A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF WARM FOOTBATH ON QUALITY OF SLEEP AMONG PATIENTS WITH CANCER IN SELECTED HOSPITAL, AT TRICHY DISTRICT.

A DISSERTATION SUBMITTED TO

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY,

CHENNAI.

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR

THE DEGREE OF MASTER OF SCIENCE IN NURSING

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OCTOBER – 2019

CERTIFIED BONAFIDE WORK DONE BY

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SAKTHI COLLEGE OF NURSING,

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SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF NURSING FROM THE TAMIL NADU Dr.M.G.R.MEDICAL UNIVERSITY, CHENNAI

INTERNAL EXAMINER **EXTERNAL EXAMINER**

1._____ **2. _____**

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Signature of the Principal _____

Dr.Prof. V. JANAHI DEVI. M.Sc. (N), Ph.D.

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A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF WARM FOOTBATH ON QUALITY OF SLEEP AMONG PATIENTS WITH CANCER IN SELECTED HOSPITAL, AT TRICHY DISTRICT.

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"Gratitude bestows reverence changing forever how we experience life and the world"

-JOHN MILTON

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Abstract

ABSTRACT

The study was conducted "to assess the effectiveness of warm footbath on quality of sleep among patients with cancer in selected hospital at Trichy district. It was conducted by **Mrs.GAYATHRI.M.,** as a partial fulfillment of the requirement for the Degree of Master of science in Nursing to the Tamilnadu Dr. MGR. Medical University Chennai During the year of 2017-2019.

The Objectives of the study were

(1) To assess the pretest and post test level of quality of sleep among patient with cancer in experimental and control group,

(2) To evaluate the effectiveness of warm footbath among patient with cancer in experimental group,

(3) To find the association between the pretest level of quality of sleep among cancer patients with their selected demographic variables and clinical variables in experimental and control group.

In this study a quasi-experimental, Non-equivalent pretest–posttest control group design was adopted. Purposive sampling technique was used to select each 30 samples in experimental and control group who fulfilled the inclusive criteria. The warm footbath was given among patients with cancer to for 5 consecutive days at bed time. Groningen sleep quality scale was used for assessing the Pre and Posttest level of quality of sleep at 1^{st} and 5^{th} day. Results: The data analysis was done by using descriptive and inferential statistics.

The results shows that majority of the patients, 10(33.33%) patients were belonged to the age group of 56-60 years, 16(55.33%) were females, 17(56.67%) patients were Hindu, 14(46.67%) were Non Formal education, 12(40%) were Private employee, 24(80%) had Rs.7000 and above, 29(96.67%) were married.

In experimental group, the pre test level of quality of sleep 17(56.67%) had disturbed sleep, 9(30%) had poor sleep and 4(13.33%) had undisturbed sleep. Whereas in post test of quality of sleep 28(93.33%) had undisturbed sleep and only 2(6.67%) had disturbed sleep.

In control group, the pre test level of quality of sleep 20(66.67%) had disturbed sleep, 9(30%) had poor sleep and only one (3.33%) had undisturbed sleep whereas in the post test of quality of sleep 19(63.33%) had undisturbed sleep, 9(205) had poor sleep and only 2(6.67%) had undisturbed sleep among patients with cancer in the control group.

In control group, the pretest mean score of quality of sleep was 7.10 and the post test mean score of quality of sleep was 6.86. The mean difference score was 0.23 i.e., 1.64%. The calculated paired‘t’ test value of t = 0.980 was not found to be statistically significant. This clearly infers that there was no significant difference in the level of quality of sleep among patients with cancer in the control group.

In experimental and control group, the pretest mean score of quality of sleep in the experimental group was 6.75 and the pretest mean score of quality of sleep in the control group was 7.10. The mean difference score was 0.37 i.e., 2.64%. The calculated overall‘t’ test value of t = 1.124 was not found to be statistically significant.

In experimental and control group, the post test mean score of quality of sleep in the experimental group was 4.50 and the post test mean score of quality of sleep in the control group was 6.86. The mean difference score was 2.36 i.e., 16.86%. The calculated overall‘t’ test value of t = 9.592 was found to be statistically highly significant.

The calculated paired‘t’ test value of t = 0.980 was not found to be statistically Significant. This clearly infers that there was no significant difference in the level of quality of sleep among patients with cancer in the experimental and control group. Hence H1 was accepted.

The pretest mean score of quality of sleep in the experimental group was 6.73 and the pretest mean score of quality of sleep in the control group was 7.10. The mean difference score was 0.37 i.e., 2.64%. The calculated over all ‘t’ test value of t = 1.124 was not found to be statistically significant. Hence H2 was accepted.

The post test mean score of quality of sleep in the experimental group was 4.50 and the post test mean score of quality of sleep in the control group was 6.86. The mean difference score was 2.36 i.e., 16.86%. The calculated over all ‘t’ test value of t = 9.592 was found to be statistically highly significant. Hence H3 was accepted.

It means that the intervention of warm footbath is effective which improves the quality of sleep in the experimental group among patient with cancer at Harshamitra super specialty cancer Centre and research institute, Woraiyur. The result of the study showed that warm footbath was improve the quality of sleep and induce sleep among patient with cancer and obviously reduced the insomnia which also elevates the nursing satisfaction of the patients.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Chapter - I

Introduction

CHAPTER-I

INTRODUCTION

"we are such stuff as dreams are made on, and our little life is rounded with a sleep"

-William Shakespeare

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death. Cancer is caused by both external factors like tobacco usage, infectious organisms, chemicals, radiation and internal factors like inherited mutations, hormones, immune conditions, and mutations that occur from metabolism.

Indian Council of Medical Research (2019) India has around 2.25 million cases with over 1 lakh new cases being registered every year. In 2018, the disease led to nearly 7 lakh deaths.

According to recent studies by **American Cancer Society epidemiologist, 2018** at least 42% of newly diagnosed cancers in US-about 729,000 cases in 2018-are potentially avoidable, including 19% that are caused by smoking and 18% that are caused by a combination of excess body weight, physical inactivity, excess alcohol consumption and poor nutrition. Cancer causing viral infections such as HBV/HCV and HPV are responsible for up to 20% of cancer deaths in low- and middle-income countries. It is expected that annual cancer cases will raise from 14 million in 2012 to 2022 within the next 2 decades.

Sanchari pal (2016) on an average**,** more than 1,300 Indians succumb to the dreaded disease every day. With the new cancer Cases or its incidence in India estimated to grow by 25% by 2020 (according to the cancer registry released by the Indian council of medical research), cancer has become one of the major causes of

death occurring in the country. Women especially, are being increasingly diagnosed with cancer.

Chemotherapy is the treatment of disease by the use of chemical substance especially the treatment of cancer by cytotoxic and other drugs. Chemotherapy drugs interfere with a cancer cell's ability to divide and reproduce. A single drug or combination of drugs is used. These can be delivered either directly into the blood stream to attack cancer cells throughout the body, or they can be targeted to specific cancer sites. Radiation therapy is a type of cancer treatment that uses beams of intense energy to kill cancer cells.

Radiation therapy and chemo therapy are both reported to produce sleep disturbances, yet as mentioned, studies are now showing that sleep disturbances already exist before the start of treatment. Poor sleep in cancer patients also increases the risk of poor quality of life.

Sleep is a basic human need; it is a universal biological process common to all people. Historically, sleep was considered a state of unconsciousness. More recently, sleep has come to be considered an altered state of consciousness in which the individuals perception of and reaction to the environment are decreased.

Sleep is a cyclical process that alternates with longer periods of wakefulness. The sleep wake cycle influences and regulates physiological function and behavioural response. Circadian rhythm is a part of everyday life of living things. The most familiar rhythm is 24 hour, day-night cycle known as circadian rhythm. It influences the pattern of major biological and behavioural functions. Factors such as light, temperature, social activities and work routines affect circadian rhythms. All persons have biological clocks that synchronize their sleep cycles. A person has a poor quality of sleep if his/her sleep-wake cycle changes significantly.

Anxiety, restlessness, irritability and impaired judgement are common symptoms of sleep cycle disturbances. Failure to maintain the individuals usual sleep-wake cycle negatively influences the clients overall health.

Sleep disturbances that have an adverse effect on health and quality of life. Disturbed sleep is one of the major complaints of cancer patients and includes complaints of difficulty falling a sleep and staying a sleep, before, during and for years after treatment. A few study have explored the prevalence of sleep disordered breath (SDB), and some studies examined periodic limb movements in sleep but most sleep studies conducted in cancer patients have focused on insomnia.

Insomnia is defined as a subjective complaint of inadequate nocturnal sleep. It is the most common sleep disorder reported by cancer patients. Although alterations in sleep patterns are endemic among this population, sleep problems are rarely assessed in a typical patient evaluation. Furthermore, patients often fail to mention symptoms to their caregiver, and when sleep is assessed, it is usually in the form of a single question. As a result, insomnia is often unrecognized and untreated.

Quality of sleep is an essential element to tissue repair, proper immune function, and mental health. Chronic lack of sleep has been associated with depression, anxiety, and decreased cognitive function. In people with cancer, poor quality of sleep reduces quality of life, but unfortunately, most patients with cancer do not mention sleep problems unless explicitly asked. Most of the work addressing quality of life issues in patients with cancer has focused primarily on insomnia and fatigue, but both patients living with cancer and long-term Survivors are at risk of having other sleep problems.

Although most of the work related to sleep disorders in cancer patients has focused on insomnia and fatigue, there is a growing body of evidence confirming that other sleep disorders such as sleep disruption, insufficient sleep, restlessness, and diminished sleep duration are prevalent among patients with cancer as well as the general population, and that they decrease quality of life.

Alternative and complimentary therapies are commonly used treatment modalities in present days as it does not have side effects and also it is effective. These are group of therapies and practices used in place of increasing comfort or relaxation, maintaining, improving, or restoring health and harmony of the body, mind, and spirit, improving coping mechanisms, reducing stress, relieving pain, improving sleep and increasing the clients intense feeling of wellness.

Wickman.G, (2014) Hot water foot bath provides a good sleep, because it relaxes the body and mind. It works by slightly raising the body temperature and after 15 minutes, it starts to drop slowly. This can promote sleep indirectly. Gradual drop of body temperature makes us feel drowsy and therefore we feel more prepared for sleep. A warm footbath also diverts some blood from the head to lower parts of body, reduces brain activity and mimics the pre-sleep state.

Yang H L,et al , (2010) A warm-water footbath is a local moist heat application. It is a non invasive and easy technique to apply at home. The findings provide empirical support that a warm-water footbath relieves fatigue and insomnia problems of patients undergoing chemotherapy. It can be a non pharmaceutical method to help patients overcome fatigue and sleep problems during chemotherapy.

NEED FOR THE STUDY:

"**To acquire knowledge, one must study, but to acquire wisdom, one must observe"**

-Marilyn vos Savant

Sleep may not come easily to many cancer patients. People with cancer face not only the physical consequences of the disease and its treatment, but often tremendous emotional upheaval. Since physical illness and psychological distress both predict insomnia, cancer patients may be prone to sleep difficulties. When cancer patients are surveyed about their concerns, sleep difficulty typically ranks among the top three concerns, along with fatigue and pain.

Insomnia is the prolonged and usually abnormal inability to obtain adequate sleep. sleep problems can either be difficulty falling asleep of difficulty staying asleep (also known as restlessness).The potential cause of insomnia are many. Factors that may contribute to the development of insomnia include: certain medications , hospitalization, chemotherapy, radiation therapy or hormonal therapy, pain, hot flashes, nausea and vomiting.

Complementary and Alternative therapies are the fastest growing areas of health care. The main difference between conventional medicine and complementary medicine is the inclusion of the emotional, spiritual, and physical components of well being: complementary methods utilize the clients own energy to enhance the healing potential.

There are several Non-pharmacologic treatments for insomnia, which have been used in healthy patients, and may be useful for cancer patients. Studies have reported that patients treated benefited from these psychological treatments, and that improved sleep continues up to 24 months after the initial treatment. These treatments

include Stimulus control therapy, sleep restriction procedures, relaxation therapy, cognitive therapy and sleep hygiene education.

Mystakidou, K., et . al., (2007) A study was conducted in 102 participants to evaluate the sleep quality among cancer patients with pain, depression, and hopelessness. Patients were assessed by the Pittsburgh Sleep Quality Index (PSQI); a pain assessment tool, the Greek Brief Pain Inventory; a self-report measure of depression, the Beck Depression Inventory; and, finally, the Beck Hopelessness Scale. The study shows that hopelessness, pain treatment and "interference of pain with mood" may influence the quality of sleep in patients with cancer.

Clevenger, L., et.al., (2013) The longitudinal study was conducted on rates of sleep disturbance; contributions of depression, anxiety, and medication use in sleep disturbance; and associations between sleep quality and quality of life (QOL) during the first year after diagnosis among women with ovarian cancer shows that the majority of patients reported disturbed global sleep Pittsburgh Sleep Quality Index and Sleep disturbance is common and persistent in women with ovarian cancer.

Nishiura, M., et.al., (2015) A study conducted on assessment of quality of sleep among patients with cancer who receives chemotherapy shows that cancer patients suffered from combined symptoms related to sleep. Sleeping pills improved sleep induction but were not sufficient to provide sleep quality and prevent daytime dysfunction. Daytime dysfunction was specifically associated with psychological distress.

