiment group patients are having 3.03 vomiting score and control group patients are having 6.97 vomiting score, so the difference is 3.94, this difference is large and it is significant. It was tested using Student independent t-test.

Considering Nausea and vomiting, Experiment group patients are having 6.70 Nausea and vomiting score and control group patients are having 14.64 Nausea and vomiting score, so the difference is 7.94, this difference is large and it is significant. It was tested using Student independent t-test.



***Fig.No-4.17: Simple bar diagram with 2 standard error compares the experiment and control post-intervention mean nausea and vomiting score***

**SECTION-E: EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE ON NAUSEA AND VOMITING IN THE EXPERIMENTAL GROUP**

*Table-4.9: Effectiveness of Progressive Muscle Relaxation Technique and Nausea and Vomiting Reduction Score*

	<b>Group</b>	<b>Max score</b>	<b>Mean score</b>	<b>% of mean score</b>	<b>% of reduction</b>
Nausea	Experiment	12	3.67	30.58%	34.17%
	Control	12	7.77	64.75%	
Vomiting	Experiment	12	3.03	25.25%	32.83%
	Control	12	6.97	58.08%	
Nausea and Vomiting	Experiment	24	6.70	27.92%	33.08%
	Control	24	14.64	61.00%	

**Table no 4.9 depicts that** the effectiveness of progressive muscle relaxation technique in reducing nausea and vomiting for cancer patients receiving chemotherapy in Oncology Ward at Rajiv Gandhi Government General Hospital, Chennai-03.

Considering Nausea patients are gained 34.17% reduction, 32.38% of vomiting reduction and overall 33.08 % of nausea& vomiting reduction, then control group.



**SECTION-F: ASSOCIATION BETWEEN LEVEL OF NAUSEA AND VOMITING WITH SELECTED DEMOGRAPHIC VARIABLES IN EXPERIMENTAL AND CONTROL GROUP**

*Table 4.10: Association between patients posttest level of nausea and vomiting reduction score and their demographic variables (Experiment)*

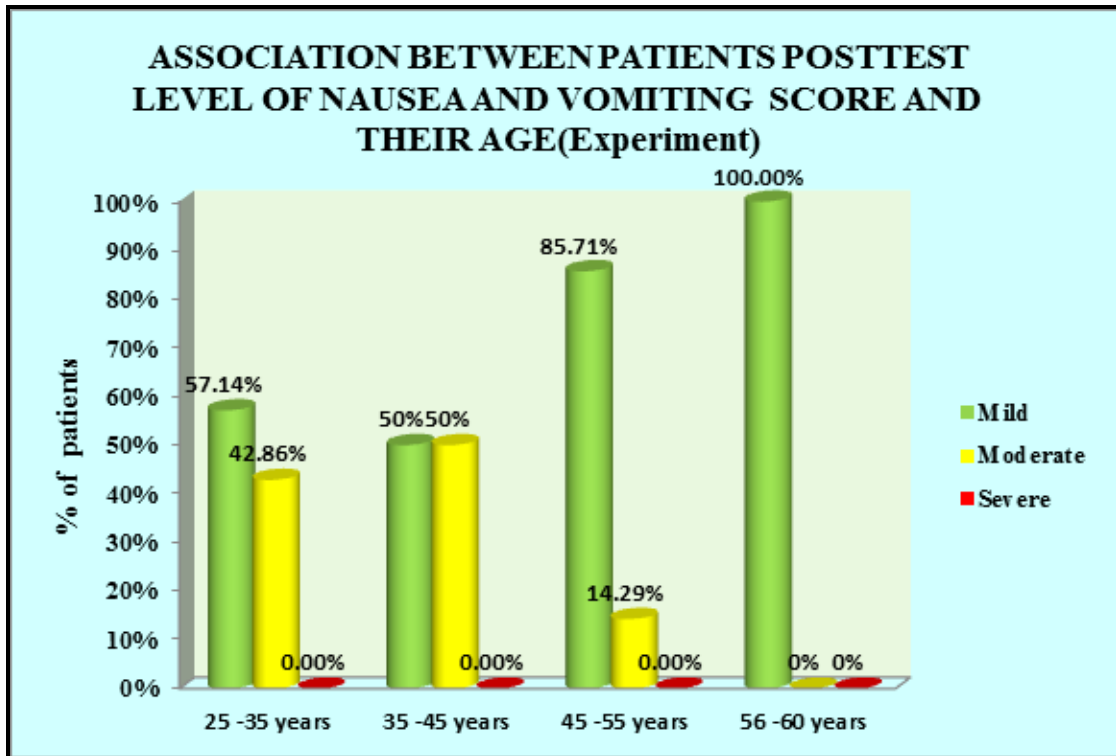
Demographic Variables		Post-test Nausea and Vomiting						n	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Age of the Client	25 -35 years	4	57.14%	3	42.86%	0	0.00%	7	$\chi^2=7.69$ P=0.05*(S)
	36 -45 years	2	50.00%	2	50.00%	0	0.00%	4	
	46 -55 years	6	85.71%	1	14.29%	0	0.00%	7	
	56 -60 years	12	100.00%	0	0.00%	0	0.00%	12	
Gender	Male	14	80.00%	1	20.00%	0	0.00%	15	$\chi^2=3.33$ P=0.07(NS)
	Female	10	80.00%	5	20.00%	0	0.00%	15	
Educational Qualification	Professionals	0	0.00%	0	0.00%	0	0.00%	0	$\chi^2=3.16$ P=0.53(NS)
	Graduate or postgraduate	0	0.00%	0	0.00%	0	0.00%	0	
	Intermediate or post-high school diploma	1	100.00%	0	0.00%	0	0.00%	1	
	High school certificate	5	83.33%	1	16.67%	0	0.00%	6	
	Middle school certificate	4	57.14%	3	42.86%	0	0.00%	7	
	Primary school certificate	6	85.71%	1	14.29%	0	0.00%	7	
	Illiterate	8	88.89%	1	11.11%	0	0.00%	9	

Demographic Variables		Post-test Nausea and Vomiting						n	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Occupation	Legislators, Senior officials and managers.	0	0.00%	0	0.00%	0	0.00%	0	$\chi^2=9.47$ P=0.15(NS)
	Professionals	0	0.00%	0	0.00%	0	0.00%	0	
	Technicians and associate professionals	2	100.00%	0	0.00%	0	0.00%	2	
	Clerk	1	100.00%	0	0.00%	0	0.00%	1	
	Skilled workers and shop and market sales workers	0	0.00%	0	0.00%	0	0.00%	0	
	Skilled agricultural and fishery workers	2	100.00%	0	0.00%	0	0.00%	2	
	Craft and related trade workers	4	80.00%	1	20.00%	0	0.00%	5	
	Plant and machine operators and assemblers	1	25.00%	3	75.00%	0	0.00%	4	
	Elementary occupation	13	86.67%	2	13.33%	0	0.00%	15	
Unemployed	1	100.00%	0	0.00%	0	0.00%	1		
Income of the family	Below Rs.5,000	0	0.00%	0	0.00%	0	0.00%	0	$\chi^2=0.57$ P=0.75(NS)
	Rs.5,000-Rs.10,000	19	79.17%	5	20.83%	0	0.00%	24	
	Rs.10,001-Rs.15,000	3	75.00%	1	25.00%	0	0.00%	4	
	Above Rs.15,000	2	100.00%	0	0.00%	0	0.00%	2	

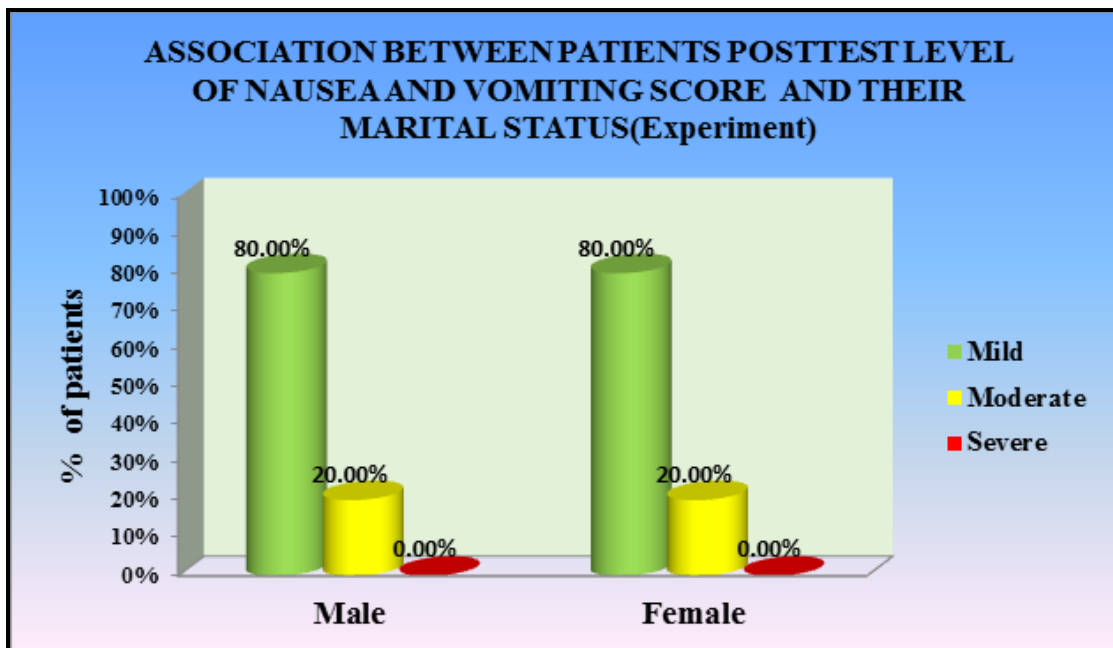
Demographic Variables		Post-test Nausea and Vomiting						n	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Type of family	Nuclear family	18	78.26%	5	21.74%	0	0.00%	23	$\chi^2=0.18$ P=0.66(NS)
	Joint family	6	85.71%	1	14.29%	0	0.00%	7	
	Extended family	0	0.00%	0	0.00%	0	0.00%	0	
Marital status	Married	22	88.00%	3	12.00%	0	0.00%	25	$\chi^2=9.33$ P=0.02*(S)
	Unmarried	1	33.33%	2	66.67%	0	0.00%	3	
	Separated	0	0.00%	1	100.00%	0	0.00%	1	
	Widow/widower	1	100.00%	0	0.00%	0	0.00%	1	
Language known	Tamil	24	80.00%	6	20.00%	0	0.00%	30	$\chi^2=0.00$ P=1.00(NS)
	English	0	0.00%	0	0.00%	0	0.00%	0	
	Both A and B	0	0.00%	0	0.00%	0	0.00%	0	
	Other Language	0	0.00%	0	0.00%	0	0.00%	0	
How long does the patient undergone chemotherapy treatment	For the past few months	19	76.00%	6	24.00%	0	0.00%	25	$\chi^2=1.50$ P=0.47(NS)
	For the past one year	3	100.00%	0	0.00%	0	0.00%	3	
	More than one year.	2	100.00%	0	0.00%	0	0.00%	2	
Complaints of nausea and vomiting	Yes	23	79.31%	6	20.69%	0	0.00%	29	$\chi^2=0.25$ P=0.61(NS)
	No	1	100.00%	0	0.00%	0	0.00%	1	

NS=not significant S= Significant P> 0.05 not significant \*P≤0.05 significant

Table no 4.10 depicts that the association between patient's post-test level of nausea and vomiting reduction score and their demographic variables. Elder patients and married patients are having more reduction than others. Statistical significance was calculated using chi square test.



*Fig No.4.18. Depicts the association between patients post intervention level of nausea and vomiting score and their age in experimental group.*



*Fig No.4.19. Depicts that association between patients post intervention level of vomiting score and their marital status in experimental group.*

**Table-4.11: Association Between Patients Post Intervention level of Nausea and Vomiting Reduction Score and their Demographic Variables (Control)**

Demographic variables		Post-test Nausea and Vomiting						n	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Age of the Client	25 -35 years	0	0.00%	5	100.00%	0	0.00%	5	$\chi^2=4.17$ P=0.24 (NS)
	36 -45 years	0	0.00%	5	71.43%	2	28.57%	7	
	46 -55 years	0	0.00%	9	100.00%	0	0.00%	9	
	56 -60 years	0	0.00%	7	77.78%	2	22.22%	9	
Gender	Male	0	0.00%	14	93.33%	1	6.67%	15	$\chi^2=1.15$ P=0.28 (NS)
	Female	0	0.00%	12	80.00%	3	20.00%	15	
Educational Qualification	Professionals	0	0.00%	0	0.00%	0	0.00%	0	$\chi^2=2.47$ P=0.65 (NS)
	Graduate or postgraduate	0	0.00%	0	0.00%	0	0.00%	0	
	Intermediate or post-high school diploma	0	0.00%	1	100.00%	0	0.00%	1	
	High school certificate	0	0.00%	7	100.00%	0	0.00%	7	
	Middle school certificate	0	0.00%	4	80.00%	1	20.00%	5	
	Primary school certificate	0	0.00%	12	85.71%	2	14.29%	14	
	Illiterate	0	0.00%	2	66.67%	1	33.33%	3	
Occupation	Legislators, Senior officials and managers.	0	0.00%	0	0.00%	0	0.00%	0	$\chi^2=3.31$ P=0.65 (NS)
	Professionals	0	0.00%	0	0.00%	0	0.00%	0	
	Technicians and associate professionals	0	0.00%	1	100.00%	0	0.00%	1	
	Clerk	0	0.00%	0	0.00%	0	0.00%	0	
	Skilled workers and shop and market sales workers	0	0.00%	0	0.00%	0	0.00%	0	
	Skilled agricultural and fishery workers	0	0.00%	5	83.33%	1	16.67%	6	
	Craft and related trade workers	0	0.00%	4	100.00%	0	0.00%	4	
	Plant and machine operators and assemblers	0	0.00%	4	100.00%	0	0.00%	4	
	Elementary occupation	0	0.00%	9	75.00%	3	25.00%	12	
	Unemployed	0	0.00%	3	100.00%	0	0.00%	3	

Demographic variables		Post-test Nausea and Vomiting						n	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Income of the family	Below Rs.5,000	0	0.00%	0	0.00%	0	0.00%	0	$\chi^2=1.97$ P=0.32 (NS)
	Rs.5,000-Rs.10,000	0	0.00%	17	80.95%	4	19.05%	21	
	Rs.10,001-Rs.15,000	0	0.00%	7	100.00%	0	0.00%	7	
	Above Rs.15,000	0	0.00%	2	100.00%	0	0.00%	2	
Type of family	Nuclear family	0	0.00%	21	84.00%	4	16.00%	25	$\chi^2=0.92$ P=0.33 (NS)
	Joint family	0	0.00%	5	100.00%	0	0.00%	5	
	Extended family	0	0.00%	0	0.00%	0	0.00%	0	
Marital status	Married	0	0.00%	22	88.00%	3	12.00%	25	$\chi^2=2.82$ P=0.42 (NS)
	Unmarried	0	0.00%	2	100.00%	0	0.00%	2	
	Separated	0	0.00%	1	100.00%	0	0.00%	1	
	Widow/widower	0	0.00%	1	50.00%	1	50.00%	2	
Language known	Tamil	0	0.00%	26	86.67%	4	13.33%	30	$\chi^2=0.00$ P=1.00 (NS)
	English	0	0.00%	0	0.00%	0	0.00%	0	
	Both A and B	0	0.00%	0	0.00%	0	0.00%	0	
	Other Language	0	0.00%	0	0.00%	0	0.00%	0	
How long does the patient undergone chemotherapy treatment	For the past few months	0	0.00%	20	90.91%	2	9.09%	22	$\chi^2=3.88$ P=0.14 (NS)
	For the past one year	0	0.00%	3	100.00%	0	0.00%	3	
	More than one year.	0	0.00%	3	60.00%	2	40.00%	5	
Complaints of nausea and vomiting	Yes	0	0.00%	26	86.67%	4	13.33%	30	$\chi^2=0.00$ P=1.00 (NS)
	No	0	0.00%	0	0.00%	0	0.00%	0	

NS=not significant P> 0.05 not significant

**Table No 4.11 depicts** the association between patient's post-intervention level of nausea and vomiting reduction score and their demographic variables. None of the variables are significant. Statistical significance was calculated using chi square test.

**Table 4.12: Association between patients post intervention level of nausea and vomiting reduction score and their clinical variables (experiment)**

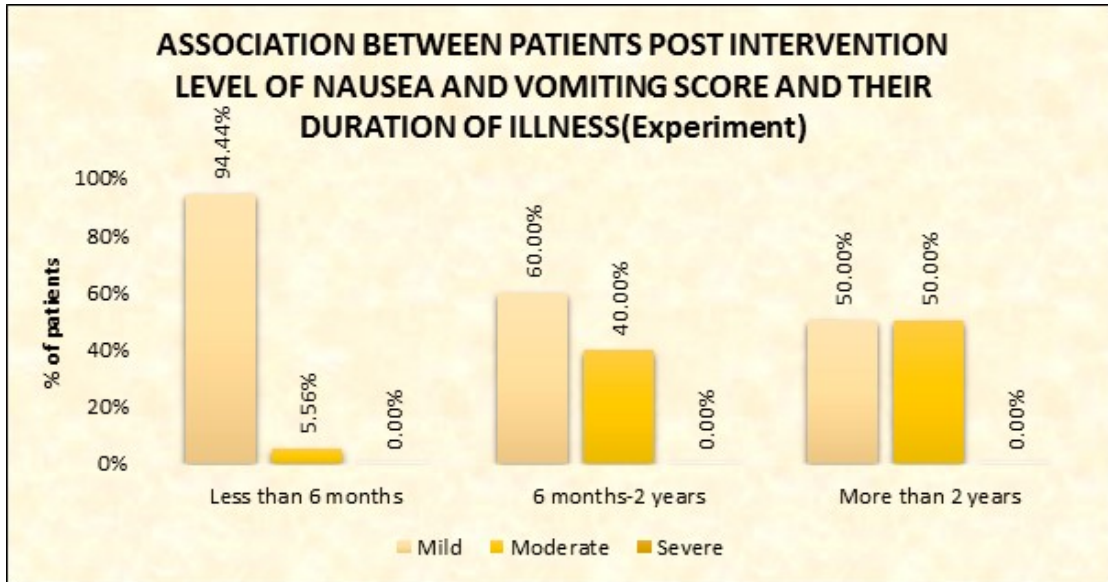
Clinical variables		Post-test Nausea and Vomiting						n	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Clinical diagnosis	Respiratory system	3	75.00%	1	25.00%	0	0.00%	4	$\chi^2=0.36$ P=0.95(NS)
	Digestive system	11	84.62%	2	15.38%	0	0.00%	13	
	Reproductive system	6	75.00%	2	25.00%	0	0.00%	8	
	Others	4	80.00%	1	20.00%	0	0.00%	5	
Duration of illness	Less than 6 months	17	94.44%	1	5.56%	0	0.00%	18	$\chi^2=5.99$ P=0.05*(S)
	6 months 2 years	6	60.00%	4	40.00%	0	0.00%	10	
	More than 2 years	1	50.00%	1	50.00%	0	0.00%	2	
Number of chemotherapy cycles	1-2 cycles	5	83.33%	1	16.67%	0	0.00%	6	$\chi^2=10.02$ P=0.02*(S)
	3-4 cycles	14	93.33%	1	6.67%	0	0.00%	15	
	5-6 cycles	5	71.42%	2	28.58%	0	0.00%	7	
	> 7 cycles	0	0.00%	2	100.00%	0	0.00%	2	
Number of chemotherapy days	1-2 days	0	0.00%	0	0.00%	0	0.00%	0	$\chi^2=0.25$ P=0.61(NS)
	3-4 days	23	79.31%	6	20.69%	0	0.00%	29	
	5-6 days	0	0.00%	0	0.00%	0	0.00%	0	
	> 7 days	1	100.00%	0	0.00%	0	0.00%	1	

Clinical variables		Post-test Nausea and Vomiting						n	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Name of chemotherapy drugs	Docetaxel, cisplatin, 5-Fluorouracil	2	40.00%	3	60.00%	0	0.00%	5	$\chi^2=8.07$ P=0.09(NS)
	Capecitabine, Oxaliplatin	3	100.00%	0	0.00%	0	0.00%	3	
	Docetaxel, Adriamycin, cyclophosphamide	2	100.00%	0	0.00%	0	0.00%	2	
	5-Fluorouracil, Oxaliplatin, leucovorin	7	100.00%	0	0.00%	0	0.00%	7	
	Others	10	76.92%	3	23.08%	0	0.00%	13	

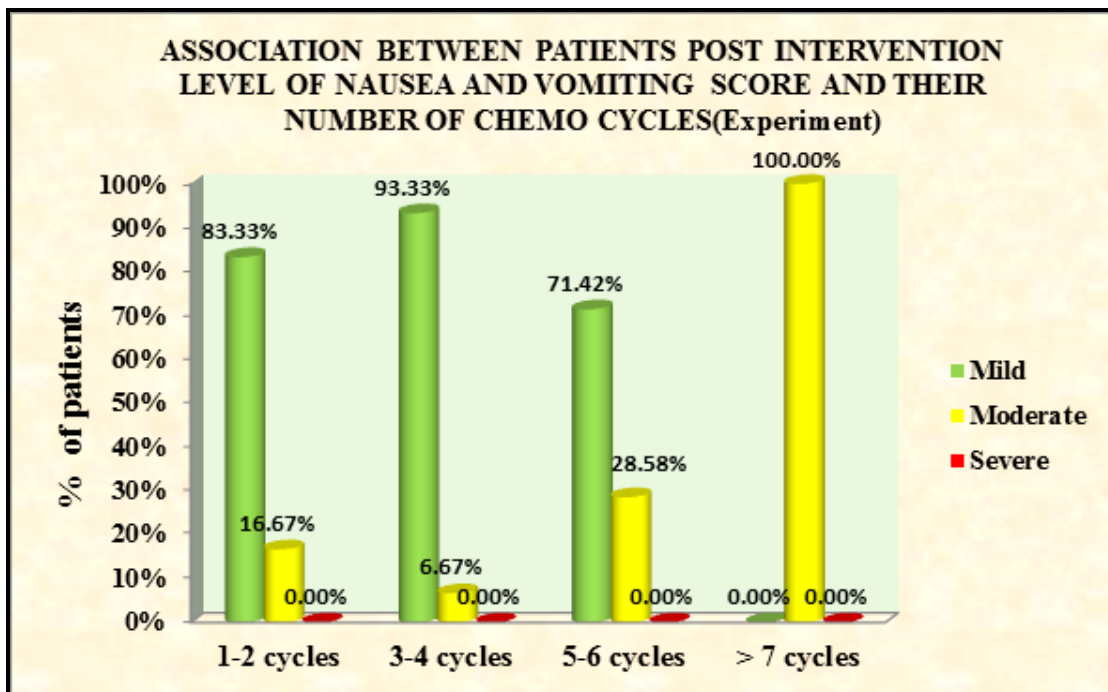
NS=not significant S= Significant P> 0.05 not significant \*P≤0.05 significant

**Table no 4.12 depicts** that the association between patient's post-intervention level of nausea and vomiting reduction score and their clinical variables Less duration of illness patients, less number chemo cycle patients are having more reduction than others. Statistical significance was calculated using chi square test.