Michael J, (2004) For some time now, non-drug strategies have been recommended as first line treatment in the management of some disease especially in case of insomnia. Although medications are equally effective for helping people with insomnia to sleep, they cannot cure the condition and prolonged use regularly resulted

in dependency. The findings indicate that non pharmacological interventions produce reliable and durable changes in the sleep patterns of patients with insomnia. An Australian study found 93.5% of insomnia problems were being managed with benzodiazepines, with the majority as ongoing treatment. The extensive use of these drugs will produce the adverse effect of over sedation, ataxia, confusion, respiratory depression, short-term memory impairment, hallucination and depression.

Here the need for complementary therapy like biofeedback, aromatherapy, relaxation techniques, herbal remedies, massage, acupuncture, meditation and exercise emerge. Footbath is one of the effective methods for inducing sleep. Thermoregulation exhibits powerful interaction with sleep.

A experimental study on effects of warm-water footbath on relieving fatigue and insomnia of the gynecologic cancer patients receiving chemotherapy shows that warm-water footbath intervention resulted in reduced fatigue and insomnia symptoms for gynecologic cancer patients during chemotherapy. A warm footbath warms the skin, which causes vessel dilation and induces heat dissipation. Intervention that enhances heat dissipation prior to sleep will improve the sleeping pattern of the subject.

By considering the factors stated above, the researcher is interested to select warm footbath in order to improve the quality of sleep among patients with cancer.

STATEMENT OF THE PROBLEM:

"A quasi experimental study to evaluate the effectiveness of warm footbath on quality of sleep among patients with cancer in selected hospital at Trichy district"

OBJECTIVES:

- To assess the pretest and post test level of quality of sleep among patients with cancer in experimental group and control group.
- To evaluate the effectiveness of warm footbath among patients with cancer in experimental group.
- To find out association between the pretest level of quality of sleep with selected demographic variables and clinical variables in experimental group and control group.

HYPOTHESIS

H_1: The mean post test level of quality of sleep will be significantly higher than mean pre test level of quality of sleep among patients with cancer in experimental group.

H_2: The mean post test level of quality of sleep among patients with cancer in experimental group will be significantly higher than the mean post test level of quality of sleep among patients with cancer in control group.

H_3: There will be significance association between the mean pretest level of quality of sleep among patient with cancer with their selected demographic and clinical variables in experimental and control group.

OPERATIONAL DEFFINITION:

Assessment:

- Assessment is the deliberate and systematic collection of data to determine a patients current and past health status, functional status and to determine the patient's present and coping patterns.
- It is the process of documenting the pretest and post test level of quality of sleep among the patient with cancer.

Effectiveness

- Effectiveness is the capability of producing a desired result.
- It is the improvement in the quality of sleep after administration of warm footbath with use of Groningen sleep quality scale by significant difference in pre test and post test assessment score.

Warm Footbath

It refers to the immersion, cleansing, warming, soothing or disinfecting the feet into water at 44-45°C for 15 minutes at bed time.

Quality of sleep

It refers to subjective feeling of the patient regarding duration of sleep, depth of sleep and how well they rested during previous night as assessed by Groningen sleep quality scale.

Patient with cancer

It refers to the adult patients who are diagnosed with all type of cancers, and who are admitted in the hospital for 5 days.

ASSUMPTIONS

The study assumes that,

- By soaking the feet in the warm water, the congested blood in the body is brought to the dilated vessels in the feet and lower legs.

  Taking such a footbath will stimulate blood circulate, re-energize self, reduce inflammation, keep self relaxed.
- It is a local moist heat application.
- Non invasive and easy to apply at home
- Warm footbath relieves fatigue and insomnia problems of patients undergoing chemotherapy.

DELIMITATION

The study was limited to the,

- The data will be collected for 6 weeks
- Who those are admitted at time of hospital
- Patients having sleeping disturbances.
- Those who are undergoing radiation therapy and chemotherapy.
- All type of patient with cancer

PROJECTED OUTCOME OF THE STUDY

This study would help to evaluate the effectiveness of warm footbath on quality of sleep among patients with cancer.

SUMMARY

This chapter has dealt with the background of the study, need for the study, hypothesis, operational definition, assumption, delimitation and projected outcome.

Chapter - II

Review of Literature

CHAPTER II
REVIEW OF LITERATURE

Review of literature is the background for understanding correct knowledge on the topic and illuminates the significance of new study. It provides a strong foundation of research project. A familiarization with the previous studies can be useful in suggesting a research topic, identifying various aspect of the problem and aids in selection of appropriate methodology.

A literature review involves the systematic identification, location, scrutiny, and summary of written materials that contain information on a research problem.

(**Polit T Beck, 2007**)

The review of literature is a key step in research process excessive review of literature relevant to research was alone to collect maximum information for laying foundation of this study. The purpose of the review of literature is to gain maximum relevant information and perform the study in a scientific method. Review of literature is systematic identification, critical analysis and reporting of existing information on the topic of material for the study.

This chapter deals with a review of published and unpublished research studies and from related materials for the present study.

The literature relevant to this study was reviewed and arranged under the following heading:

2.1 Literature related to quality of sleep among patients with cancer

2.2 Literature related to effectiveness of warm foot bath.

2.3 Literature related to effect of warm footbath on quality of sleep among patients with cancer.

2.1 Literature related to quality of sleep among patients with cancer

Arsh preet kaur et. al., (2017) conducted a pre experimental study to assess the effectiveness of warm water footbath on quality of sleep among hospitalized patients at SGRD hospital, Vallah, Amritsar. In this study 60 female patients with disturbed sleep during hospitalization was assessed by Groningen sleep quality scale (GSQS) and were selected by using convenient sampling technique. Warm footbath was given to the hospitalized patients with disturbed sleep before going to bed at night for five consecutive days. The quality of sleep was assessed on the sixth day morning by using Groningen sleep quality scale. The result of the study revealed that in pretest 38(63.3%) of patients had poor sleeping pattern and 22(36.7%) had fair sleeping pattern. In post test 12(20%) had poor sleeping pattern, 30(50%) had fair quality of sleep and 18(30%) were had good quality of sleep. They concluded, to treat sleeplessness, warm footbath is considered to be one of the effective methods used to induce sleep among hospitalized patients.

Anderson et.al., (2015) conducted a comparative study to assess the quality of sleep among patients with cancer. He compared 354 cancer patients with 72 psychiatric patients and 290 non patient volunteers to find out the quality of sleep and factors affecting sleep. They adopted convenient sampling technique by use of observational check list and assessed the level of quality of sleep between patient with cancer and psychiatric patients. Results showed that 62% of the cancer patients reported moderate to severe sleep disturbances, while 53% of the depressed patients and only 30% of the volunteers reported the same complaint.

Divya n anand et. al., (2015) conducted a survey method to assess the quality of sleep among cancer patients and effectiveness of yoganidra intervention on quality of sleep in terms of improvement in sleeping pattern using Pittsburgh Sleep quality Index (PSQI). The intervention carried out in a quit and separate room in the oncology wards of Kasturba hospital, Manipal. A total of 25 cancer patients were enrolled using purposive sampling technique. Restorative yoganidra includes steps such as, relaxation, resolve, rotation of consciousness, awareness of breath, feelings and sensation, visualization. The participants were asked to maintain 'shavasana' posture throughout the session. It took around 30 minutes to complete each session for 14 days. The result of the study showed that t value (3.720) was significant at 0.05 level. Hence, it is inferred that yoganidra was effective in improving quality of sleep among cancer patients.

Savard et. al., (2015) conducted a quantitative survey method among more than 1000 patients with different types of cancer in different phases of treatment, 31% reported insomnia symptoms, 28% reported excessive daytime sleepiness, and 41% complained of restless legs. They adopted cluster sampling technique. They used observational check list to collect the data from the patients with cancer. They concluded this survey, lung cancer patients had the highest or second highest prevalence of problem in general, while breast cancer patients had a high prevalence of sleep insomnia and fatigue.

Sonia ancoli (2015) conducted a cross sectional study to evaluate the quality of sleep among patients with cancer in California. They adopted a convenience sampling technique by use self observational checklist. The Study suggest that 30-75% of newly diagnosed or recently treated cancer patients report sleep problem

which is a rate about two times as high as in the general population. On the other hand insomnia symptoms were found in 30-50% of cancer patients.

Tian Jun et. al., (2015) conducted a longitudinal study on sleep status of cervical cancer patients and to assess the predictors of poor sleep quality during adjuvant therapy. The study shows that prevalence rate of poor sleep quality was 52.63% for patients before adjuvant therapy, and 64.50% for patients after adjuvant therapy. The difference in the PSQI scores before and after adjuvant therapy among cervical cancer patients was significant (P=0.007).Psychological distress (P=0.045), anxiety (P=0.027), and depression (P=0.028) during adjuvant therapy were the factors associated with poor quality of sleep. Cancer treatments considerably affect the quality of sleep.

Julie L. Otte et. al., (2014) conducted a study to evaluate prevalence of sleeping pattern disturbances among patients with cancer in university of Washington, Washington. They adopted a systematic random sampling technique. In this study 200 patients with cancer were participated. The result of the study found that 68(76.33%) were had poor sleeping pattern, 32(23.67%) were had fair sleeping pattern. They concluded that poor sleep is problematic throughout the cancer trajectory, the prevalence of particular types of sleep disorders in cancer remains unclear.

All che seyyedra sooli et. al., (2013) conducted a randomized clinical trial to examine footbath on quality of sleep among elderly. The elderly patients were 46 participated. This study adopted a purposive sampling technique. The result of the study showed that after intervention sleep disturbances decreased to 39.1% in the experimental group and 47.8% in control group. Although there is no statistically significant difference between the two groups, there is a clinically significant.

Mustian et. al., (2013) conducted a randomized controlled trial of yoga for quality of sleep among 200 cancer patients were selected by stratified random sampling technique. Yoga programme consists of pranayama, 16 gentle Hatha and restorative yoga asanas and meditation. The participants attended two 75 minute sessions per week. Sleep quality was assessed by using the Pittsburgh Sleep Quality Index scale.

Palesh.T et. al., (2013) conducted a large scale prospective study, examined insomnia in over 800 patients scheduled to receive at least four cycles of chemotherapy for all stages of various types of cancer. Sleep complaints were assessed on the last day of cycle 1 and cycle 2 of chemotherapy. They concluded that at cycle 1, 42 % of the patients exhibited insomnia symptoms (43 % with insomnia disorder) but by the cycle 2 the rates decreased to 58 % (46 % with insomnia disorder).

Liu Lianqi et. al., (2012) conducted a study on the longitudinal relationship between fatigue and sleep in breast cancer patients undergoing chemotherapy shows that there is a significant association between fatigue and sleep quality over the course of four cycles of chemotherapy (P values-<0.01), which remained significant after controlling for confounding factors. This prospective study was conducted in 97 women with breast cancer showed that fatigue became worse, while reports of sleep quality remained poor during chemotherapy compared to pre-chemotherapy. The study shows that fatigue was associated with disrupted subjective sleep quality and objective daytime sleepiness during chemotherapy (P value >0.05).

Freire et. al., (2012) conducted an integrative review regarding health related quality of life among patients with advanced cancer consisted of a total of 83 patients with advanced cancer, as assessed by McMaster Quality of Life Scale (MQOLS)

which showed that perception of psychological well-being and quality of life among patients in palliative care was shown to be significantly affected by pain and poor quality of sleep, causing strong impact in the daily quality of life. The poor quality of sleep can cause many physical and cognitive symptoms such as decreased concentration, signs of fatigue, increased levels of anxiety, nervousness, irritability, gastrointestinal symptoms and predisposition to accidents. These symptoms, especially when associated, are predictors that affect the well-being and cause negative impact on quality of life.

O. Aslan et. al., (2010) conducted a study on Subjective sleep quality among 175 cancer patients shows that the cancer patients had poor sleep quality. The mean sleep quality score was 9.46 and 4.669. Most patients (83.82%) used no pharmacologic strategies like lifestyle practices (64.25%), behavioral practices (21.25%) and biologic treatments (4.34%). The reasons given by patients for sleep disturbances were cancer diagnosis (61.71%), adverse effects of therapy (58.85%) and financial problems (36.00%).

Mustian M Karen (2010) conducted a study on global sleep quality in post treatment cancer survivors shows that 30% to 90% of cancer survivors report some form of impaired sleep quality in post-treatment period, which can be severe enough to increase morbidity and mortality. According to the study, impaired sleep quality, excessive daytime napping, difficulty falling asleep, difficulty staying asleep and waking up too early is among the most distressing adverse effects experienced by cancer survivors.

Shuman AG et. al., (2010) conducted a prospective multisite cohort study on predictors of poor quality of sleep among cancer patients. The number of participants for the study was 457.The analysis showed that pain, xerostomia, depression,

presence of a tracheotomy tube, comorbidities, and younger age were statistically significant predictors of poor quality of sleep (P<.05).Smoking, problem drinking and female sex were marginally significant(P <0.09).

Mystakidou Kyriaki et. al., (2006) conducted a descriptive study on the Relationship of Subjective Sleep Quality, Pain and Quality of Life in Advanced Cancer Patients shows that poor quality of sleep was significantly correlated to poor quality of life and pain in cancer patients. The study suggested that quality of sleep in patients suffering from stage IV cancer was significantly decreased, and as a result. The study also shows that patients with low quality of life were poor quality sleepers. Further more, patients, who experienced intense pain had higher PSQI scores, showing that they were suffering from poor sleep quality.