*Fig No.4.20. Depicts the association between post intervention level of nausea and vomiting score and their duration of illness in experimental group.*



*Fig No.4.21. Depicts the association between patients post intervention level of nausea and vomiting score and their number of chemotherapy cycle in experimental group*

**Table-4.13: Association between patients post intervention level of nausea and vomiting reduction score and their clinical variables (Control)**

Clinical variables		Post-test Nausea and Vomiting						n	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Clinical diagnosis	Respiratory system	0	0.00%	4	100.00%	0	0.00%	4	$\chi^2=1.27$ P=0.73(NS)
	Digestive system	0	0.00%	7	87.50%	1	12.50%	8	
	Reproductive system	0	0.00%	7	77.78%	2	22.22%	9	
	Others	0	0.00%	8	88.89%	1	11.11%	9	
Duration of illness	Less than 6 months	0	0.00%	15	93.75%	1	6.25%	16	$\chi^2=3.81$ P=0.14(NS)
	6 months-2 years	0	0.00%	8	88.89%	1	11.11%	9	
	More than 2 years	0	0.00%	3	60.00%	2	40.00%	5	
Number of chemotherapy cycles	1-2 cycles	0	0.00%	7	87.50%	1	12.50%	8	$\chi^2=0.38$ P=0.94(NS)
	3-4 cycles	0	0.00%	12	85.71%	2	14.29%	14	
	5-6 cycles	0	0.00%	5	83.33%	1	16.67%	6	
	> 7 cycles	0	0.00%	2	100.00%	0	0.00%	2	
Number of chemotherapy days	1-2 days	0	0.00%	0	0.00%	0	0.00%	0	$\chi^2=0.00$ P=1.00(NS)
	3-4 days	0	0.00%	26	86.67%	4	13.33%	30	
	5-6 days	0	0.00%	0	0.00%	0	0.00%	0	
	> 7 days	0	0.00%	0	0.00%	0	0.00%	0	

Clinical variables		Post-test Nausea and Vomiting						n	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Name of chemotherapy drugs	Docetaxel, cisplatin, 5-Fluorouracil	0	0.00%	2	100.00%	0	0.00%	2	$\chi^2=5.01$ P=0.28(NS)
	Capecitabine, Oxaliplatin	0	0.00%	3	100.00%	0	0.00%	3	
	Docetaxel, Adriamycin, cyclophosphamide	0	0.00%	3	60.00%	2	40.00%	5	
	5-Fluorouracil, Oxaliplatin, leucovorin	0	0.00%	3	75.00%	1	25.00%	4	
	Others	0	0.00%	15	93.75%	1	6.25%	16	

NS=not significant P> 0.05 not significant

Table no 4.13 depicts that the association between patient's post-intervention level of nausea and vomiting reduction score and their clinical variables. None of the variables are significant. Statistical significance was calculated using chi square test.

## **CHAPTER-V DISCUSSION**

This chapter deals with the discussion of the result of the data analysed based on the objectives of the study and hypotheses of the study. The main aim of the study is to assess the effectiveness of Progressive Muscle Relaxation in controlling nausea and vomiting among patients receiving chemotherapy in medical oncology ward, Rajiv Gandhi Government General Hospital, Chennai-03.

Subjects were selected and randomized into experimental and control group and their level of nausea and vomiting were assessed using Rhodes index of Nausea and vomiting. Two samples per day in each group was selected by using lottery method. The intervention of Progressive Muscle Relaxation Technique for the duration of 25-30 minutes and was implemented one hour before the administration of chemotherapy and daily thereafter for the following three days of chemotherapy. For control group follow the routine protocol. The post test was conducted at end of chemotherapy cycle.

### **CHARACTERISTICS OF DEMOGRAPHICAL VARIABLES**

- ❖ 40% of the subjects were between the age group of 56-60 years in the experimental group where as in control group 30% were between 56-60 years.
- ❖ 50% were males and 50% were females in both experimental and control group.
- ❖ 30% of the subjects are illiterate in experimental group, where as in control group 47% of the subjects are having primary school education.

- ❖ 50% of them works as elementary workers in experimental group where as in control group 40% works as elementary workers.
- ❖ 80% in experimental group and 70% in control group were earning Rs.5,000-Rs.10,000 of family income per month.
- ❖ 77% in experimental group and 84% in control group belongs to Nuclear family.
- ❖ 83% of them were married in both groups.
- ❖ 90% of them used to speak Tamil.
- ❖ 83% in experimental group and 73% in control group getting the chemotherapy treatment for the past few months
- ❖ 97% in experimental group and 100% in control group having the complaints of nausea and vomiting during chemotherapy.

## **FINDINGS BASED ON**

***The first objective of the study was to assess the post-intervention level of chemotherapy induced nausea and vomiting in the control group and experimental group.***

Considering nausea, experiment group patients are having 3.67 nausea score and control group patients are having mean of 7.77 nausea score, so the difference is 4.00, this difference is large and it is significant. By analysing vomiting, experiment group patients are having 3.03 vomiting score and control group patients are having mean of 6.97 vomiting score, so the difference is 3.94, this difference is large and it is significant. Considering nausea and vomiting, experiment group patients are having mean of 6.70 nausea and vomiting score and control group patients are having mean of 14.64 nausea and vomiting score, so the difference is 7.94, this difference is large and it is significant.

The study shows that there was significant reduction in nausea and vomiting in experimental group when compared with control group. By comparing with control group, the nausea and vomiting score in experimental group shows more difference, and it is significant. As calculated value is higher than the table value, so research hypothesis was accepted.

The result of the present study findings was also similar to the study conducted by *Mohren shahriari et al. (2017)* in which they aimed to assess the post test level of nausea and vomiting in 50 elderly patients were randomized the experimental and control group. There was statistically significant improvement in QoL ( $P < 0.001$ ) and physical functioning ( $P < 0.001$ ) after Progressive Muscle Relaxation and Guided Imagery Intervention.

*Andreas Charalambous et al. (2016)* in their study found that the mean distress level caused by nausea, vomiting and retching in the control group at baseline was 17.8(6.5) and increased to 22.7(5.3) at follow up. In the interventional group at baseline the mean distress level was 25.4(5.9) while it decreased to 20.6(5.6) at follow up. Moreover, nausea and vomiting according to the EORTC QLQ- C30 reduced significantly in the intervention group ( $t = -8.08$ ,  $P < 0.001$ ) and increased significantly in the controlled group ( $t = 8.63$ ,  $P < 0.001$ )

*Prof.S.Semmalar et al. (2015)*, were conducted Quasi experimental study using evaluative research approach with one group pre and post test design. The sample size of 50 oncology patients are selected for subjects. The result shows that the nausea in pre intervention the average mean score was 6.60 with the SD of 1.70, whereas in the post intervention it was highly reduced to 1.84 with SD of 1.17. In pre-test the mean values for vomiting was 5.61 but in the post test it was obviously reduced to 1.39 with the SD of 2.48, 1.12

respectively. The difference between the pre and post term mean score was evidenced that the statistical significance at 0.05 level.

Globally, it was observed that post test level of nausea and vomiting shows significant reduction in the experimental group when compared with the control group after Progressive Muscle Relaxation, which suggests that there is a need for special attention on teaching and demonstrating the Progressive Muscle Relaxation Technique among oncology patients.

***The second objective of the study is to assess the effectiveness of Progressive Muscle Relaxation technique among chemotherapy patients in oncology ward for experimental group. (Post test level)***

The mean score of nausea in experimental and control group is 3.67 and 7.77 meanwhile the mean score of vomiting in experimental and control group is 3.03 and 6.97. The mean score of nausea and vomiting in experimental and control group is 6.70 and 14.64. Percentage of mean score of nausea in experimental and control group is 30.58% and 64.75%. Likewise, Percentage of mean score of vomiting in experimental and control group is 25.25% and 58.08%. Percentage of mean score of nausea and vomiting in experimental and control group is 27.92% and 61.00%.

Considering chemotherapy patients are gained 34.17% reduction of nausea, 32.38% reduction of vomiting in chemotherapy patients and overall 33.08% of nausea and vomiting reduction, the control group.

The result of the present study was supported by the following studies ***Behnam Masmouri et al. (2019)*** were conducted a study to investigate the effect of relaxation technique on self-efficacy of 80 patients suffering from cancer. A statistically significant difference was observed between the mean self-efficacy indices in the experimental group ( $P=0.001$ ). There was no significant difference in the control

group( $P=0.3$ ). Muscle relaxation can enhance self-efficacy of cancer patients.

*Eran Ben Arye et al. (2018)* were conducted Pragmatic Controlled Patient Centred Trial patient attending the CIM program were considered part of the treatment group; those who choose to receive only standard supportive care as controls. The result shows that there is a significant reduction following relaxation therapy for fatigue score ( $P=0.013$ ), depression ( $P=0.005$ ) and nausea and vomiting ( $P=0.027$ ); and MYCAW score for wellbeing ( $P=0.005$ ) and emotional distress( $P=0.02$ )

*D. Luo et al. (2017)* were Conducted the study is to assess the effectiveness of PMR training in reducing the nausea and vomiting by Highly emetogenic chemotherapy in Chinese lung cancer patients. 72 chemotherapy naïve lung cancer patients were participated. 36 are there in experimental group and 36 in control group. The use of PMRT considerably reduces the vomiting episodes and nausea intensity in the experimental group compared with the control group.

*Berna Kurt et al. (2018)* were conducted Open Labelled Non-Randomized Controlled Clinical Trail stated that Progressive Muscle Relaxation are commonly used non-pharmacological methods to cope with chemotherapy side effects. In intervention group( $n=25$ ) and control group( $n=24$ ). By comparing experimental and control group, the symptoms of nausea, vomiting, fatigue and other physical symptoms were significantly less in intervention group than in the control group. The severity of the symptoms significantly increased in the control group ( $P<0.05$ ).

The study findings suggest that Progressive Muscle Relaxation is found to be effective in reducing level of nausea and vomiting among cancer patients receiving chemotherapy.