Roscoe A Joseph et. al., (2007) conducted a study on Cancer-related Fatigue and Sleep Disorders on 93 patients reported that sleep disorders are a common and often chronic problem for both patients with cancer and cancer survivors. The evidence supports a close association between cancer related fatigue and sleep disorders.

Fortner ,B .V et. al., (2002) conducted a study on Sleep and Quality of Life in Breast Cancer Patients showed that 61% of breast cancer patients who are receiving radiation and chemotherapy had significant sleep problems in comparison with medical patients with general medical conditions. Breast cancer patients having significant sleep problems had greater deficits in many areas of health-related quality of life.

C Miaskowski (1999) conducted a cohort study on Pain, fatigue, and sleep disturbances in oncology outpatients receiving radiation therapy for bone metastasis shows that , patients experienced significant sleep disturbances, with a mean sleep

efficiency index of 70.7% (estimated using wrist actigraphy). In addition, patients who had received a higher percentage of their radiation treatment reported more sleep disturbances

2.2 Literature related to effectiveness of warm foot bath

Takeshi Azuma et al (2015) published a study in Journal of the Japanese Association of Physical Medicine, Balneology & Climatology shows the effects of Footbath on sleeping time in 3 old patients (70, 82, 84 years old). After two days control period, feet were immersed in a water bath containing about 1,000 PPM CO2 at 40-41 degrees Celsius for 15 minutes at 17:00 for 3 consecutive days. Wrist Mini-motion-logger Autographs were used for recording their activities. The hour for lights-out was 21:00 and that of rising was 06:00. They went to bed between 20:30-20:50 and woke up at 05:30 next morning. In two patients, sleeping time at night began to increase on the second immersion day, which continued even on the following two days without footbath. All the patients showed no changes in daytime activities and they were satisfied with foot bath.

Sam, S,S., (2014) conducted a study on effectiveness of warm footbath therapy on fatigue among patients with chronic renal failure shows that footbath therapy was effective in reducing the fatigue among chronic renal failure patients. Thirty renal failure patients were selected by using purposive sampling technique. A quasi experimental interrupted time series design was used for the study. The results revealed that there was a significant difference between the pre test and post test fatigue scores in the experimental group $F(3,56)= 71.297, p< 0.05$ which shows that warm footbath therapy was effective in reducing the fatigue among renal failure patients.

Makiko Orita et. al., (2014) conducted a study on effectiveness of warm footbath on heart rate variability in patients with profound multiple disabilities. Eight patients with profound multiple disabilities (four men and four women, aged 18, 17 to 28 years) were selected for the study. The study shows that warm footbath in patients with profound multiple disabilities, suppressed the parasympathetic nervous activity and stimulated their tactile senses and emotional inputs when soaking their feet in warm water.

Anilda, A,J., (2013) conducted a study on effectiveness of hot water foot bath on level of fatigue among elderly patient showed that there is effectiveness of hot water footbath on reducing the level of fatigue among cancer patients at the level of $P<0.05$ A total of 30 elderly patients with fatigue were selected by simple random sampling and were assigned to two groups, hot water foot bath was given twice a day for 3 days for experimental group and control group received only routine care. The paired-t test revealed that there is effectiveness of hot water footbath on reducing the level of fatigue among elderly patients at the level of $P<0.05$. Hence the effectiveness of warm footbath determined by reduced level of fatigue.

Liao W C et al (2013) conducted a study on effect of warm foot bath before bed time on body temperature and sleep in older adults with good and poor sleep. Forty three participants with age greater than 55 years were selected for the study. The design used was two group experimental cross over design. The footbath before sleep significantly increased and retained foot temperatures in both good and poor sleepers. The pattern of core temperatures during foot Bathing was gradually elevated (poor sleepers vs. good sleepers +0.40±0.58°C vs. +0.66±0.17°C). A footbath of 40°C water temperature and 20-min duration before sleep onset increases foot temperatures and distal-proximal skin temperature gradients to facilitate vessel dilatation and elevates core temperature to provide heat load to the body. This footbath does not alter sleep in older adults with good and poor sleep.

Shihoko Namba et al (2012) conducted a study on effect of warm foot bath on sleep in ICU patients. A single group crossover design was used to examine the effects of foot baths on the sleep outcome in six ICU patients. This study examined the characteristics of these ICU patients. Polysomnograms were recorded for two nights; a foot bath night and non-foot bath night**.** The study concluded that foot baths relieves stress and improves the sleep in ICU patients.

Perry (2011) stated that hot water foot bath is a form of treatment that is recommended for foot and leg cramps, insomnia, nausea, and also to relieve the fatigue in elderly. It is immersion of both feet and ankles in hot water for 10-30 min and is an excellent way to draw blood from inflamed or congested area of the body

Seo HS et.al, (2011) conducted the study to determine the effectiveness of hot water foot bath on level of fatigue among older Korean adult. A nonequivalent control group, quasi-experimental design was used.50 participants from long-term care were selected and assigned into experimental group (27) control group (23). The participants in experimental group received hot water footbath. Decreased the fatigue level in experimental group when compared to control group. The study results suggest that this method is beneficial for reducing fatigue

Liao W,C., et al (2008) conducted a study on the effect of warm foot bathing on distal proximal skin temperature gradient in 15 Taiwanese elders. Participants were assigned randomly to receive a 41°C footbath for 40 minutes before sleep onset on night 2 or night 3. The study shows that decreased core temperature and increased distal temperature are associated with shortened sleep onset latency and improves NREM sleep.

Saeki Y et al (2007) conducted a study to investigate the effects of warm foot bathing on autonomic nerve and immune function. Eleven healthy female volunteers (aged 22□24 years) undertook footbaths at 42 °C for10 min, with or without additional mechanical stimulation (air bubbles and vibration). Autonomic responses were evaluated by electrocardiography and spectral analysis of heart rate variability, and by measurement of blood flow in the aural region. White blood cell (WBC) counts, ratios of lymphocyte subsets, and natural killer (NK) cell cytotoxicity was used as indicators of immune function. The study concluded that warm foot bathing produced significant changes in the measured autonomic responses and improved immune status.

Fujita (2000) conducted a study in Osaka University; Graduate school of medicine, JPN to investigate the relaxation response of subjects to footbath; foot massage and foot massage combine with footbath compared with that of control. Ten subjects (mean age 72.0 SD 2.2), physiological data (heart and foot skin temperature) were continuously measured and subjective data were obtained before care, immediately after care, and 120minutes after care. Immediately after care, foot massage resulted in a significant decrease in heart rate in comparison with control ($p<0.01$). As for skin temperature immediately aftercare, all forms of care produced significant increases in comparison with control (footbath $p<0.05$: foot massage and foot massage combined with footbath: p<o.o1). The result suggests that these forms of care generate the relaxation response and promote the onset of sleep as shown by the decrease in heart rate and increase in foot skin temperature.

2.3 Literature related to effect of warm footbath on quality of sleep among patients with cancer.

Anju Philip (2016) conducted a quasi experimental study on effect of warm footbath on quality of sleep among patients with cancer in selected hospital, Coimbatore. The aim of the study was to assess the effect of Warm footbath on quality of sleep among patients with cancer. Quasi experimental, post-test only control group design was adopted for the study. Fifty six samples were selected by using purposive sampling technique. The samples were alternatively assigned to experimental group and control group so as to include 28 samples in each group. The quality of sleep was assessed by using Groningen sleep quality scale. Warm foot bath was administered by the researcher for 15 minutes for five consecutive days in experimental group. For control group, routine care without warm footbath was given. Post test was done to assess the quality of sleep in experimental group and control group by using Groningen sleep quality scale. Descriptive and inferential statistical techniques were used to analyze the data. Unpaired 't' test was used to assess the effect of warm footbath on quality of sleep among patients with cancer. The calculated 't' value 10.02 was found to be greater than the table value of 3.46 at 0.001 level of significance. The results showed that highly significant difference in the quality of sleep among patients with cancer after warm foot bath.

He Yajing et. al., (2015) conducted a experimental study on sleep quality of patients with differentiated thyroid cancer by calculating Pittsburgh Sleep Quality Index scale score (PSQI), demonstrated significantly higher PSQI score and higher rate of poor sleep quality in differentiated thyroid cancer patients (P value not exceeding 0.05 was considered as statistically significant). Three groups of patients were participated in the study. In the first group, 162 patients with DTC received total

thyroidectomy, and then 131I therapy. The second group consisted of 84 patients with benign thyroid nodules, who received partial thyroidectomy. The third group was 78 normal healthy control cases. The results confirmed that after 131I therapy, mean level of PSQI rose significantly from 7.59 to 8.78, while the prevalence of poor sleep quality in differentiated thyroid cancer patients increased significantly from 54.32% to 70.99%. The study was conducted on 162 patients of which 79.31% had higher prevalence of poor sleep quality.

S.Jose amla anilda et. al.,(2015) conducted a true experimental study to assess the effectiveness of hot water footbath on level of sleeping pattern among patient with cancer in Jammu. The study was conducted at selected hospitals of Jammu with samples of 30 cancer patients. Out of this 15 patients were in experimental group and 15 patients were in control group. The samples were selected by using simple random sampling technique. She collected the data by the Groningen Sleep quality scale. The result of the showed that out of 15 samples in experimental group, 10(73%) patients had normal sleeping pattern, 5(27%) patients had mild sleeping pattern disturbances. In control group, 8(56%) patients had moderate sleeping pattern disturbances and 7(44%) patients had mild sleeping pattern disturbances.

Palesh.O.G et. al., (2011) conducted a experimental study on 823 patients with cancer receiving chemotherapy reported that the proportions of patients with cancer reporting symptoms of insomnia and meeting diagnostic criteria for insomnia syndrome during chemotherapy are approximately three times higher than the proportions reported in the general population. Insomnia complaints persist throughout the second chemotherapy cycle for the majority of patients with cancer in this study. All P values reported are two-sided; $P < .05$ is considered statistically significant. Insomnia is prevalent, under recognized, under managed and under studied among patients with cancer receiving chemotherapy.

Huei-Lin Yang et al (2010) conducted a quasi experimental study on effects of warm-water footbath on relieving fatigue and insomnia of the gynecologic cancer patients receiving chemotherapy shows that warm-water footbath intervention resulted in reduced fatigue and insomnia symptoms for gynaecologic cancer patients during chemotherapy. There were 25 and 18 participants in the comparison and experimental groups, respectively Participants in the experimental group reported a significant reduction in fatigue and improvement in sleep quality (P<.001) from the second session of chemotherapy and continued to improve during the study period. The findings provide empirical support that a warm-water footbath relieves fatigue and insomnia problems of patients undergoing chemotherapy. The study concluded that warm footbath was effective in improving the sleeping pattern among gynaecologic cancer patients.

Yang (2010) conducted a quasi experimental study to assess the effectiveness of warm footbath on quality of sleep and relieving fatigue among elderly who are receiving chemotherapy. They adopted a convenient sampling technique and 25 samples were selected. Participants in the experimental group soaked their feet for 20 minutes every evening at 42 C after chemotherapy. The result of the study showed that significant reduction in fatigue and the quality of sleep was improved. The study concluded that this intervention used to improve the quality of sleep and reduce the fatigue level for elderly receiving chemotherapy. The study concluded that warm footbath was effective in improving sleeping pattern.

Cherian ,S., (2009) conducted a study on effect of warm footbath on Sleep Onset Latency and Relaxation among Patients with Cancer showed that warm footbath is effective for early sleep onset latency (F=56.15, F=120.1, F=143) (F (2, 195) =3.04) and relaxation .Quasi experimental time series design was used and 40

samples were selected by purposive sampling method of which majority 35(87%) experienced maximum relaxation and early sleep onset latency.

Yamaguchi (2008) conducted a true experimental study related on Physiological effects of a mild footbath among 31 cancer patients. They adopted convenient sampling technique. The Groningen Sleep Quality scale was use to assess the level of quality of sleep among cancer patients. They examined on 31 subjects before, during and after 10 minutes' footbath at 41 degree Celsius. The control group was only received routine care. About two-thirds of subjects experienced a true rest as well as a mental relaxation during the footbath. The result of the study showed that 80% of cancer patients were had undisturbed sleeping pattern and 20% of cancer patients had disturbed sleeping pattern after the intervention of warm footbath.

E, J,Sung.,Y, (2000) conducted a true experimental study on effects of footbath on sleep in winter suggested that both daily bathing and hot footbath before sleeping facilitates earlier sleep onset. They adopted random sampling technique. Nine cancer female volunteers were selected for this study. Subjects were assigned to three sleep conditions: sleep after bathing (condition B), sleep after hot footbath (condition F) and sleep without either treatment (control). Polysomnograms were obtained, and body movements during sleep were measured while monitoring both the rectal and skin temperatures of subjects. In addition, subjective sensation was obtained with a questionnaire answered immediately by the subjects on wakening. The rectal temperature increased by approximately1.0.DEG.C.under condition B, but this elevation was not observed under condition F compared with control. The sleep onset latency was shortened under both conditions compared with control. This study suggests that hot footbath before sleeping facilitates earlier sleep onset.

CONCEPTUAL FRAMEWORK

Conceptual framework can be defined as asset of concept and assumptions that integrate them into a meaningful configuration.

(Polit and Beck, 2010)

Conceptual framework is a theoretical approach to the study of the problem that are scientifically based and emphasis the selection, arrangement and classification of the concepts.