Statistically there is a significant difference of nausea and vomiting score between experimental and control group at the significant level of  $P=0.001^{***}$ . It was confirmed by using Student independent t-test. so, there is Hypothesis (H1) was accepted.

***The third objective is to associate the effectiveness of post intervention score with selected demographical variables.***

The findings of the present study showed association between post-intervention level of nausea and vomiting with their selected demographic variables. In study group, elder cancer patients, married patients have reduced level of nausea and vomiting than others. None of the demographic variables in control group are significantly associated with post-intervention level of nausea and vomiting. Statistical significance was calculated using Pearson chi-square test.

Considering the age of patient, elderly patients i.e., 56-60 years of age have reduced level of nausea and vomiting. This is statistically significant with  $\chi^2=7.69$ ,  $P=0.05$  (Significant).

Considering the marital status, married individuals have reduced level of nausea and vomiting. This is statistically significant with  $\chi^2=9.33$ ,  $P=0.02$  (Significant).

The result of the present study was supported by another studies conducted by, *Shu-Fen Chen et al. (2017)*, in which the educational levels between the two groups were significantly different ( $P < 0.01$ ). No significant differences were found between the two groups regarding marriage, work, religion, and surgery. *Mamta Kumari et al. (2016)*, in that the age factors between the two groups were significantly different ( $P=0.05$ ). No significant differences were found between the two groups regarding and income.

The analysis revealed that there was significant association in the post-intervention level of nausea and vomiting among cancer patient receiving chemotherapy in experimental group with the selected demographical variables. Hence hypothesis H2 -there will be a significant association in the post test level of nausea and vomiting among cancer patients receiving chemotherapy in experimental group with selected demographic variables is accepted.

The present study results highlight the effectiveness of Progressive Muscle Relaxation in reducing nausea and vomiting in cancer patients receiving chemotherapy in oncology ward. It is also evident that regular practice of Progressive Muscle Relaxation Technique has indeed positive effects on health and psychological related outcomes such as Quality of Life and subjective well-being. It can effectively decrease the symptoms of anxiety and stress.

## **CHAPTER-VI**

### **SUMMARY, IMPLICATIONS, RECOMMENDATION, LIMITATIONS AND CONCLUSION**

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

#### **6.1 SUMMARY OF THE STUDY**

Nausea and vomiting are common adverse effects of chemotherapy and are among the effects most feared by the patients. Vomiting associated with chemotherapy is triggered centrally by a number of neurotransmitters including substance P and dopamine and peripherally by serotonin via vagal afferent in the GI tract. (John D Hainsworth (2019)). Anti-emetics are the main treatment for nausea and vomiting, but some non-drug treatments can also be used. These involve using your mind and body with the help of a qualified therapist. Non-drug treatments may be used alone for mild nausea and are often helpful for anticipatory nausea and vomiting (American Cancer Society).

So, the investigator undertook the research on “A study to assess the effectiveness of progressive muscle relaxation technique in reducing nausea and vomiting for cancer patient receiving chemotherapy in oncology ward at Rajiv Gandhi Government General Hospital, Chennai-03.

#### **6.2 MAJOR FINDINGS OF THE STUDY**

##### ***6.2.1 Based on the demographic variables***

Regarding their *Age*, Majority 40% of the subjects were between the age group of 56-60 years in the experimental group and 30% in the control group.

Among ***Gender distribution***, Half of the proportion 50% of them were males in the experimental and control group and remaining 50% were females in the experimental and control group respectively.

In accordance with their ***Educational qualification***, 30% were illiterate in experimental group and Maximum 47% of them completed primary school education in control group.

With regards to ***Occupation*** Majority 50% of them works as elementary workers in experimental group and 40% in control group.

In accordance with ***Monthly income***, Maximum of family having the income status of Rs.5,000- Rs.10,000. In experimental group 80% and in control group 70%.

Regarding the ***Type of family***, Most of them belongs to Nuclear family. In experimental group 77% and in control group 83%.

With regards to ***Marital status***, Majority 83% of them were married in both groups.

Considering the ***Language known***, Maximum 90% of them used to talk Tamil.

According to ***Previous chemotherapy treatment***, Majority 83% in experimental group and 73% in control group getting the chemotherapy treatment for the past few months.

With regards to ***History of nausea and vomiting***, Majority 97% in experimental group and 100% in control group having the complaints of nausea and vomiting during chemotherapy.

### ***6.2.2. Based on Clinical Variables***

Regarding the ***Type of cancer***: Majority 43% of the subject had digestive system carcinomas (such as carcinoma in buccal mucosa,

tongue, stomach, OG junction, rectosigmoid, gall bladder, rectum) whereas in control group 30% of the subjects had reproductive system (carcinoma in breast, carcinoma in ovary, carcinoma in testis) and some other types (Hodgkin's lymphoma, Non-Hodgkin's lymphoma and sarcomas).

According to ***Duration of illness***, Maximum 60% of the subject in experimental group avail the chemotherapy treatment for the duration of less than 6 months and (53%) of the subjects in the control group avail the same treatment as experimental group.

With regards to ***Number of chemotherapy cycle***, Among the subjects 50% in experimental group undergone 3-4 cycles of chemotherapy and 47% in control group undergone the same treatment as experimental group.

In accordance with ***Number of chemotherapy days***, Majority 97% of the subjects in experimental group received chemotherapy drugs for 3-4 days, 100% in control group.

### ***6.2.3. Based on observational checklist of the patients***

***Pulse rate:*** In experimental group 100% of the subjects have the pulse rate of 76-86 beats/min, 97% in control group.

***Respiratory rate:*** Majority 83% of the subjects in both experimental and control group have the respiratory rate of 16-18 respiration/minute.

***Blood Pressure:*** Among 70% of the subject in experimental group have the blood pressure range of 120/80-130/90 mm of hg, 87% in control group.

#### ***6.2.4. Based on Post-intervention level of nausea and vomiting:***

The level of nausea and vomiting score in experiment and control group. In experiment group, 83.33% of them are having mild level of nausea and vomiting score, 16.67% of them are having moderate level of nausea and vomiting and none are having severe level of nausea and vomiting score.

In control group, none of them are having mild level of nausea and vomiting score, 80.00% of them are having moderate level of nausea and vomiting and 20% are having severe level of nausea and vomiting score.

#### ***6.2.5. Finding based on the effectiveness of Progressive Muscle Relaxation Technique on nausea and vomiting in the experimental group.***

Considering Nausea patients are gained 34.17% reduction, 32.38% of vomiting reduction and overall 33.08 % of nausea& vomiting reduction, then control group.

#### ***6.2.6. Findings based on the association between patient's post test level of nausea and vomiting reduction score with demographic and clinical variables.***

The association between patient's post-test level of nausea and vomiting reduction score and their demographic variables. Elder patients and married patients are having more reduction than others. Statistical significance was calculated using chi square test.

The association between patient's post-test level of nausea and vomiting reduction score and their clinical variables Less duration of illness patients, less number chemo cycle patients are having more reduction than others. Statistical significance was calculated using chi square test.

## **6.3 IMPLICATIONS**

The findings of the study have the following implications in different areas of nursing that is, nursing practice, nursing education, nursing administration and nursing research. By evaluating the effectiveness of Progressive Muscle Relaxation in reducing nausea and vomiting among cancer patient receiving chemotherapy in Medical Oncology ward. The investigator received a clear picture regarding the different steps to be taken in different fields to improve the same.

### **6.3.1 NURSING PRACTICE**

- ❖ Nurses play a vital role in the medical oncology department, since chemotherapy is the major treatment modality for the cancer treatment.
- ❖ Nurses must have adequate knowledge regarding the side effect of chemotherapy and its management.
- ❖ Nurses should possess the skill of assessing the severity of nausea and vomiting. Especially nurses, may spend considerable time for providing practical and emotional support for cancer patients and it is very frustrating for them when symptoms such as nausea and vomiting cannot be controlled.
- ❖ Control of nausea and vomiting may be viewed as a challenge for the oncology practitioner.
- ❖ Therefore, in view of the close relationship between physiological and psychological factors, Psychobehavioural techniques such as Progressive Muscle Relaxation training (PMRT) could be taught to the patients to decrease nausea and vomiting.
- ❖ Ongoing in-service education programs should be designed and implemented at Medical Oncology unit to improve nurse's 13

### **6.3.2 NURSING EDUCATION**

- ❖ Prior to implementation of this type of intervention, the nurse must have a strong body of knowledge with regards to cancer, its treatment modalities, side effect of chemotherapy and its management.
- ❖ Nursing students should be exposed to clinical areas and learn regarding its management. The basic nursing curriculum must be modified to adopt to these newer modalities of intervention.
- ❖ The nurse educator can use this protocol in teaching the student nurses (future nurses) to implement this into their practice.
- ❖ The findings of the study will help the nurses to give more importance for planning and organizing programme regarding Progressive Muscle Relaxation Technique, so that they can implement in the clinical practice.
- ❖ Among all clinical nursing protocol this PMRT protocol must be integrated as a routine practice.
- ❖ Educational training program for nurses should include training of Progressive Muscle Relaxation Technique among cancer patients receiving chemotherapy admitted in Medical Oncology Ward.
- ❖ The nurse should be made aware of their responsibility in care of cancer patient receiving chemotherapy treatment while decreasing the level of nausea and vomiting by trained them PMRT.

### **6.3.3. NURSING ADMINISTRATION**

- ❖ Technological advances and ever-growing challenges of nursing, the nurse administrators have responsibility to provide the nurses with substantive educational training programme.



- ❖ Nursing administrator should provide necessary facilities and opportunities for nursing students and staff.
- ❖ In each hospital, there should be specialized units for developing nurse's knowledge and practices (training unit) based on nurses needs for practices.
- ❖ The hospital administrative authority should develop up-dated Progressive Muscle Relaxation Technique for nurses and should be annually reviewed and approved by the quality assurance committee.
- ❖ Provide adequate medical and nursing supervision, guidance and regular feedback to nurses concerning their knowledge, attitude and performance.
- ❖ Advanced booklets and electronic media regarding PMRT should be available at Medical Oncology wards.
- ❖ Nursing administrator has more responsibility as a supervisor on creating awareness among nurses regarding PMRT by facilitating free distribution of booklets, handouts, regularly in outpatient department of hospitals.

#### **6.3.4. NURSING RESEARCH**

- ❖ The findings can be utilized as evidence-based practice in clinical practice beneficial for nurses who work in Medical Oncology ward.
- ❖ Future studies can be conducted on effect of PMRT in reducing nausea and vomiting among cancer patient receiving chemotherapy for longer duration.

- ❖ There is growing need for furnishing nursing research in all the areas of care. The nurse researcher especially beginners need to enhance their quest for knowledge and practice. The nurse researcher may effectively use result of available patient and recommended on the importance of application of PMRT.
- ❖ The study findings can be a baseline for further studies to build upon for improving the body of knowledge in nursing.
- ❖ The study findings can be effectively utilized by the emerging researchers.

#### **6.4. LIMITATIONS OF THE STUDY**

- ❖ Some subjects showed hesitance to practice Progressive Muscle Relaxation Technique.
- ❖ Some subjects felt difficulty in practicing the Progressive Muscle Relaxation Technique.
- ❖ The investigator could get more of abroad studies than Indian studies to support the present study.