Conceptual framework is a group of related ideas, statements or concept which deals with concept that is assembled by the virtue of their relevance to a common theme. A conceptual model broadly presents an understanding of the phenomenon of interest and reflects the assumption and philosophic views of model's designer.

The proposed study was aimed to assess the effectiveness of warm foot bath on quality of sleep among patients with cancer in selected hospital at Trichy district.

The conceptual framework for the present study is based on prescriptive theory by Ernestine Wiedenbach's helping art of clinical nursing midwifery practice (1964).

According to Wiedenbach's nursing practice consist of (identification) identify the clients need for health, (ministration) ministering the needed help and (validation) validating that the need for help was met.

According to Wiedenbach's nursing is an art based on goal directed care. It consists of 3 steps:

- Step 1 : Identifying the need for help
- Step 2 : Ministering the need for help
- Step 3 : Validating the need for help

Step 1: Identifying the Need for Help

Identification determines a client need for based on the existence of a need, whether the client realize the need. Here identified the selected variables of adolescent girls. It includes the following components.

a) General Information

1) This comprises of the demographic variables which includes demographic data seeking information about age, gender, religion, educational status, occupation, family income, marital status.

b) Central Purpose

Central purpose is to improve the level of quality of sleep among patients with cancer.

c) Prescription

It includes nursing intervention prescribed to meet the central purpose that is to improve the level of quality of sleep among patients with cancer.

Step 2: Ministering the Need for Help

It refers to provision of needed help. Here the investigator formulates a plan and which the cancer patients accepts and implement the plan. This includes one component called reality warm footbath is effective on improve the level of quality of sleep. This reality has four components.

a) Agent

The investigator act as an agent to render the needed help.

b) Recipient

The adolescent girls who fulfill the inclusion and exclusion criteria will be accepted as recipient needing help.

c) Goal

The goal is to improve the level of quality of sleep among patients with cancer.

d) Means

Means are the activities and devices used by nurse to achieve the goal. Here the investigator provided warm footbath among patients with cancer .

e) Framework

It refers to the facilities in which nursing care is provided. Here the framework was selected hospitals at Trichy district.

Step 3: Validating Need for Help was met

Validation refers to collection of evidence that shows client's needs have been met its functional activity has been restored as a direct results investigator action. Validation means assessing the outcome of ministering the needed help. This involves the post test or assessment level of quality of sleep among patients with cancer.

Statistically proved that warm footbath was effective on level of quality of sleep among patients with cancer.

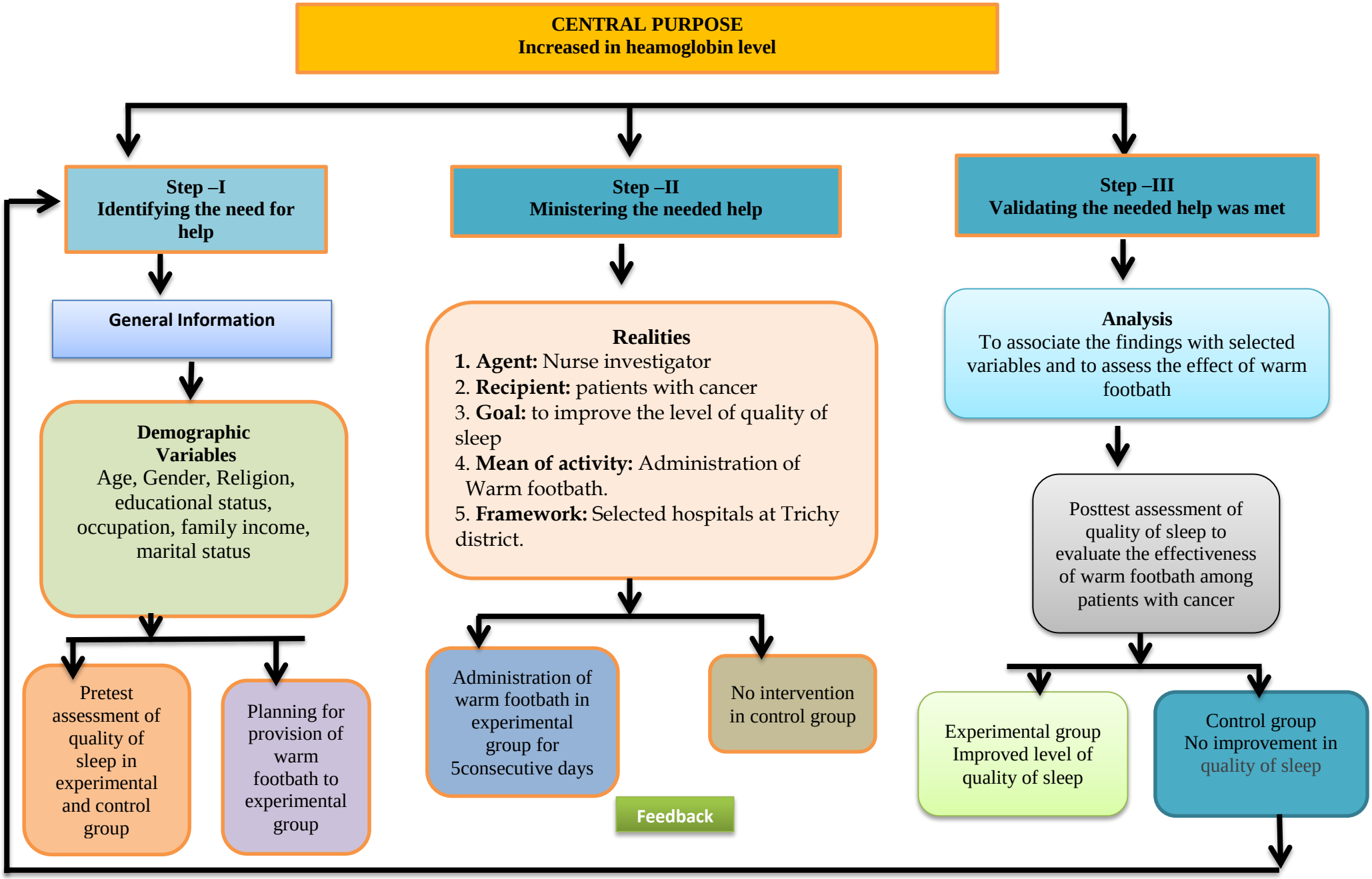


Figure 1: CONCEPTUAL FRAME WORK BASED ON WIEDNBACH'S HELPING ART OF CLINICAL NURSING THEORY (1964)

Chapter - III
Methodology

CHAPTER-III

RESEARCH METHODOLOGY

The methodology of research indicate the general pattern of organizing, the procedure for gathering valid and reliable data for the problem under investigation.

Pilot and T.beck, (2010)

Methodology is a significant part of any study, which enables the research to logically project the research undertaken. Research methodology is the systemic way to carry out an academic study and research in flawless manner.

This chapter deals with the description of research approach, research design, research setting, sampling technique, criteria for sample selection, variables of the study, tools for data collection, pilot study, ethical consideration, procedure for data collection and techniques of data analysis and interpretation, report of the pilot study.

RESEARCH APPROACH

Research approach is the most significant part of any research. The appropriate choice of the research approach depends upon the purpose of the research study which has been undertaken in order to accomplish the main objectives of the study.

Polit and beck (2010)

The present study aimed to assess the effect of warm foot bath on quality of sleep among patients with cancer where the researcher manipulates the independent variable and measures the changes in the dependent variable.

Hence in view of the nature of problem and to accomplish the objectives, quantitative research approach was adopted for this study.

RESEARCH DESIGN:

The research design is the overall plan, structure and method of investigation of answers the research question or problem.

Polit and beck (2010)

The research design used for the present study was quasi experimental Non-Randomized pre test and post test control group design.

Quasi experimental design involves the manipulation of an independent variable that is an intervention. Quasi experimental design lacks randomization, the signature of a true experiment.

Samples were alternatively assigned to the experimental and the control group. Intervention was given only for the experimental group and control group was kept under the routine measures. The design was found to be appropriate to evaluate the effect of warm footbath on quality of sleep among patients with cancer.

The research design is represented diagrammatically as follows

Group	Pre test	Intervention	Post test
Experimental	O1	X	O2
Control	O1	No intervention	O2

Keys:

O1 - Pretest assessment of quality of sleep among patients with cancer.

X - Intervention (warm footbath)

O2 – post test assessment of quality of sleep among patients with cancer.

VARIABLES OF THE STUDY:

A variables is defined as a concept or abstract idea that can be described in measurable terms .In research, this term refers to the measurable characteristics, qualities, traits, or attributes of a particular individual, object, or situation being studied.

There are two types of variables were identified in this study. They are independent variables and dependent variables.

Independent variables

An independent variables is a variables that is manipulated to determine the value of a dependent variables

- warm foot bath

Dependent variable

A dependent variables is what you measure in the experiment and what is affected during the experiment

- quality of sleep among patients with cancer.

Demographic variables :

Personal statistics that include such information as Age, Gender, religion, educational status, Occupation, family income, marital status.

Clinical variables:

Clinical variables consists of duration of the illness, Number of hospitalization, Treatment, History of co-morbid illness, Family history of cancer, Number of chemotherapy cycles, Techniques used for sleeping at home and influencing factors that affect the sleep.

SETTING OF THE STUDY:

Setting is the general location and condition in which data collection takes place for the study

P**olit, and beck, (2010**)

The study was conducted in Harshamitra super specialty cancer Centre and research institute at Trichy district. The Harshamitra cancer specialty Centre and research institute is situated in Nagamangalam and Woraiyur. The distance between these two hospital was about 60 km From Nagamangalam to woraiyur. In outpatient department monthly census was about 2000 to 2500 patients and inpatients department monthly census was around 1000 to 1500 patients. Nearly 150 to 200 patients were admitted with cancer per month.

The patients from Harshamithra cancer super specialty Centre and research institute, Woraiyur was selected for the experimental group. For control group researcher selected in Harshamithra cancer super specialty Centre and research institute, Nagamangalam.

It is a super specialty hospital equipped with 150 beds. Harshamitra super specialty cancer Centre and research institute has been found to make a distinct mark in the treatment of cancer with most advanced equipment. There are various treatment modalities for cancer like surgery, radiation therapy and chemotherapy either, alone or in combination. Patients with different diagnosis of cancers were admitted in the hospital. The bed strength of the oncology wards is 80 and special wards is 60 and 10 beds were in ICU which constitute both pediatrics and adult patients with cancer.This area was selected based on the availability of samples and feasibility in terms of co-operation extended from the Harshamitra super specialty cancer Centre and research institute, woraiyur and Nagamangalam, Trichy.

POPULATION

The population is defined as the entire set of individual or subjects having common characteristics some time universe.

A population is the entire aggregation of cases that meet a designed set of criteria.

Pilot and Hungler, (2013)

Target population

The entire group of individual or objects to which researchers are interested in generalized the conclusions

The target population of this study comprises all the patients with cancer who come to Harshamitra super specialty cancer Centre and research institute, Trichy district.

Accessible Population

The population research to which the researchers can apply their conclusions**.**

The accessible population of this study comprises with cancer patients who meet the inclusion criteria.

SAMPLE

Sample is a subset of population element who would actually be recruited for the study and who would participate in this study. This group meets the eligible criteria of the population under study.

(Polit and Hungler, 2010)

Patient with cancer from Harshamitra super specialty cancer Centre and research institute, Trichy district who fulfills the inclusion criteria, were selected to participate in this study.

SAMPLE SIZE

A subset of a population selected to participate in a study.

(Polit, D.F and Beck, 2010)

In this study the selected sample size is about 60 patients with cancer from Harshamitra super specialty cancer Centre and research institute, Woraiyur and Nagamangalam, Trichy district. 30 patients with cancer were a control group and 30 patients were in experimental group.

SAMPLING TECHNIQUE:

This is the process of choosing a representative portion of the entire population. It involves selecting a group of people, events, behavior or other elements with which to conduct a study.

The samples for this study were selected by using **Non probability purposive sampling technique** to selected patients with cancer from Harshamitra super specialty cancer Centre and research institute, Woraiyur and Nagamangalam, Trichy district; the count of 30 samples were selected for experimental and 30 samples were selected for control group.

Purposive sampling technique is a sampling method in which elements are chosen from among the whole population based on purpose of the study.

CRITERIA FOR SAMPLE SELECTION

The study samples will be selected keeping in view of the following predetermined criteria.

Inclusion criteria:

The study include that,

1. Patients with no pain and mild pain

2. Patients without nausea/vomiting

3. Patient with sleeping disturbances

4. Patient those who receiving chemotherapy and radiation therapy.

5. Patient those who were write and speak tamil.

Exclusion criteria

The study exclude that,

1. Patients who were unconscious and critically ill.

2. Patients with cancer who underwent surgery.

3. Taking medication for sleep.

4. Taking medication for pain

5. who were absent at the time procedure

DESCRIPTION OF THE TOOL

The data collection instrument consists of the following parts.

- Part-1:Demographic variables and clinical variables
- Part-2: Groningen Sleep Quality Scale

Part I-demographic variables

The demographic variables and clinical variables were framed by using the expert opinion and the supporting literatures and following tools were used for the data collection.

Part II-Groningen Sleep Quality Scale

This tool was developed in Groningen by Mulder-Hajonides Van Der Meulen et al in 1980. The outcome measure was quality of sleep and it is assessed by using the fourteen item Groningen Sleep Quality Scale (1980). GSQS scores range from 0 to 14, a higher score indicating a lower subjective quality of sleep. These statements are related to patients feeling about the difficulty in falling asleep, sleep fragmentation duration of sleep and early morning awakening.