#### **6.5. RECOMMENDATION**

- ❖ The investigator recommends the following for further research
- ❖ The study can be replicated with large sample size to generalize the findings.
- ❖ The same study can be conducted to reducing postoperative nausea and vomiting.
- ❖ A study to assess the knowledge and attitude of nurses towards Progressive Muscle Relaxation Technique in reducing chemotherapy induced nausea and vomiting can be conducted.

- ❖ A study can be conducted with other nonpharmacological interventions in reducing chemotherapy induced nausea and vomiting.

## **6.6. CONCLUSION**

Nurses must have holistic knowledge regarding use of PMRT in decreasing nausea and vomiting among cancer patient receiving chemotherapy. Nurses play a vital role in reducing side effects of chemotherapy especially nausea and vomiting in cancer patients. The present study assessed the effectiveness of Progressive Muscle Relaxation Technique among patients receiving chemotherapy. The result revealed that Progressive Muscle Relaxation Technique had a significant effect on the level of chemotherapy induced nausea and vomiting. Hence the investigator concludes that Progressive Muscle Relaxation as a non-pharmacological intervention is effective in reducing chemotherapy induced nausea and vomiting among patients receiving chemotherapy.

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# **TOOLS FOR DATA COLLECTION**

## **SECTION-A**

### **DEMOGRAPHICAL VARIABLES**

#### **SAMPLE NO:**

#### **1.AGE OF THE CLIENT**

- A) 25-35 Years
- B) 36-45 Years
- C) 46-55 Years
- D) 56-60 Years.

#### **2.GENDER OF THE CLIENT**

- A) Male
- B) Female.

#### **3.EDUCATIONAL QUALIFICATION**

- A) Professionals
- B) Graduate or postgraduate
- C) Intermediate or post-high school diploma
- D) High school certificate
- E) Middle school certificate
- F) Primary school certificate
- G) Illiterate

#### **4.OCCUPATION OF THE CLIENT**

- A) Legislators, Senior officials and managers.
- B) Professionals
- C) Technicians and associate professionals
- D) Clerk
- E) Skilled workers and shop and market sales workers
- F) Skilled agricultural and fishery workers
- G) Craft and related trade workers
- H) Plant and machine operators and assemblers
- I) Elementary occupation
- J) Unemployed.

**5.INCOME OF THE FAMILY**

- A) Below Rs.5,000
- B) Rs.5,000-Rs.10,000
- C) Rs.10,001-Rs.15,000
- D) Above Rs.15,000.

**6.TYPE OF FAMILY**

- A) Nuclear family
- B) Joint family
- C) Extended family.

**7.MARITAL STATUS OF THE CLIENT**

- A) Married
- B) Unmarried
- C) Separated
- D) Widow/widower.

**8.LANGUAGE KNOWN**

- A) Tamil
- B) English
- C) Both A and B.
- D) Other Language.

**9.HOW LONG DOES THE PATIENT UNDERGONE CHEMOTHERAPY TREATMENT**

- A) For the past few months
- B) For the past one year
- C) More than one year.

**10.IF HE/SHE HAVING THE COMPLAINTS OF NAUSEA AND VOMITING DURING PREVIOUS CHEMOTHERAPY CYCLE/DAY**

- A) Yes
- B) No.

**SECTION-B**  
**CLINICAL DATA**

**SAMPLE NO:**

**1.Clinical diagnosis:**

- A) Respiratory system
- B) Digestive system
- C) Reproductive system
- D) Others.

**2.Duration of illness**

- A) Less than 6 months
- B) 6 months-2 years
- C) More than 2 years.

**3.Number of chemotherapy cycles**

- A) 1-2 cycles
- B) 3-4 cycles
- C) 5-6 cycles
- D) More than 7 cycles

**4.Number of chemotherapy days**

- A) 1-2 days
- B) 3-4 days
- C) 5-6 days
- D)  $\geq 7$  days.

**5.Name of chemotherapy drugs**

- A) Docetaxel, cisplatin,5-Flurouracil
- B) Capecitabine, Oxaliciplatin
- C) Docetaxel, Adriamycin, cyclophosphamide
- D) 5-Flurouracil, Oxaliciplatin, leucovorin
- E) Others.

**SECTION-C**  
**OBSERVATIONAL CHECKLIST**

**Sample no:**

**Date:**

**Time:**

<b>S.no</b>	<b>Vital signs</b>	<b>Day -1 Chemotherapy</b>	<b>Day -2 Chemotherapy</b>	<b>Day-3 chemotherapy</b>
<b>1</b>	<b>PULSE in beats/min</b> A) Less than 76 B) 76-86 C) More than 86			
<b>2</b>	<b>RESPIRATION in Res/min</b> A) Less than 16 B)16-18 C)More than 18.			
<b>3</b>	<b>BLOOD PRESSURE in mm of Hg.</b> A) Below 120/80 B)120/80-130/90 C)Above 130/90.			



(SECTION-D)

**MODIFIED RHODES INDEX OF NAUSEA AND VOMITING SCALE**

**SAMPLE NO:**

**DATE:**

**TIME:**

S. No	Questions	Score-0	Score-1	Score-2	Score-3	Score-4
1.	In the last 12 hrs, you have felt nauseated _____ times.	Not at all	1-2 times	3-4 times	5-6 times	7 or more times.
2.	In the last 12 hrs, you have felt nauseated or sick to your stomach.	Not at all	1hr or less	2-3hrs	4-6hrs	More than 6hrs
3.	In the last 12hrs, from nausea or sick to your stomach you have felt _____ distress.	No	Mild	Moderate	Great	Severe
4.	In the last 12hrs, you threw up _____ times.	Not at all	1-2 times	3-4times	5-6times	7 or more times
5.	In the last 12hrs, each time you threw up, you produced a _____ amount.	I didn't threw up	Small upto ½ cup	Moderate ½ to 2 cups	Large 2-3 cups	Very large 3 cups or more
6.	In the last 12hrs, from vomiting or throw up you have felt _____ distress.	No	Mild	Moderate	Great	Severe

## **SCORING AND INTERPRETATION**

<b>S.No</b>	<b>CLASSIFICATION</b>	<b>SCORES</b>
1.	Mild Nausea and Vomiting	1-8
2.	Moderate Nausea and Vomiting	9-16
3.	Severe Nausea and Vomiting	17-24

### **SUB SCALE FOR NAUSEA:**

<b>S.No</b>	<b>CLASSIFICATION</b>	<b>SCORES</b>
1.	Mild Nausea	1-4
2.	Moderate Nausea	5-8
3.	Severe Nausea	9-12

### **SUB SCALE FOR VOMITING:**

<b>S.No</b>	<b>CLASSIFICATION</b>	<b>SCORES</b>
1.	Mild Vomiting	1-4
2.	Moderate Vomiting	5-8
3.	Severe Vomiting	9-12

## பகுதி-அ

### சுயசமூக குறிப்பு

#### 1. வயது

- அ) 25-35 வருடங்கள்
- ஆ) 36-45 வருடங்கள்
- இ) 46-55 வருடங்கள்
- ஈ) 56-60 வருடங்கள்

#### 2. நோயாளியின் பாலினம்

- அ) ஆண்
- ஆ) பெண்

#### 3. கல்வி தகுதி

- அ) தொழில் சார்ந்த படிப்பு
- ஆ) பட்டதாரி
- இ) பட்டய படிப்பு
- ஈ) மேல் நிலை கல்வி
- உ) நடு நிலை கல்வி
- ஊ) ஆரம்ப கல்வி
- எ) படிப்பறிவின்மை

#### 4. தொழில்

- அ) உயர் அதிகாரி, மேலாளர்
- ஆ) தொழில் செய்பவர்
- இ) தொழில்நுட்பவியலாளர்
- ஈ) எழுத்தர்,
- உ) கடை மற்றும் சந்தை விற்பனைதொழிலாளர்
- ஊ) விவசாயம் மற்றும் மீன் பிடி தொழில் செய்பவர்
- எ) கைவினை மற்றும் வர்த்தக தொழிலாளர்
- ஏ) இயந்திர ஆபரேட்டர்கள்
- ஐ) அடிப்படை தொழிலாளர்கள்
- ஓ) வேலையில்லாதவர்கள்

#### 5. மாத வருமானம்(ரூபாயில்)

- அ) 5,000க்கு கீழ்
- ஆ) 5000-10,000
- இ) 10,001-15,000
- ஈ) 15,000 க்கு மேல்

#### 6. குடும்ப வகை

- அ) தனி குடும்பம்
- ஆ) கூட்டு குடும்பம்
- இ) விரிவுபட்ட குடும்பம்

#### 7. திருமண நிலை

- அ) திருமணமானவர்
- ஆ) திருமணமாகாதவர்
- இ) தனித்து வாழ்பவர்
- ஈ) விதவியர்

8) அறிந்த மொழி

- அ) தமிழ்
- ஆ) ஆங்கிலம்
- இ) இரண்டும்
- ஈ) வேற்று மொழி அறிந்தவர்

9) எவ்வளவு காலமாக கீமோதெரபி சிசிச்சையினை பெற்று வருகிறீர்கள்?

- அ) சில மாத காலங்கள்
- ஆ) கடந்த ஒரு வருடங்களாக
- இ) ஒரு வருடங்களுக்கு மேலாக.

10) முன்பு நீங்கள் கீமோதெரபி சிசிச்சையினை பெற்று வந்த பொழுது குமட்டல் மற்றும் வாந்தி ஆகிய பக்கவிளைவுகள் ஏற்பட்டதா?

- அ) ஆம்
- ஆ) இல்லை

## தசை தளர்வு உக்திகள்.

- தசை தளர்வு உக்திகளில் உடலிலுள்ள தசைகளுக்கு மென்மையாக அழுத்தம் மற்றும் தளர்வடைதல் பயிற்சியை வழங்குதலாகும்.
- தசை தளர்வு உக்திகளை கையாளும் பொழுது நம் கைகளில் இருந்து அதாவது (கை தசைகளிலிருந்து, முகம், கழுத்து பகுதி, நெஞ்சக பகுதி, வயிற்று பகுதி, தொடை,கால்,பாதம் என எல்லாவற்றிலும் முறையாக படிப்படியாக தசைகளுக்கு பயிற்சி அளிப்பது அவசியம்).



### படி 1:

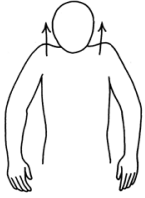
- எந்தவித இடர்பாடுகளும்மின்றி வசதியான இடத்தில் அமரவோ(அல்லது) படுத்தல் வேண்டும்.
- கை மற்றும் கால்களை இலகுவாக வைத்தல் வேண்டும்.ஒன்றன் மேல் ஒன்று வைத்தல் கூடாது. கண்களை மூடிகொள்ளுதல் அவசியம்.நன்கு உட சுவாசம் எடுத்து வெளிவிடுதல் வேண்டும்.அமைதியான மனநிலையை உணர்தல் வேண்டும்.