SCORING PROCEDURE

The first question out of the fifteen does not count for the total score.

One point : If answer is **true** for questions 2,3,4, 5, 6, 7, 9, 11,13, 14, 15

One point : If answer is **false** foe questions 8,10,12.

The Total score : 14

SCORING KEY

Score 0 to 5 = Undisturbed or Unrestricted Sleep Last Night,

Score 6 - 7 = Disturbed Sleep Last Night,

Score 8 - 14 = Indicating Poor Sleep the Night Before**.**

VALIDITY

The degree to which an instrument measures what it is intended to measure. Validity of the tool was obtained from five experts in the field of nursing.

(Polit, D.F and Beck, 2010)

The tool was validated by 5 nursing experts, one medical officer and one statistics expert. The experts were requested to check the relevance, sequence and adequacy of the items in the research tool. Their valuable suggestions were incorporated and the tool was modified and finalized as per the corrections and suggestions given by the experts.

RELIABILITY

Reliability of an instrument is the degree of consistency measures that attribute it is supposed to be measured.

(Polit, D.F and Beck, 2010)

In order to established the tool. It was demonstrate to patient there are in sample area. It was established through test and retest method. The reliability of the

tool was established by implementing the tool on quality of sleep among patient with cancer in experimental and control group.

The prepared tool was validated by seven subject experts that included five nursing faculty and two medical expert. Suggestions and recommendations given by experts were accepted and necessary corrections were made. The content validity of each item of the tool was computed using Lynn's item wise content validity index (I-CVI) and the values were found to be greater than 0.83. The tool was found to have high content validity based on I-CVI interpretation for six or more experts.

The **Groningen sleep quality scale** is a standardized tool to measure the quality of sleep developed by mulder-Hajonides van der meulam et.al., in 1980. The tool was found to have a validity of 0.82 and reliability of 0.65 and 0.60 by split half method. These values are statistically highly significant.

PILOT STUDY

A small scale version, or trial run, done in preparation for a major study.

(Polit, D.F and Beck, 2010)

Pilot study was conducted to find out reliability of the tool, feasibility of conducting the study and practicability of the study. The pilot study was conducted in oncology wards and special wards of Dayal nursing home, Trichy. The samples who met the inclusion and exclusion criteria was selected by using Non probability purposive sampling technique. Duration of the pilot study was ten days. During the period of pilot study, 4 patients were selected based on the inclusion criteria and exclusion criteria and were assigned to experimental and control group alternatively. Informed consent was obtained from each mother. The quality of sleep was assessed by Groningen sleep quality scale (Pre-test). The administration of warm footbath was implemented for the experimental group only. After fifth day, the same tool was

administered to the patients with cancer in experimental group and control group (Post test).

Practicability of the tool was checked to conduct the main study. The finding of the pilot study revealed that effectiveness of warm footbath in the post test. The patients with cancer were in the experimental group scored higher than the patients with cancer in control group.

DATA COLLECTION PROCEDURE:

The main study was conducted in Harshamitra super specialty cancer center and research institute, Trichy. About 60 patients with cancer were the samples, 30 samples for the experimental group and 30 samples for the control group, who met with inclusion and exclusion criteria was selected by using Non-probability purposive sampling technique. Informed consent and oral permission was obtained from each participants. The investigator established a good rapport with the patients through an informative talk about the purpose of the study to ensure their co-operation.

On the first day of admission, demographic variables, clinical variables and screening were done for patients with cancer. On the next day, warm foot bath was administered by the researcher with the duration of 15 minutes for five consecutive days in patients of experimental group. On the other hand, routine care was given for patients in control group. Post test was done on first and fifth day for both experimental and control group to assess the quality of sleep among patients with cancer by using Groningen sleep quality scale.

All the patients were very much co-operative and investigator expressed gratitude for their co-operation.

STATISTICAL ANALYSIS

Descriptive and inferential statistical techniques were used for data analysis. Descriptive statistics was applied for the analysis of demographic data and clinical data. The frequency and percentage distribution (descriptive measures) were used to describe the demographic and clinical variables. Tables were formulated for all significant information. Mean, Mean difference, Standard deviation was calculated.

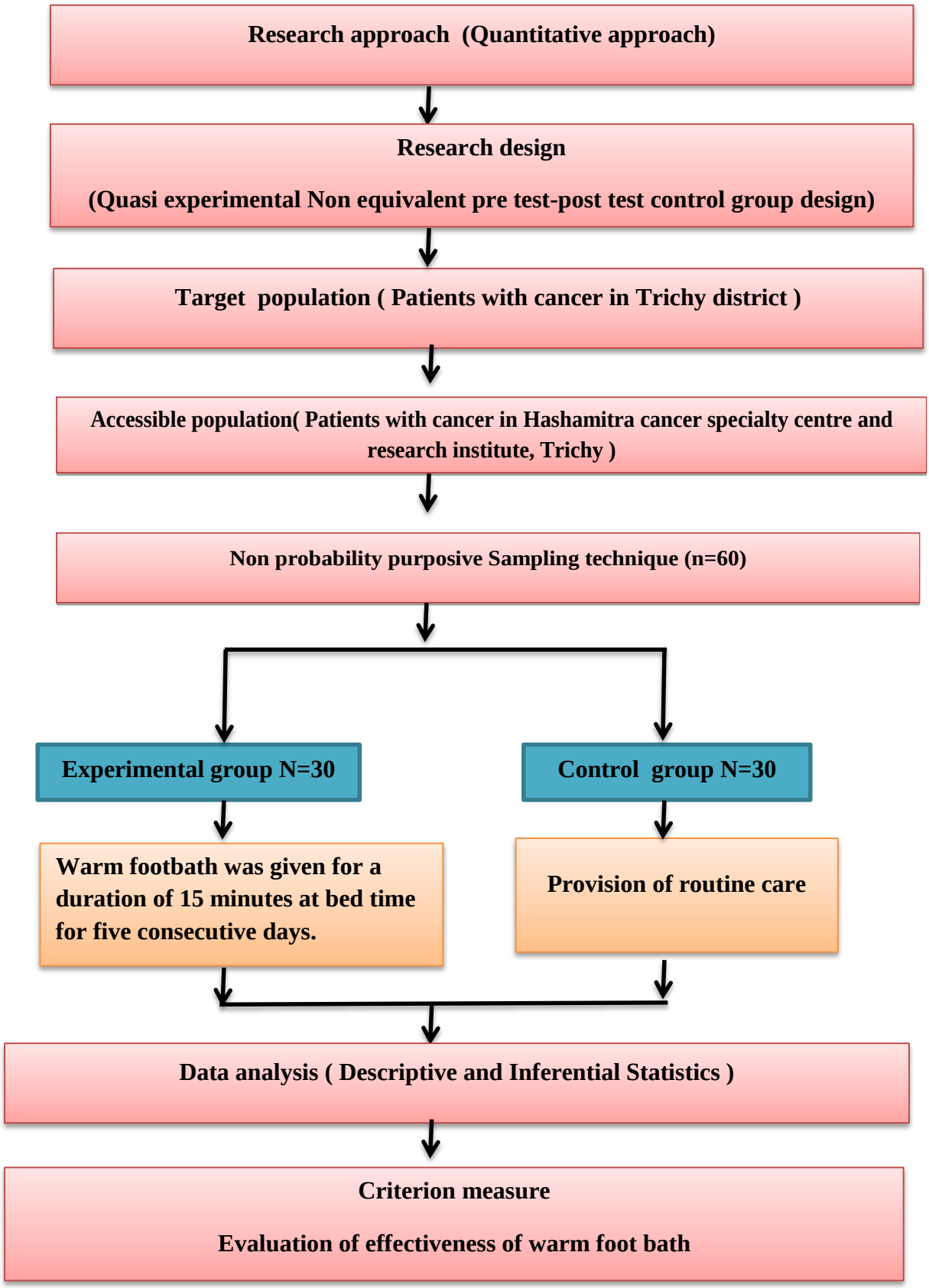
Inferential statistics of Paired 't' test was used to evaluate the quality of sleep on the first and fifth day. Unpaired 't' test was used to find out the significance of warm footbath on quality of sleep. Chi square test was used to associate between the level of pre and post test assessment and their selected demographic variables.

PROTECTION OF HUMAN RIGHTS

Prior to the data collection, the ethical clearance was obtained from the Institutional Human Ethical Committee and written consent was obtained from the concerned authority. Permission was obtained from the hospital Managing Director, Harshamitra super specialty cancer center and research institute and Dayal Nursing Home, Trichy. Participants (patients with cancer) were informed about the study, informed consent was obtained from the individual. The participants were told that they were under obligation to participate in this study.

Figure 2

Schematic representation of research process



Chapter - IV

Data Analysis And Interpretation

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

Data analysis is a procedure for analyzing data, techniques for interpreting the results such as procedures, ways of planning the gathering of data to make its analysis easier, more precise or more accurate, and all the machinery and results of (mathematical) statistics which apply to analyzing data.

(Polit and Hungler, 2010)

Data analysis is the process of bringing order, structure and measuring to the mass of collected data. It is a messy, ambiguous, time consuming, creative, and fascinating process. It does not proceed in a linear fashion; Data analysis is a search for answers about relationships among categories of data.

Data analysis has multiple facets and approaches encompassing diverse techniques under a variety of names, in different business, science and social domains.

This chapter deals with the analysis and interpretation of data collected from 60 patients with cancer (30 – Experimental and 30 – Control) at selected Hospital at Trichy, to assess the effectiveness of warm footbath on quality of sleep among patients with cancer. The data collected for the study was grouped and analyzed as per the objectives set for the study. The findings based on the descriptive and inferential statistical analysis are presented under the following sections.

ORGANIZATION OF DATA

The findings of the study were grouped and analyzed under the following sections:

Section A : Data on demographic and clinical variables among patients with cancer in experimental and control group.

Section B : Data on Assessment of quality of sleep before and after warm footbath among patients with cancer in experimental and control group.

Section C : Data on Effectiveness of warm footbath on quality of sleep among patients with cancer within and between the experimental and control group.

Section D : Data on Association of level of quality of sleep with selected demographic and clinical variables in the experimental and control group.

SECTION-A

DATA ON DEMOGRAPHIC VARIABLES AND CLINICAL VARIABLES AMONG PATIENT WITH CANCER IN EXPERIMENTAL AND CONTROL GROUP

Table 1: Frequency and percentage distribution of demographic variables of patients with cancer in experimental and control group according to their demographic variables.

N = 30+30

Demographic Variables	Experimental Group		Control Group	
	f	%	f	%
Age				
26 - 35 years	3	10.00	1	3.33
36 - 45 years	7	23.33	5	16.67
46 - 55 years	10	33.33	13	43.33
56 - 60 years	10	33.33	11	36.67
Gender				
Male	14	46.67	16	53.33
Female	16	53.33	14	46.67
Religion				
Hindu	17	56.67	24	80.00
Muslim	11	36.67	3	10.00
Christian	2	6.67	3	10.00

Educational status				
Non formal education	14	46.67	3	10.00
Primary	8	26.67	7	23.33
Secondary	4	13.33	11	36.67
Graduation	4	13.33	9	30.00
Occupation				
Unemployed	3	10.00	0	0.00
Agriculture	9	30.00	5	16.67
Private	12	40.00	10	33.33
Industry	3	10.00	13	43.33
Government	3	10.00	2	6.67
Family income				
Rs.<5000	1	3.33	0	0.00
Rs.5000 to 6000	0	0.00	0	0.00
Rs.6000 to 7000	10	33.33	6	20.00
Rs.7000 and above	19	63.33	24	80.00
Marital status				
Married	29	96.67	29	96.67
Unmarried	1	3.33	1	3.33

Duration of the illness				
Less than one year	3	10.00	11	36.67
1 - 3 years	7	23.33	13	43.33
>3 years	20	66.67	6	20.00
Number of hospitalization for cancer				
Nil	11	36.67	1	3.33
1 - 3 times	13	43.33	8	26.67
3 - 6 times	0	0.00	11	36.67
More than 6 times	6	20.00	10	33.33
Treatment				
Medication	14	46.67	20	66.67
Stem cell therapy	7	23.33	0	0.00
Radiation therapy	3	10.00	6	20.00
Palliative therapy	6	20.00	4	13.33
History of co-morbid condition				
Hypertension	14	46.67	10	33.33
Diabetes mellitus	8	26.67	14	46.67
Tuberculosis	4	13.33	0	0.00
Others	4	13.33	6	20.00

Family history of cancer				
Yes	7	23.33	5	16.67
No	23	76.67	25	83.33
Number of chemotherapy cycle				
1 – 3	1	3.33	1	3.33
4 – 5	0	0.00	14	46.67
6	10	33.33	15	50.00
Above 6	19	63.33	0	0.00
Techniques used for sleeping usually at home				
Music	18	60.00	9	30.00
Reading	1	3.33	2	6.67
Meditation	0	0.00	0	0.00
Any other	11	36.67	19	63.33
Factors influencing sleeping				
Pain	21	70.00	11	36.67
Light	1	3.33	0	0.00
Noise	0	0.00	0	0.00
Stress	6	20.00	14	46.67
Others	2	6.67	5	16.67

Control group:

- With regard to the age, 1(3.33%) patients were belonged to the age group of 26-35 years, 5(16.67%) patients were belonged to the age group of 36-45 years, 13(43.33%) patients were belonged to the age group of 46-55 years, 11(36.67%) patients were belonged to the age group of 56-60 years. Considering the gender of the patients with cancer, 16(55.33%) were males and 14(46.67%) were females. With regard to the religion of the patients with cancer, 24(80%) patients were Hindu, 3(10%) patients were Muslim, 3(10%) patients were Christians. Considering the educational status of the patients with cancer, 3(10.00%) were Non Formal education, 7(23.33%) were Primary, 11(36.67%) were secondary, 9(30.00%) were graduated. With regard to the occupation, none of them were unemployed, 5(16.67%) were agricultural workers, 10(33.33%) were Private employee, 13(43.33%) were industrial workers, 2(6.67%) were government workers. Considering the family income, 6(20%) had Rs.5000 to 6000, 24(80%) had Rs.7000 and above. With regard to the marital status, 29(96.67%) were married, 1(3.33%) were unmarried.

- With regard to the duration of the illness, 11(36.67%) had less than one year, 13(43.33%) had 1 to 3 years, 6(20%) had above 3 years. Considering the number of hospitalization for cancer, 1(3.33%) were not yet admitted, 8(26.67%) had 1 to 3 times, 11(36.67%) were had 3 to 6 times, 6(20%) had more than 6 times. With regard to the treatment, 20(66.67%) had medication, None of them had Stem cell therapy, 6(20%) had Radiation therapy, 4(13.33%) were palliative therapy. Considering the history of Co-morbid condition, 10(33.33%) had hypertension, 14(46.67%) had Diabetes mellitus,

None of them had tuberculosis, 6(20%) had other type of diseases. With regard to the family history of cancer, 5(16.67%) were had, 25(83.33%) were not had. Considering the history of number of chemotherapy cycle, 1(3.33%) had 1-3 cycles, 14(46.67%) had 4-5 cycles, 15(50%) had 6 cycles, None of them had above 6 cycles. With regard to the techniques use for sleeping usually at home, 9(30%) were music therapy, 2(6.67%) were reading, none of them had medication, 19(63.33%) were any other techniques. Considering the factors influencing sleeping, 11(36.67%) had pain, 1(3.33%) had light, 14(46.67%) had Stress, 5(16.67%) had others.

Experimental group:

- With regard to the age, 3(10%) patients were belonged to the age group of 26-35 years, 7(23.33%) patients were belonged to the age group of 36-45 years, 10(33.33%) patients were belonged to the age group of 46-55 years, 10(33.33%) patients were belonged to the age group of 56-60 years. Considering the gender of the patients with cancer, 14(46.67%) were males and 16(55.33%) were females. With regard to the religion of the patients with cancer, 17(56.67%) patients were Hindu, 11(36.67%) patients were Muslim, 2 (6.67%) patients were Christians. Considering the educational status of the patients with cancer, 14(46.67%) were Non Formal education, 8(26.67%) were Primary, 4(13.33%) were secondary, 4(13.33%) were graduated. With regard to the occupation, 3(10%) were unemployed, 9(30%) were agricultural workers, 12(40%) were Private employee, 3(10%) were industrial workers, 3(10%) were government workers. Considering the family income, 1(3.33%) had below Rs.5000, 10(33.33%) had Rs.6000 to 7000, 24(80%) had Rs.7000

and above. With regard to the marital status, 29(96.67%) were married, 1(3.33%) were unmarried.

- With regard to the duration of the illness, 3(10%) had less than one year, 7(23.33%) had 1 to 3 years, 20(66.67%) had above 3 years. Considering the number of hospitalization for cancer, 11(36.67%) were not yet admitted, 13(43.33%) had 1 to 3 times, none of them were had 3 to 6 times, 6(20%) had more than 6 times. With regard to the treatment, 14(46.67%) had medication, 7(23.33%) had Stem cell therapy, 3(10%) had Radiation therapy, 6(20%) were palliative therapy. Considering the history of Co-morbid condition, 14(46.67%) had hypertension, 8(26.67%) had Diabetes mellitus, 4(13.33%) had tuberculosis, 4(13.33%) had other type of diseases. With regard to the family history of cancer, 7(23.33%) were had, 23(76.67%) were not had. Considering the history of number of chemotherapy cycle, 1(3.33%) had 1-3 cycles, 10(33.33%) had 6 cycles, 19(63.33%) had above 6 cycles. With regard to the techniques use for sleeping usually at home, 18(60%) were music therapy, 1(3.33%) were reading, none of them had medication, 11(36.67%) were any other techniques. Considering the factors influencing sleeping, 21(70%) had pain, 1(3.33%) had light, 6(20%) had Stress, 2(6.67%) had others.

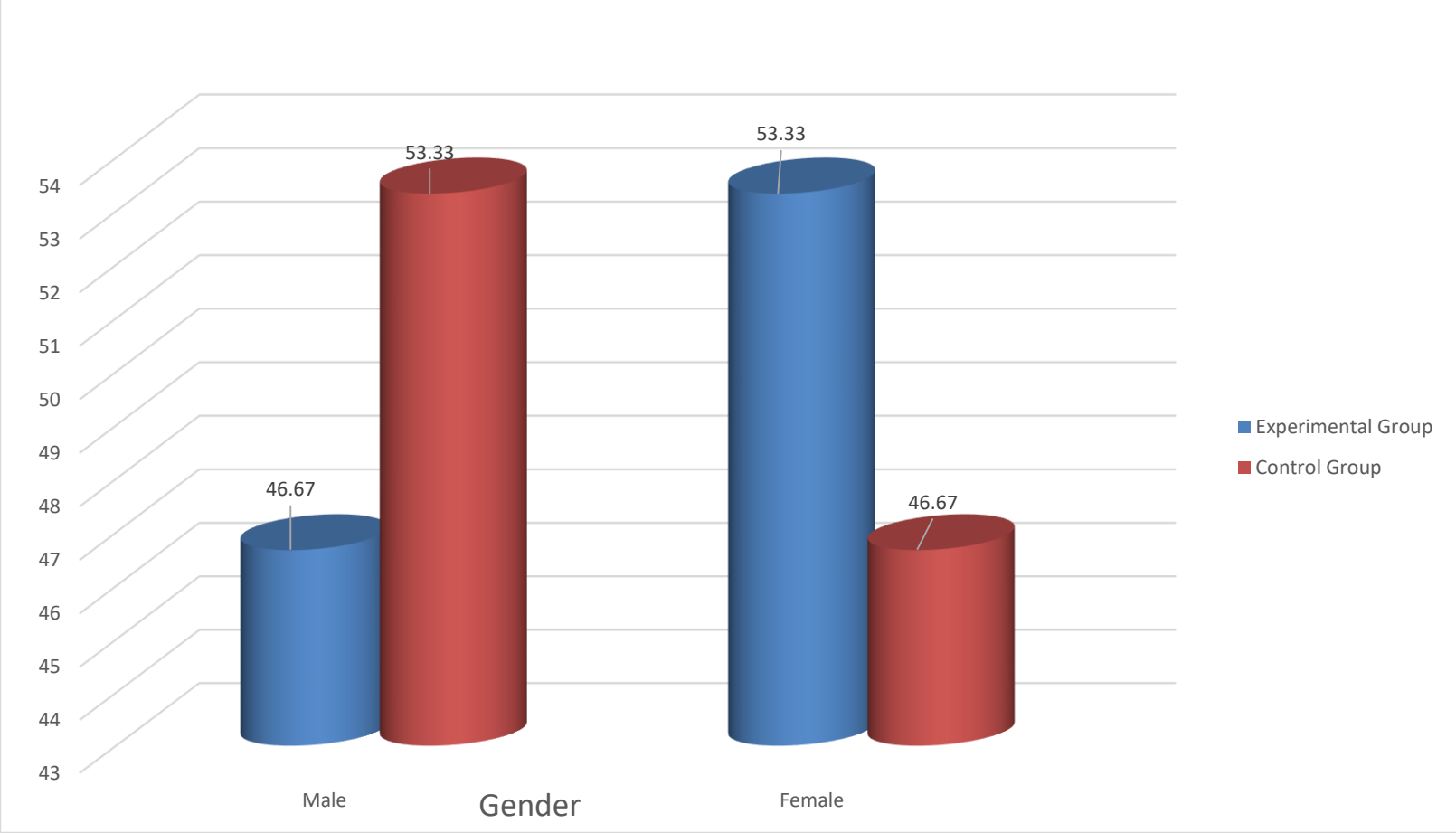


Figure:3 Distribution of subjects based on their gender of the patients with cancer in the experimental and control group

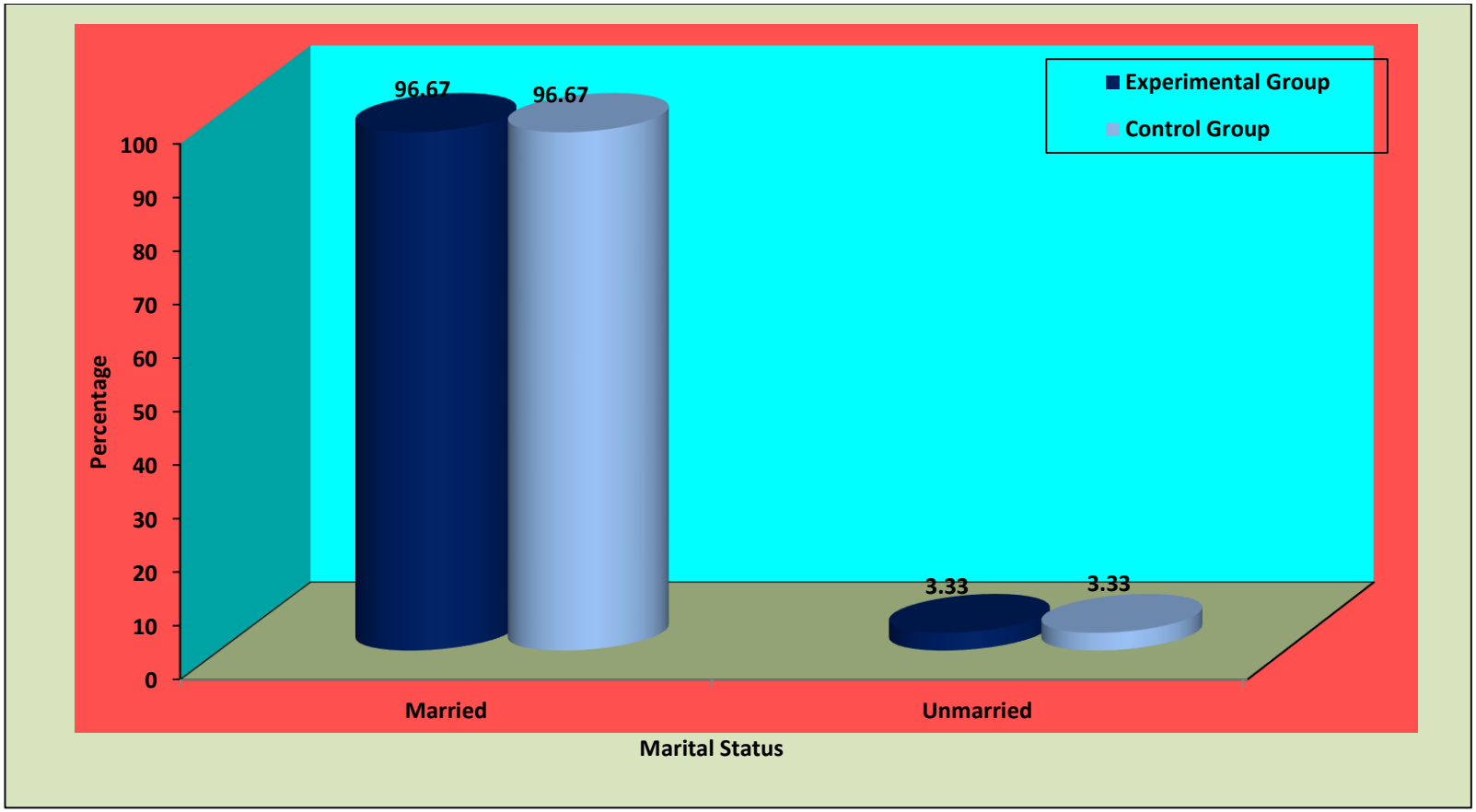


Figure:4 distribution of subjects based on their marital status of the patients with cancer in the experimental and control group