### படி 2:

- உங்களது உள்ளங்கையை மென்மையாக மடக்கி விரல்களுக்கு அழுத்தம் தர வேண்டும்.
- பின்பு உங்கள் முழங்கையை மடக்கி தோல்பட்டை அளவிற்கு வைத்தல் வேண்டும்.அழுத்தத்தை உணர்தல் வேண்டும்.
- பின்பு அந்த தசைகளை தளர்த்துதல் வேண்டும்.பின்பு இடது கைக்கும் இதனையே பின்பற்ற வேண்டும்.



### படி 3:



- உங்களது தோல்பட்டையை உயர்த்துதல் வேண்டும்.
- பின்பு தளர்த்துதல் வேண்டும்.
- முன் இருந்த இருக்கத்திற்கும் இப்பொழுதுள்ள நிலையை ஒப்பிட்டு பார்க்கவும்.

### படி 4:

- உங்களது புருவங்களை உயர்த்துதல் வேண்டும்.அழுத்தத்தை உணர்தல் அவசியம்.பின்பு மென்மையாக புருவங்களை தளர்த்துதல் வேண்டும்.
- அதனை தொடர்ந்து கண்களை இறுக்கமாக மூடுதல் வேண்டும்.பின்பு தளர்த்தல் வேண்டும்.



### படி 5:



- பற்களை (மேல்வரிசை-கீழ்வரிசை) இறுக்கமாக கடித்தல் வேண்டும். இப்பொழுது அழுத்தமானது உங்கள் தாடைகளில் உணரலாம். பின்பு தாடைகளை தளர்த்தல் வேண்டும்.
- பின்பு உங்கள் நாக்கினை கொண்டு மேல் அண்ணத்திற்கு அழுத்தம் தரல் வேண்டும். பின்பு தளர்த்தல் வேண்டும்.
- உங்கள் உதட்டிற்கும் அழுத்தம் கொடுத்து பின்பு தளர்த்தல் வேண்டும்.



### படி 6:

- கழுத்தை வலது பக்கமாக சாய்தல் வேண்டும் பின்பு இடது பக்கமாக சாய்தல் வேண்டும். சம நிலைக்கு கொண்டு வருதல் வேண்டும். கழுத்தை பின் புறமாக சாய்த்தல் வேண்டும். பின்பு தளர்த்தல் வேண்டும்.
- அதனை தொடர்ந்து உங்கள் தாடையை கீழ்நோக்கி சாய்த்தல் வேண்டும். இதனை செய்வதன் மூலமாக கழுத்தில் அழுத்தம் ஏற்படுதலை உணரலாம். பின்பு தளர்த்தல் வேண்டும். கழுத்தை சீராக வைத்தல் வேண்டும்.



### படி 7:

- நன்கு உட்கவாசம் எடுத்து வெளிவிடுதல் வேண்டும். உடலில் உள்ள தசைகளை நன்றாக தளர்த்தி கொள்ளுதல் வேண்டும்.



### படி 8:

- உட்கவாசம் எடுத்தல் வேண்டும், அச்சமயம் வயிற்றிலுள்ள தசைகளுக்கு அழுத்தம் கொடுத்து தளர்த்தல் வேண்டும்.

### படி 9:



- தொடை பகுதிக்கு அழுத்தம் தரல் வேண்டும். பின்பு தளர்த்தல் வேண்டும். பின்பு பாதத்தை உள் நோக்கி மடித்தல் வேண்டும். பின்பு தளர்த்தல் வேண்டும்.

## படி 10:

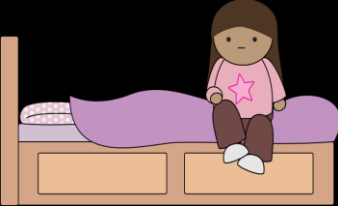
- உங்கள் விரல்களை வெளிநோக்கி மடித்தல் வேண்டும்.பின்பு தளர்த்தல் வேண்டும்.



- பின்பு தலை முதல் பாதம் வரை உள்ள தசைகளை தளர்த்தல் வேண்டும்.



- பின்பு ஒன்றிலிருந்து இருபது வரை எண்களை கூறுதல் வேண்டும்.



- இடது பக்கமாக படுத்தல் வேண்டும்.

- பின்பு அமர்ந்து கண்களை திறக்க வேண்டும்.
- சவகரியமாக உணர்தல் அவசியம்.

## சுய ஒப்புதல் படிவம் (ஆய்வு குழு)

**ஆராய்ச்சி தலைப்பு :** தசை தளர்வு உத்திகளை உபயோகித்து புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைக்கும் பொருட்டு இந்த ஆராய்ச்சியினை மேற்கொண்டுள்ளேன்

ஆய்வாளர் பெயர் : கு.பிரியதர்ஷினி

பங்கேற்பாளர் பெயர் :

தேதி :

வயது/பாலினம் :

- ஆய்வாளர் மேற்கொள்ளும் ஆராய்ச்சியில் பங்கேற்க யாருடைய கட்டாயமுமின்றி முழுமனதுடனும் சுயநினைவுடனும் சம்மதிக்கிறேன்.
- ஆய்வாளர் மேற்கொள்ள போகும் பரிசோதனைகளை மிக தெளிவாக விளக்கிக்கூறினார்.
- எனக்கு விருப்பமில்லாத பட்சத்தில் ஆராய்ச்சியிலிருந்து எந்நேரமும் விலகலாம் என்பதையும் ஆய்வாளர் மூலம் அறிந்து கொண்டேன்.
- இந்த ஆராய்ச்சி ஒப்புதல் கடிதத்தில் உள்ள விவரங்களை நன்கு புரிந்து கொண்டேன். எனது உரிமைகள் மற்றும் கடமைகள் ஆராய்ச்சியாளர் மூலம் விளக்கப்பட்டது.
- நான் ஆராய்ச்சியாளருடன் ஒத்துழைக்க சம்மதிக்கிறேன். எனக்கு ஏதேனும் உடல்நலக்குறைவு ஏற்பட்டால் ஆராய்ச்சியாளரிடம் தெரிவிப்பேன்.
- நான் வேறு எந்த ஆராய்ச்சிலும் தற்சமயம் இடம்பெறவில்லை என்பதை தெரிவித்துக்கொள்கிறேன்.
- இந்த ஆராய்ச்சியின் தகவல்களை வெளியிட சம்மதிக்கிறேன். அப்படி வெளியிடும்போது என் அடையாளம் வெளிவராது என்பதை அறிவேன்.
- எனக்கு இந்த ஒப்புதல் கடிதத்தின் நகல் கொடுக்கப்பட்டது.

ஆய்வாளர் கையொப்பம்

பங்கேற்பாளர் கையொப்பம்

தேதி

தேதி



## ஆராய்ச்சி தகவல் தாள்(ஆய்வு குழு)

**ஆராய்ச்சி தலைப்பு :** தசை தளர்வு உத்திகளை உபயோகித்து புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைக்கும் பொருட்டு இந்த ஆராய்ச்சியினை மேற்கொண்டுள்ளேன்.

ஆய்வாளர் பெயர் : கு.பிரியதர்ஷினி  
பங்கேற்பாளர் பெயர் :  
தேதி :  
வயது /பால் :

- ஆய்வாளர் மேற்கொள்ளும் ஆராய்ச்சியில் பங்கேற்க யாருடைய கட்டாயமுமின்றி முழுமனதுடன் சம்மதிக்கிறேன்.
- இதில் பங்கேற்பதன் நோக்கம்-இந்த ஆராய்ச்சியின் தகவல்களை தெரிந்து கொள்வதற்காகவும், அதனை பயன்படுத்துவதற்காக மட்டும் தான்.

இந்த ஆராய்ச்சியின் நோக்கம் தசை தளர்வு உத்திகளை பயன்படுத்துவதன் மூலம் புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தி ஆகியன எந்த அளவிற்கு குறைகின்றன என்பதை தெரிவுசெய்வதற்காக மேற்கொள்ளப்பட்டது.மேலும் அவர்களுக்கு தசை தளர்வு உத்திகளை பற்றிய பயிற்சிகளை அளிப்பதற்கும் இது சிறந்த ஊடகமாக கையாளப்படுகிறது.

**ஆராய்ச்சி மேற்கொள்ளும் முறை :** தசை தளர்வு உத்திகளை உபயோகித்து புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைக்கும் பொருட்டு இந்த ஆராய்ச்சியினை மேற்கொண்டுள்ளேன்

**இதனால் ஆய்வாளருக்கான பயன் :** கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைப்பதற்கு தசை தளர்வு உத்திகள் எவ்வாறு பயனளிக்கிறது என்பதை கண்டறிவதற்கு இந்த ஆராய்ச்சி ஒரு திறவு கோளாக உள்ளது.

**இதனால் பங்கேற்பாளருக்கான பயன் :**இந்த ஆய்வு தசை தளர்வு உத்திகளை உபயோகித்து புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைகிறது.

- ❖ ஆராய்ச்சியில் பங்கேற்கவில்லை என்றாலும், உங்களின் சராசரி வாழ்க்கை முறையில் எந்த வித மாற்றமும் ஏற்படாது என்பதை தெரிவித்துக்கொள்கிறேன்.
- ❖ இந்த ஆராய்ச்சியில் பங்கேற்க விருப்பம் இல்லை என்றால் உங்களின் முழுமனதுடன் நீங்கள் இந்த ஆராய்ச்சியில் இருந்து விலகி கொள்ளலாம் என்பதை தெரிவித்துக்கொள்கிறேன்.
- ❖ இந்த ஆராய்ச்சியில் உங்களின் தகவல்களை பாதுகாப்பாக வைத்துக்கொள்கிறேன் என்பதை தெரிவித்துக்கொள்கிறேன்.
- ❖ இந்த ஆராய்ச்சியின் தகவல்களை வெளியிடும் போது, உங்களை பற்றிய அடையாளங்கள் வெளிவராது என்பதை உறுதி கூறுகிறேன்.

ஆய்வாளர் கையொப்பம்  
தேதி

பங்கேற்பாளர் கையொப்பம்  
தேதி

### சுய ஒப்புதல் படிவம் (கட்டுப்பாட்டு குழு)

**ஆராய்ச்சி தலைப்பு :** புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைக்கும் பொருட்டு வழக்கமாக கையாளப்படும் சிகிச்சை முறையினை கொண்டு இந்த ஆராய்ச்சியினை மேற்கொண்டுள்ளேன்.