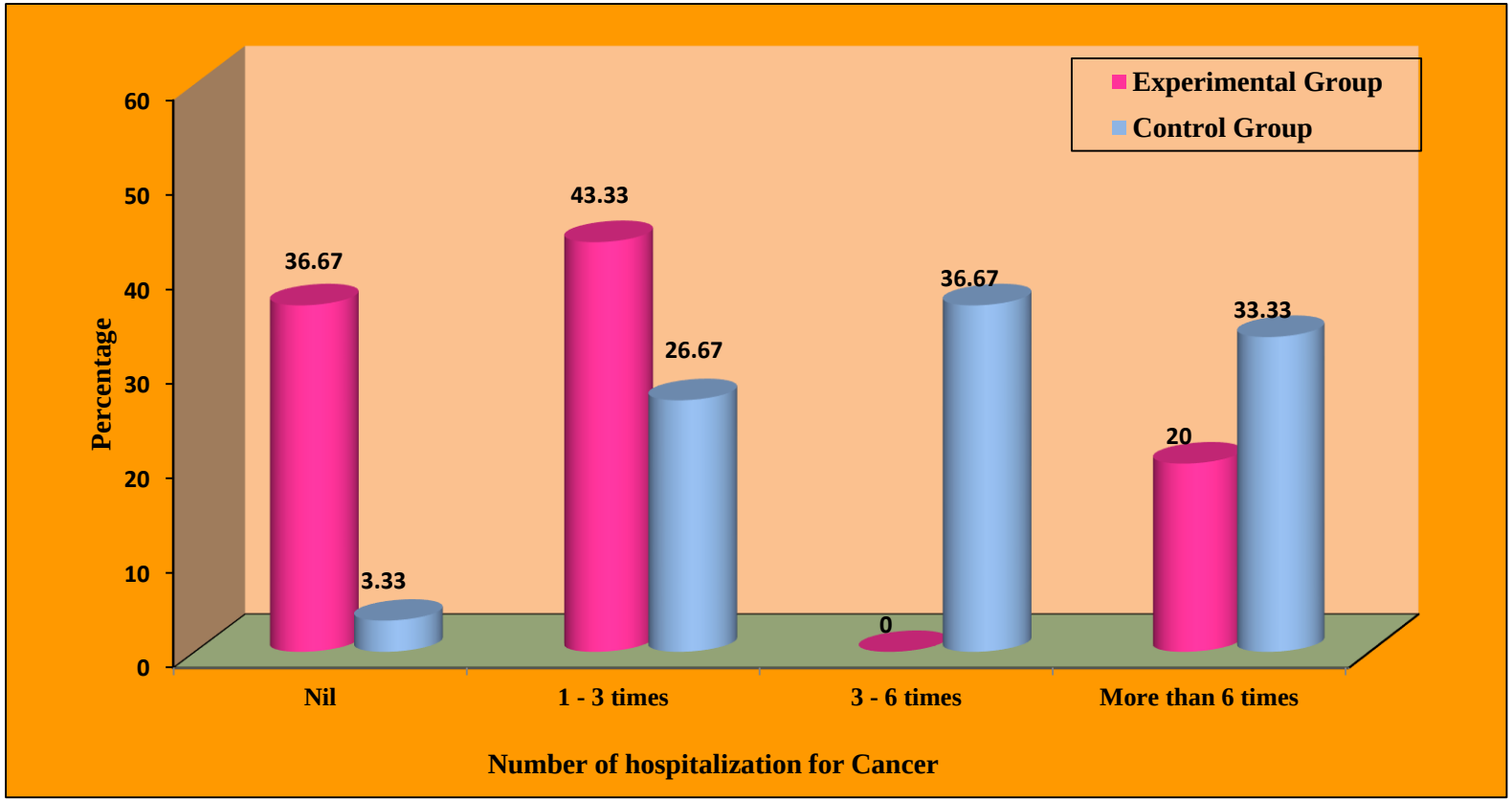


Figure : 5 Distribution of subjects based on their number of hospitalization for cancer among the patients with cancer in the experimental and control group

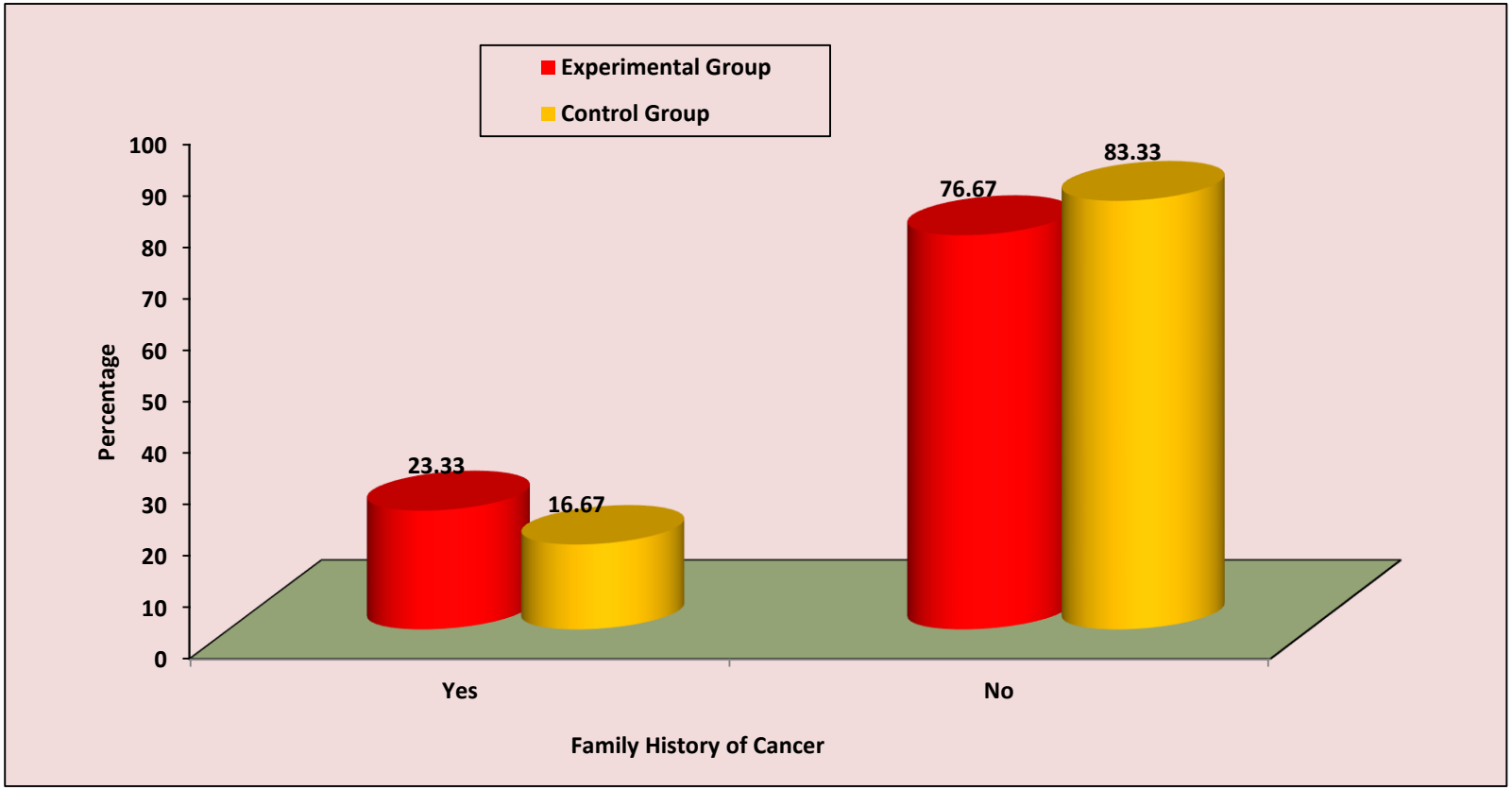


Figure:6 Distribution of subjects based on their family history of cancer among the patients with cancer in the experimental and control g

SECTION B: DATA ON PRETEST AND POIST TEST LEVEL OF QUALITY OF SLEEP AMONG PATIENTS WITH CANCER IN EXPERIMENTAL AND CONTROL GROUP.

Table 2: Effectiveness of warm footbath on quality of sleep among patients with cancer in experimental group

N = 30

Quality of Sleep	Undisturbed Sleep (0 – 5)		Disturbed Sleep (6 – 7)		Poor Sleep (8 – 14)	
	f	%	f	%	f	%
Pre test	4	13.33	17	56.67	9	30.0
Post test	28	93.33	2	6.67	0	0

The table 3 depicts that pre test level of quality of sleep, 17(56.67%) had disturbed sleep, 9(30%) had poor sleep and 4(13.33%) had undisturbed sleep whereas after the administration of warm footbath, 28(93.33%) had undisturbed sleep and only 2(6.67%) had disturbed sleep among patients with cancer in the experimental group.

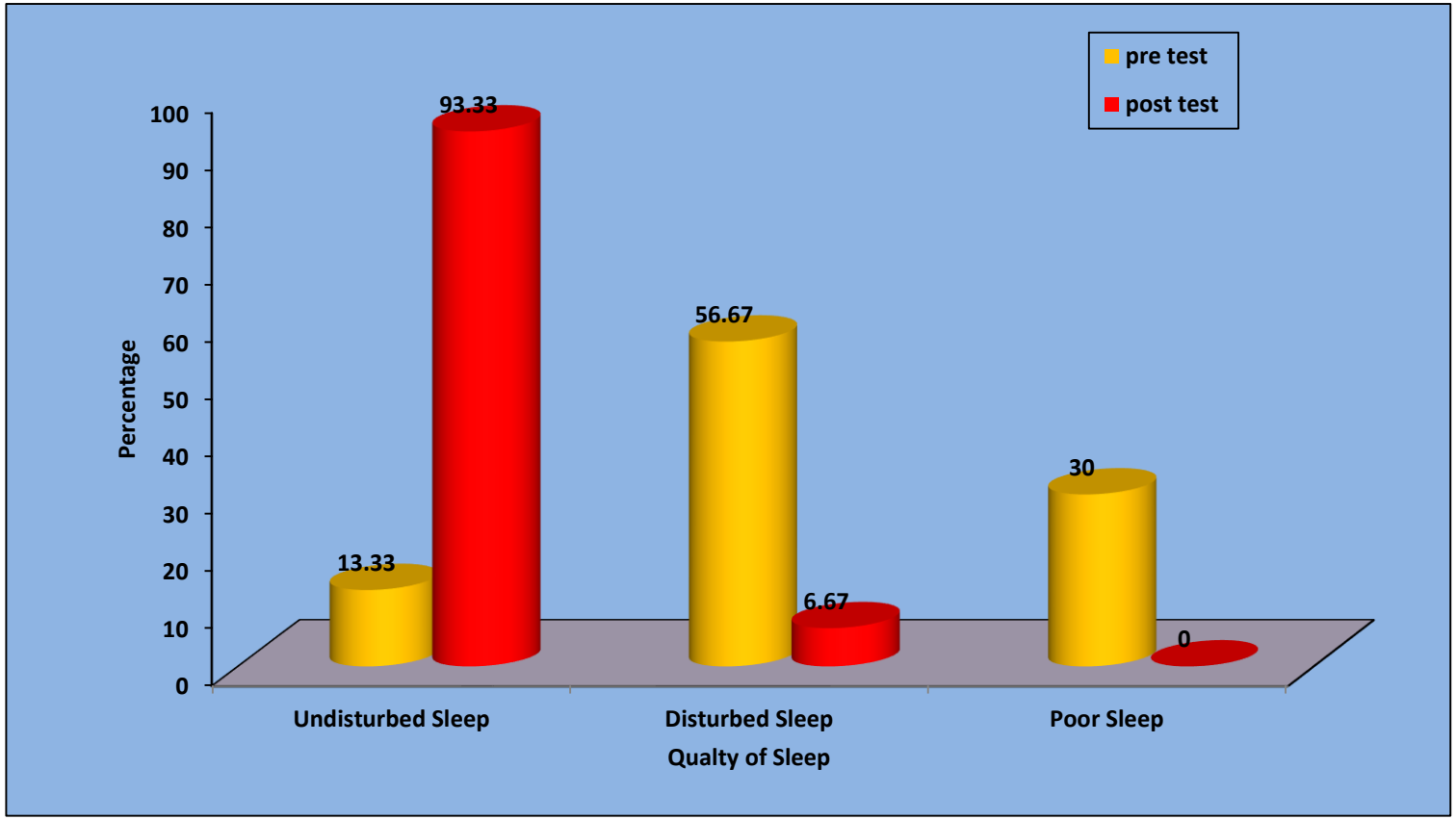


Figure:7 distribution of pretest and post test level of quality of sleep among patients with cancer in the experimental group

Table 4: Effectiveness of warm footbath on quality of sleep among patients with cancer in the control group.

N= 30

Quality of Sleep	Undisturbed Sleep (0 – 5)		Disturbed Sleep (6 – 7)		Poor Sleep (8 – 14)	
	f	%	f	%	f	%
Pre test	1	3.33	20	66.67	9	30.0
Post test	2	6.67	19	63.33	9	30.0

The table 4 in the depicts that pretest, 20(66.67%) had disturbed sleep, 9(30%) had poor sleep and only one (3.33%) had undisturbed sleep whereas in the post test, 19(63.33%) had undisturbed sleep, 9(205) had poor sleep and only 2(6.67%) had undisturbed sleep among patients with cancer in the control group.