ஆய்வாளர் பெயர் : கு.பிரியதர்ஷினி

பங்கேற்பாளர் பெயர் :

தேதி :

வயது/பாலினம் :

- ஆய்வாளர் மேற்கொள்ளும் ஆராய்ச்சியில் பங்கேற்க யாருடைய கட்டாயமுமின்றி முழுமனதுடனும் சுயநினைவுடனும் சம்மதிக்கிறேன்.
- ஆய்வாளர் மேற்கொள்ள போகும் பரிசோதனைகளை மிக தெளிவாக விளக்கிக்கூறினார்.
- எனக்கு விருப்பமில்லாத பட்சத்தில் ஆராய்ச்சியிலிருந்து எந்நேரமும் விலகலாம் என்பதையும் ஆய்வாளர் மூலம் அறிந்து கொண்டேன்.
- இந்த ஆராய்ச்சி ஒப்புதல் கடிதத்தில் உள்ள விவரங்களை நன்கு புரிந்து கொண்டேன். எனது உரிமைகள் மற்றும் கடமைகள் ஆராய்ச்சியாளர் மூலம் விளக்கப்பட்டது.
- நான் ஆராய்ச்சியாளருடன் ஒத்துழைக்க சம்மதிக்கிறேன். எனக்கு ஏதேனும் உடல்நலக்குறைவு ஏற்பட்டால் ஆராய்ச்சியாளரிடம் தெரிவிப்பேன்.
- நான் வேறு எந்த ஆராய்ச்சிலும் தற்சமயம் இடம்பெறவில்லை என்பதை தெரிவித்துக்கொள்கிறேன்.
- இந்த ஆராய்ச்சியின் தகவல்களை வெளியிட சம்மதிக்கிறேன். அப்படி வெளியிடும்போது என் அடையாளம் வெளிவராது என்பதை அறிவேன்.
- எனக்கு இந்த ஒப்புதல் கடிதத்தின் நகல் கொடுக்கப்பட்டது.

ஆய்வாளர் கையொப்பம்

பங்கேற்பாளர் கையொப்பம்

தேதி

தேதி

## **ஆராய்ச்சி தகவல் தாள் (கட்டுப்பாட்டு குழு)**

**ஆராய்ச்சி தலைப்பு :** புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைக்கும் பொருட்டு வழக்கமாக கையாளப்படும் சிகிச்சை முறையினை கொண்டு இந்த ஆராய்ச்சியினை மேற்கொண்டுள்ளேன்.

ஆய்வாளர் பெயர் : கு.பிரியதர்ஷினி  
பங்கேற்பாளர் பெயர் :  
தேதி :  
வயது /பால் :

- ஆய்வாளர் மேற்கொள்ளும் ஆராய்ச்சியில் பங்கேற்க யாருடைய கட்டாயமுமின்றி முழுமனதுடன் சம்மதிக்கிறேன்.
- இதில் பங்கேற்பதன் நோக்கம்-இந்த ஆராய்ச்சியின் தகவல்களை தெரிந்து கொள்வதற்காகவும், அதனை பயன்படுத்துவதற்காக மட்டும் தான்.
- இந்த ஆராய்ச்சியின் நோக்கம் புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைக்கும் பொருட்டு வழக்கமாக கையாளப்படும் சிகிச்சை முறையினை உபயோகித்தல்

**ஆராய்ச்சி மேற்கொள்ளும் முறை :** புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைக்கும் பொருட்டு வழக்கமாக கையாளப்படும் சிகிச்சை முறையினை கொண்டு இந்த ஆராய்ச்சியினை மேற்கொண்டுள்ளேன்.

**இதனால் ஆய்வாளருக்கான பயன் :** கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைப்பதற்கு வழக்கமாக கையாளப்படும் சிகிச்சை முறைகள் எவ்வாறு பயனளிக்கிறது என்பதை கண்டறிவதற்கு இந்த ஆராய்ச்சி ஒரு திறவு கோளாக உள்ளது.

**இதனால் பங்கேற்பாளருக்கான பயன் :** இந்த ஆய்வின் மூலம் வழக்கமாக கையாளப்படும் சிகிச்சை முறைகளை உபயோகித்து புற்றுநோய்கான கீமோதெரபி சிகிச்சையினை பெற்று வரும் நோயாளிகளுக்கு ஏற்படும் பக்கவிளைவான குமட்டல் மற்றும் வாந்தியை குறைக்கிறது.

- ❖ ஆராய்ச்சியில் பங்கேற்கவில்லை என்றாலும், உங்களின் சராசரி வாழ்க்கை முறையில் எந்த வித மாற்றமும் ஏற்படாது என்பதை தெரிவித்துக்கொள்கிறேன்.
- ❖ இந்த ஆராய்ச்சியில் பங்கேற்க விருப்பம் இல்லை என்றால் உங்களின் முழுமனதுடன் நீங்கள் இந்த ஆராய்ச்சியில் இருந்து விலகி கொள்ளலாம் என்பதை தெரிவித்துக்கொள்கிறேன்.
- ❖ இந்த ஆராய்ச்சியில் உங்களின் தகவல்களை பாதுகாப்பாக வைத்துக்கொள்கிறேன் என்பதை தெரிவித்துக்கொள்கிறேன்.
- ❖ இந்த ஆராய்ச்சியின் தகவல்களை வெளியிடும் போது, உங்களை பற்றிய அடையாளங்கள் வெளிவராது என்பதை உறுதி கூறுகிறேன்.

ஆய்வாளர் கையொப்பம்  
தேதி

பங்கேற்பாளர் கையொப்பம்  
தேதி

## **INFORMED CONSENT FORM**

Title of the study: **“A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN REDUCING NAUSEA AND VOMITING FOR CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY WARD AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03.”**

Sample no \_\_\_\_\_ :

Name of the participant \_\_\_\_\_ :

Name of the principle investigator : G.PRIYADHARSHINI.

Whether the participant’s consent was asked : Yes/No

[ If the answer to the above question is yes, write the following phrase:

You agree with the manner to participate in the study].

Name and signature of/ thumb impression of the participant/  
parent/guardian.

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Name and signature of the investigator or  
his representative obtaining consent:

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

## **INFORMATION TO PARTICIPANTS**

**Title : A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN REDUCING NAUSEA AND VOMITING FOR CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY WARD AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL CHENNAI-03.”**

Investigator : G.PRIYADHARSHINI.  
Name of the Participant :  
Date :  
Age/sex :

You are invited to take part in this study. The information in this document is meant to help you decide whether or not to take part. Please feel free to ask if you have any queries or concerns.

You are being asked to Cooperative in this study being conducted in oncology ward at Rajiv Gandhi Government General Hospital Chennai-03.

### **What is the Purpose of the Research (explain briefly)**

This research is conducted to assess the effectiveness of progressive muscle relaxation technique in reducing nausea and vomiting for cancer patients receiving chemotherapy in oncology ward at Rajiv Gandhi Government General Hospital chennai-03.” .

We have obtained permission from the Institutional Ethics Committee.

### **Study Procedures**

- ❖ Study will be conducted after approval of ethics committee
- ❖ A written formal permission will be obtained from authorities of Rajiv Gandhi Government General Hospital at Chennai to conduct study.
- ❖ The purpose of study will be explained to the participants.
- ❖ The investigator will obtain informed consent.

### **Possible benefits to other people**

The result of the research may provide benefits and also empathetic care to them by investigator.

### **Confidentiality of the information obtained from you**

You have the right to confidentiality regarding the privacy of your personal details. The information from this study, if published in scientific journals or presented at scientific meetings, will not reveal your identity.

### **How will your decision not to participate in the study affect you?**

Your decisions not to participate in this research study will not affect your activity of daily living, medical care or your relationship with investigator or the institution.

### **Can you decide to stop participating in the study once you start?**

The participation in this research is purely voluntary and you have the right to withdraw from this study at any time during course of the study without giving any reasons.

Your Privacy in the research will be maintained throughout study. In the event of any publications or presentation resulting from the research, no personally identifiable information will be shared.

**Signature of Investigator**

Date:

**Signature of Participants**

Date:

## **CERTIFICATE OF PLAGIARISM**

This is to certify that the dissertation work titled, “**A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN REDUCING NAUSEA AND VOMITING FOR CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY WARD AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03**” of the candidate **PRIYADHARSHINI.G** for the partial fulfillment of M.Sc. Nursing Programme in the branch of MEDICAL SURGICAL NURSING has been verified for plagiarism through relevant plagiarism checker. We found that the uploaded thesis file from introduction to conclusion pages and rewrite shows \_\_\_\_\_% of Plagiarism (\_\_\_\_\_ % uniqueness) in this dissertation.

**CLINICAL SPECIALITY GUIDE / SUPERVISOR**

**Mrs.V.K.R.Periyar Selvi, M.Sc(N).**,  
Reader in Medical Surgical Nursing,  
College of Nursing,  
Madras Medical College,  
Chennai -03.

**PRINCIPAL**

**Mrs.A.Thahira Begum, M.Sc(N),MBA., M.Phil.**,  
Principal,  
College of Nursing,  
Madras Medical College,  
Chennai -03.

# **JACOBSON'S PROGRESSIVE MUSCLE RELAXATION TECHNIQUE:**

## **INTRODUCTION**

Progressive Muscle Relaxation (PMR) technique was first introduced by American physician Jacobson in the year 1930s. The technique involves alternating tension and relaxation of all the body major muscle group.

*Regular practice of Progressive Muscle Relaxation significance includes:*

- ❖ A decrease in generalized anxiety
- ❖ A decrease in anticipatory anxiety related to phobias
- ❖ Reduction in the frequency and duration of chemotherapy induced nausea and vomiting
- ❖ Improved ability to face phobic situations through graded exposure
- ❖ Improved concentration
- ❖ An increased sense of control over moods
- ❖ Increased spontaneity and creativity

## **DEFINITION**

Progressive Muscle Relaxation technique involves slowly tensing and then relaxing each muscle group individually starting with muscle in the arm and finishing with muscle in the toes.

### ***Step 1: (2 min)***

Sit or lie down in a quiet comfortable place. Uncross your arms and legs. Take in deep breath and hold for as long as you find it comfortable, breathe out. Letting all feeling of tension leave your body.



***Step 2: (2 min)***

Clench your right fist, tighter and tighter. Notice the tension in your clenched fist and forearm. Now relax. Keep right forearm up to your shoulder and tightening the upper arm. Feel the tension and breathe out and relax. Follow the same as for left hand.

***Step 3: (2 min)***

Hunch your shoulder and hold for as is comfortable, feel the tension. Then let your shoulder relax. Feel the relaxation spreading. Repeat the procedure and see how relaxed your shoulder can become.

***Step 4: (2 min)***

Raise your eyebrows as high as possible it will go, feel the tension and afterwards exhale and release. Repeat it. Tightly close your eyes, feel tension and followed by breathe out and relax. Repeat the procedure and notice how relaxed you become.

***Step 5: (2 min)***

Clenched your jaws, biting your back teeth together. Feel the tension as it spread throughout your jaws. Now relax your jaw, once again notice the contrast. Gently press the hard palate with your tongue, feel tension and relax. You make pressure between the lips, feel tension and relax.

***Step 6: (2 min)***

Pull your head back as far as is comfortable. Feel the tension in your neck, hold and then roll your head slowly to the right and then to the left. Notice the tension, then straighten your head and bring it backward gently, and relax. And after that bring your head forward, pushing your chin onto your chest. Feel the tension in the back of your neck, relax and allow your head return to the comfortable position. Repeat the procedure and allow for relaxation.

***Step 7: (2 min)***

Focus on the rhythm of your breathing, the rising and falling of your diaphragm and chest, notice how heavy your body is becoming with every breathe that you take, feel your body relax just the little bit more.

***Step 8: (2 min)***

Pull in your stomach muscles, hold for as long as is comfortable. Feel the tension and then relax. Repeat the procedure.

***Step 9: (2 min)***

Tighten your buttocks and thighs, push your heels upward as hard as you can. Feel the tension, hold for as long as is comfortable and then relax. Notice the constrast between the tension and relaxation.

***Step 10: (2 min)***

Point your toes in a downward direction and notice your calves getting tense. Feel the tension and hold for as long as is comfortable. Then relax. Repeat the procedure.

- ❖ Followed by you relax your body muscles completely from head to toes.
- ❖ You should verbalize the numbers counting from 20 descending to 1.
- ❖ And after that turn to left side.
- ❖ Come to sitting position and open the eyes.
- ❖ Feel yourself comfortable.

**INSTITUTIONAL ETHICS COMMITTEE  
MADRAS MEDICAL COLLEGE, CHENNAI 600 003**

EC Reg.No.ECR/270/Inst./TN/2013  
Telephone No.044 25305301  
Fax: 011 25363970

**CERTIFICATE OF APPROVAL**

To  
G Priyadharshini,  
M.Sc. Nursing I Year,  
College of Nursing,  
Madras Medical College,  
Chennai 600 003.

Dear G Priyadharshini,


The Institutional Ethics Committee has considered your request and approved your study titled **"A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN REDUCING NAUSEA AND VOMITING FOR CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY WARD AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI - 03." - NO.36072018.**

The following members of Ethics Committee were present in the meeting hold on **24.07.2018** conducted at Madras Medical College, Chennai 3

- |   |                      |
|---|----------------------|
| 1. Prof.P.V.Jayashankar   | : Chairperson        |
| 2. Prof.R.Jayanthi,MD.,FRCP(Glasg) Dean,MMC,Ch-3                      | : Deputy Chairperson |
| 3. Prof.Sudha Seshayyan,MD., Vice Principal,MMC,Ch-3                  | : Member Secretary   |
| 4. Prof.N.Gopalakrishnan,MD,Director,Inst.of Nephrology,MMC,Ch        | : Member             |
| 5. Prof.S.Mayilvahanan,MD,Director,Inst. of Int.Med,MMC, Ch-3         | : Member             |
| 6. Prof.A.Pandiya Raj,Director, Inst. of Gen.Surgery,MMC              | : Member             |
| 7. Prof.Shanthy Gunasingh, Director, Inst.of Social Obstetrics,KGH    | : Member             |
| 8. Prof.Remma Chandramohan,Prof.of Paediatrics,ICH,Chennai            | : Member             |
| 9. Prof. Susila, Director, Inst. of Pharmacology,MMC,Ch-3             | : Member             |
| 10.Prof.K.Ramadevi,MD., Director, Inst. of Bio-Chemistry,MMC,Ch-3     | : Member             |
| 11.Prof.Bharathi Vidya Jayanthi,Director, Inst. of Pathology,MMC,Ch-3 | : Member             |
| 12.Thiru S.Govindasamy, BA.,BL,High Court,Chennai                     | : Lawyer             |
| 13.Tmt.Arnold Saulina, MA.,MSW.,                                      | : Social Scientist   |
| 14.Thiru K.Ranjith, Ch- 91  | : Lay Person         |

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

  
Member Secretary – Ethics Committee

CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool constructed by **G.Priyadharshini M.Sc., (Nursing)** II year, College of Nursing, Madras Medical College which is to be used in her study titled, "A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN REDUCING NAUSEA AND VOMITING FOR CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY WARD AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03." has been validated by the undersigned. The suggestions and modifications given by me will be incorporated by the investigator in concern with their respective guide. Then she can proceed to do the research.

*Handwritten signature in green ink*

**PRINCIPAL**  
**MADHA COLLEGE OF NURSING**  
**MADHANAGAR, KUNDRATHUR,**  
**CHENNAI - 600 069**  
**PHONE : 24780736**

Name: DR. B. TAMILARASI

Designation: PRINCIPAL

College: MADHA COLLEGE OF NURSING, CHENNAI - 69.

Place:

Date:



## CERTIFICATE OF CONTENT VALIDITY

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*R. Sathak*

Signature with seal  
PRINCIPAL

MOHAMED SATHAK

A.J. COLLEGE OF NURSING

34, Rajiv Gandhi Road, (OMR)

IT Highway, Siruseri, Chennai-603 103

Name: *DR. PROF. R. RAMA SAMBASIVAN, M.Sc.(N.), Ph.D.,*

Designation: *PRINCIPAL*

College: *MOHAMED SATHAK A.J. COLLEGE OF NURSING.*

Place:

Date:





## REQUISITION LETTER

From

28.01.2019

G.Priyadharshini,  
M.Sc. (N) II year Student,  
College of Nursing,  
Madras Medical College,  
Chennai-03

Chennai-03.

To

Director,  
Institute of Medical Oncology,  
Rajiv Gandhi Government General Hospital,  
Chennai-03.

Through

The Principal,  
College of Nursing,  
Madras Medical College,  
Chennai-03.

Respected Madam,

**Sub: College of Nursing -Madras Medical College, Chennai-03- M.Sc (N) II Year Student- Dissertation - Requesting permission to conduct research in Medical Oncology Ward, RGGGH, Chennai-03 –Regarding**

-----X-----

I, G.Priyadharshini, M.Sc. Nursing II year student has to conduct the research study for the partial fulfillment of M.Sc. (N) programme. My topic is **“A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN REDUCING NAUSEA AND VOMITING FOR CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY WARD AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03”**. The data collection period is from 02.02.2019 to 04.03.2019 from 8 am to 4 pm. I assure that I will not disturb the routine activities of the patients and Oncology ward.

With due respect, I request your good self to kindly permit me to conduct this study in Medical Oncology Ward, Rajiv Gandhi Government General Hospital, Chennai-03.

Thanking you,

Yours faithfully

  
88/1/19  
(G.PRIYADHARSHINI)

  
Signature of HOD

(Research)

*Forwarded  
Delivered  
01/02/19*

**PRINCIPAL  
COLLEGE OF NURSING  
MADRAS MEDICAL COLLEGE  
CHENNAI - 600 003.**

*Permitted  
1/2/19*  
**Dr.K. KALAICHELVY, MD,DM.,  
Reg.No. 39335  
PROFESSOR & HOD  
Dept. of Medical Oncology  
Madras Medical College & RGGGH,  
Chennai-600 003**

From

Ms.G.Priyadharshini,  
M.Sc. (N) 1<sup>st</sup> year student,  
College of Nursing,  
Madras Medical College,  
Chennai-03.

To

Director,  
Institute of Medical Oncology,  
Rajiv Gandhi Government General hospital,  
Chennai-03.

Through,

The Principal, College Of Nursing, Madras Medical College, Chennai-03.

Respected Madam,

Sub: College Of Nursing, Madras Medical College, Chennai-M.Sc. Nursing  
1<sup>st</sup> year Dissertation-Permission to conduct study- reg.

I request you to kindly permit to conduct study on "To Assess the Effectiveness Of Progressive Muscle Relaxation For Reducing Nausea And Vomiting In Chemotherapy Patients" admitted in Oncology ward at Rajiv Gandhi Government General Hospital, Chennai-03.

Thanking you

Place: Chennai-03

Date : 26-04-2018

*D. S. S.*  
*26/4/18*  
Subject coordinator

Yours faithfully,  
*G. Priyadharshini*  
[G. PRIYADHARSHINI]

*Forwarded*  
*Delivered*  
*26/4/18*


*May conduct the study.*  
*26/4/18*

### CERTIFICATE FOR TAMIL EDITING

This is to certify that the dissertation work topic titled, "A study to assess the effectiveness of progressive muscle relaxation technique in reducing nausea and vomiting for cancer patients receiving chemotherapy in Oncology Ward at Rajiv Gandhi Government General Hospital, Chennai-03", done by Priyadharshini.G, M.Sc.(N) II year student, College of Nursing, Madras Medical College, Chennai – 03 has been edited and validated for Tamil language appropriateness.

Place: *Vellore.*

Date: *28.6.19*

Signature: 

Name: **A.J. THEODORE RAJKUMAR**  
Asst. Professor & H.O.D.  
Department of Tamil,  
Voorhees College-Vellore

Designation:

Place:



## CERTIFICATE FOR ENGLISH EDITING

This is to certify that the dissertation work topic titled, "A study to assess the effectiveness of progressive muscle relaxation technique in reducing nausea and vomiting for cancer patients receiving chemotherapy in Oncology Ward at Rajiv Gandhi Government General Hospital, Chennai-03", done by Priyadharshini.G, M.Sc. (N) II year student, College of Nursing, Madras Medical College, Chennai – 03 has been edited and validated for English language appropriateness.



Signature: \_\_\_\_\_

Name: **DR. J. EBENEZER**  
Headmaster

Voorhees Higher Secondary School  
Vellore - 632 001.

Place: \_\_\_\_\_

*S. Vandhana*, M.Sc., M.Phil  
Consultant - Clinical Psychologist  
RCI No. A30728 & IACP No. PLM 476/12/14

**CERTIFICATE OF CONTENT VALIDITY**

This is to certify that the Jacobson's Progressive Muscle Relaxation technique learnt by **G.Priyadharshini M.Sc., (Nursing) II year**, College of Nursing, Madras Medical College will be used only for her study purpose titled, **"A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN REDUCING NAUSEA AND VOMITING FOR CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY WARD AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03."** The Content validation had been done by the undersigned. The suggestions and modifications given by me will be incorporated in her study by the investigator in concern with their respective guide.

Signature with seal

*S. Vandhana*  
2/8/18  
*S. Vandhana*, M.Sc., M.Phil  
Consultant - Clinical Psychologist  
RCI No. A30728 & IACP No. PLM 476/12/14

Name: *S. VANDHANA*

Designation: *consultant - clinical Psychologist.*

Place: *Chennai*

Date: *02/08/18*

*Special Educator (Learning Disability)*

---

# 5, "Sky Lark Apartment - 1B" Dewan Rama Road, Purasaiwalkam, Chennai - 84,  
Tel : 044 - 4330 7250, Mob : 9884265958, Email : vandhana.acha@gmail.com

*S. Vandhana*, M.Sc., M.Phil  
Consultant - Clinical Psychologist  
RCI No. A30728 & IACP No. PLM 476/12/14

**To Whomsoever It May Concern**

**TRAINING CERTIFICATE**

This is to Certify that **G.Priyadharshini M.Sc., (Nursing) II year**, College of Nursing, Madras Medical College has undergone training for the Jacobson Progressive Muscle Relaxation technique which will be employed in her dissertation titled “**A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN REDUCING NAUSEA AND VOMITING FOR CANCER PATIENTS RECEIVING CHEMOTHERAPY IN ONCOLOGY WARD AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-03.**” The training period was from 24-07-2018 to 01-08-2018. I hereby certify that her training period was satisfactory.

Signature with seal

*S. Vandhana*  
2/8/18  
**S. Vandhana**, M.Sc., M.Phil  
Consultant - Clinical Psychologist  
RCI No. A30728 & IACP No. PLM 476/12/14

Name: **S. VANDHANA**

Designation: **Consultant - Clinical Psychologist -**

Place: **Chennai**

Date: **02/08/18**

*Special Educator (Learning Disability)*

---

# 5, “Sky Lark Apartment - 1B” Dewan Rama Road, Purasaiwalkam, Chennai - 84,  
Tel : 044 - 4330 7250, Mob : 9884265958, Email : vandhana.acha@gmail.com