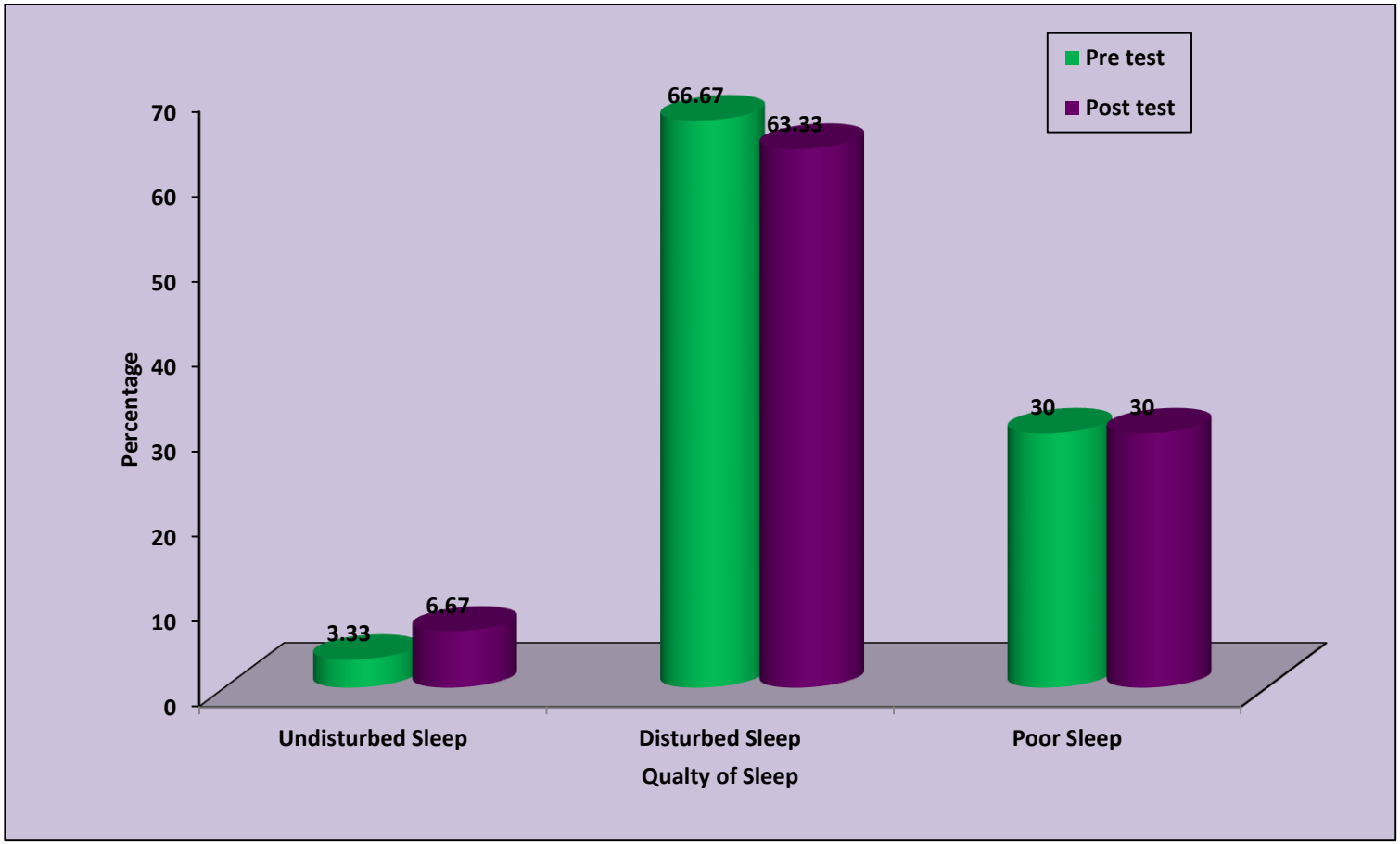


Figure:8 distribution of quality of sleep before and after warm footbath among patients with cancer in the control group

SECTION C: DATA ON EFFECTIVENESS OF WARM FOOTBATH ON QUALITY OF SLEEP AMONG PATIENTS WITH CANCER WITHIN AND BETWEEN THE EXPERIMENTAL AND CONTROL GROUP.

Table 5: Paired 't' test of pre test and post test on level of quality of sleep regarding warm footbath among patients with cancer in the experimental group.

N = 30

Cancer	Mean	S.D	Mean Difference & %	Paired 't' value	P value
Pre test	6.73	1.25	2.23 (15.92%)	**t = 8.853**	**p = 0.0001, S*** **
Post test	4.50	0.82			

***p<0.001, S – Significant

The table 5 shows that the mean score of quality of sleep before administration of warm footbath, Mean was 6.73 and SD was 1.25 and the mean score of quality of sleep after administration of warm footbath mean was 4.50, SD was 0.82. The mean difference score was 2.23 i.e., 15.92%. The calculated paired 't' test value of t = 8.853 was found to be statistically highly significant at p<0.001 level.

This clearly infers that the administration of warm footbath was found to effective in reducing the level of sleep disturbance among patients with cancer in the experimental group.

Table 6: Paired 't' test of pre test and post test on quality of sleep regarding warm footbath among patients with cancer in the control group.

N = 30

Cancer	Mean	S.D	Mean Difference & %	Paired 't' value
Before	7.10	1.26	0.23	t = 0.980
After	6.86	1.07	(1.64%)	p = 0.335, NS

NS – Not Significant

The table 6 shows that the pretest mean score of quality of sleep was 7.10 and the post test mean score of quality of sleep was 6.86. The mean difference score was 0.23 i.e., 1.64%. The calculated paired 't' test value of t = 0.980 was not found to be statistically significant.

This clearly infers that there was no significant difference in the level of quality of sleep among patients with cancer in the control group.

Table 7: Paired 't' test of pre test and post test on level of quality of sleep regarding warm footbath among patients with cancer between the experimental and control group.

N = 60(30+30)

Test	Group	Mean	S.D	Mean Difference	%	Student Independent 't' value	P value
Pre test	Experimental group	6.73	1.25	0.37	26.74%	t = 1.124	0.266 NS
	Control group	7.10	1.26				
Post test	Experimental group	4.50	0.82	2.36	16.86%	**t = 9.592**	**0.0001, S*****
	Control group	6.86	1.07				

***p<0.001, S – Significant, NS – Not Significant

The table 7 shows that the pretest mean score of quality of sleep in the experimental group was 6.75 and the pretest mean score of quality of sleep in the control group was 7.10. The mean difference score was 0.37 i.e., 2.64%. The calculated student independent 't' test value of t = 1.124 was not found to be statistically significant.

The table 7 also shows that the post test mean score of quality of sleep in the experimental group was 4.50 and the post test mean score of quality of sleep in the control group was 6.86. The mean difference score was 2.36 i.e., 16.86%. The calculated student independent 't' test value of t = 9.592 was found to be statistically highly significant.

SECTION D: DATA ON THE ASSOCIATION BETWEEN THE POST TEST LEVEL OF QUALITY OF SLEEP WITH SELECTED DEMOGRAPHIC AND CLINICAL VARIABLES IN THE EXPERIMENTAL AND CONTROL GROUP

Table 8: Association of pretest level of quality of sleep among patients with cancer with their selected demographic variables in the experimental group.

N = 30

Demographic Variables	Undisturbed Sleep (0 – 4)		Disturbed Sleep (6 – 7)		Poor Sleep (8 – 14)		Chi-Square Value χ^2	P value
	f	%	f	%	f	%		
Age								
26 - 35 years	1	3.3	2	6.7	0	0		
36 - 45 years	0	0	3	10.0	4	13.3	χ^2=5.530	0.478
46 - 55 years	1	3.3	6	20.0	3	10.0	(df=6)	NS
56 - 60 years	2	6.7	6	20.0	2	6.7		
Gender								
Male	0	0	11	36.7	3	0.0	χ^2=6.366	0.041
Female	4	13.3	6	20.0	6	20.0		S*
Religion								
Hindu	3	10.0	9	30.0	5	16.7		

Muslim	1	3.3	6	20.0	4	13.3	χ^2=2.116	0.714
Christian	0	0	2	6.7	0	0	(df=4)	NS
Educational status								
Non formal education	1	3.3	9	30.0	4	13.3	χ^2=4.463 (df=6)	0.614 NS
Primary	1	3.3	3	10.0	4	13.3		
Secondary	1	3.3	3	10.0	0	0		
Graduation	1	3.3	2	6.7	1	3.3		
Occupation								
Unemployed	0	0	1	3.3	2	6.7		
Agriculture	1	3.3	6	20.0	2	6.7	χ^2=5.734	0.677 NS
Private	1	3.3	7	23.3	4	13.3	(df=8)	
Industry	1	3.3	1	3.3	1	3.3		
Government	1	3.3	2	6.7	0	0		
Family income								
Rs.<5000	0	0	0	0	1	3.3	χ^2=3.220	0.522
Rs.5000 to 6000	-	-	-	-	-	-	(df=4)	NS
Rs.6000 to 7000	1	3.3	7	23.3	2	6.7		
Rs.7000 and above	3	10.0	10	33.3	6	20.0		

Marital status								
Married	3	10.0	17	56.7	9	30.0	χ^2=6.724 (df=2)	0.035*
Unmarried	1	3.3	0	0	0	0		
Duration of the illness							χ^2=4.988 (df=4)	0.288 NS
Less than one year	1	3.3	2	6.7	0	0		
1 - 3 years	0	0	3	10.0	4	13.3		
>3 years	3	10.0	12	40.0	5	16.7		
Number of hospitalization for cancer							χ^2=10.953 (df=4)	-0.027 S*
Nil	1	3.3	9	30.0	0	0		
1 - 3 times	2	6.7	4	13.3	8	26.7		
3 - 6 times	-	-	-	-	-	-		
More than 6 times	1	3.3	4	13.3	1	3.3		
Treatment							χ^2=2.598 (df=6)	-0.857 NS
Medication	3	10.0	7	23.3	4	13.3		
Stem cell therapy	0	0	5	16.7	2	6.7		
Radiation therapy	0	0	2	6.7	1	3.3		
Palliative therapy	1	3.3	3	10.0	2	6.7		

History of co-morbid condition								
Hypertension	1	3.3	9	30.0	4	13.3	χ^2=4.463 (df=6)	-0.614 NS
Diabetes mellitus	1	3.3	3	10.0	4	13.3		
Tuberculosis	1	3.3	2	6.7	0	0		
Others	1	3.3	2	6.7	1	3.3		
Family history of cancer								-0.455 NS
Yes	0	0	5	16.7	2	6.7	χ^2=1.375 (df=2)	
No	4	13.3	12	40.0	7	23.3		
Number of chemotherapy cycle								
1 – 3	0	0	0	0	1	3.3	χ^2=3.220 (df=4)	-0.522 NS
4 – 5	-	-	-	-	-	-		
6	1	3.3	7	23.3	2	6.7		
Above 6	3	10.0	10	33.3	6	20.0		
Techniques used for sleeping usually at home								
Music	1	3.3	11	36.7	6	20.0	χ^2=7.676 (df=4)	-0.104 NS
Reading	1	3.3	0	0	0	0		
Meditation	-	-	-	-	-	--		
Any other	2	6.7	6	20.0	3	10.0		

Factors influencing sleeping								
Pain	2	6.7	12	40.0	7	23.3	χ^2=8.456 (df=6)	-0.207 NS
Light	1	3.3	0	0	0	0		
Noise	-	-	-	-	-	-		
Stress	1	3.3	3	10.0	2	6.7		
Others	0	0	2	6.7	0	0		

*p<0.05, S – Significant, NS – Not Significant

The table 8 shows that the demographic variables gender and marital status had shown statistically significant association with pretest level of quality of sleep among patients with cancer at p<0.05 level and the other demographic variables had not shown statistically significant association with pretest level of quality of sleep among patients with cancer in the experimental group And clinical variable number of hospitalization for cancer had shown statistically significant association with pretest level of quality of sleep among patients with cancer at p<0.05 level and the other clinical variables had not shown statistically significant association with pretest level of quality of sleep among patients with cancer in the experimental group.

Table 10: Association between the pretest level of quality of sleep among patients with cancer with their selected demographic variables and clinical variables in the control group.

N = 30

Demographic Variables	Undisturbed Sleep (0 – 5)		Disturbed Sleep (6 – 7)		Poor Sleep (8 – 14)		Chi-Square Value	P value
	F	%	No.	%	No.	%		
Age							χ^2=5.827 (d.f=6)	0.443 NS
26 - 35 years	0	0	1	3.3	0	0		
36 - 45 years	0	0	3	10.0	2	6.7		
46 - 55 years	0	0	7	23.3	6	20.0		
56 - 60 years	1	3.3	9	30.0	1	3.3		
Gender							χ^2=7.143 (df=2)	-0.028 S*
Male	0	0	8	26.7	8	26.7		
Female	1	3.3	12	40.0	1	3.3		

Religion								
Hindu	1	3.3	17	56.7	6	20.0	χ^2=2.368 (df=4)	0.668 NS
Muslim	0	0	1	3.3	2	6.7		
Christian	0	0	2	6.7	1	3.3		
Educational status							χ^2=3.132 (df=6)	0.792 NS
Non formal education	0	0	2	6.7	1	3.3		
Primary	0	0	5	16.7	2	6.7		
Secondary	1	3.3	8	26.7	2	6.7		
Graduation	0	0	5	16.7	4	13.3		
Occupation							χ^2=3.845 (df=6)	0.698 NS
Unemployed	-	-	-	-	-	-		
Agriculture	0	0	3	10.0	2	6.7		
Private	1	3.3	7	23.3	2	6.7		
Industry	0	0	8	26.7	5	16.7		
Government	0	0	2	6.7	0	0		

Family income								
Rs.<5000	-	-	-	-	-	-		
Rs.5000 to 6000	-	-	-	-	-	-	χ^2=1.563 (df=2)	0.458 NS
Rs.6000 to 7000	0	0	3	10.0	3	10.0		
Rs.7000 and above	1	3.3	17	56.7	6	20.0		
Marital status							χ^2=0.517 (df=2)	0.772 NS
Married	1	3.3	19	63.3	9	30.0		
Unmarried	0	0	1	3.3	0	0		
Duration of the illness								
Less than one year	1	3.3	8	26.7	2	6.7	χ^2=6.402 (df=4)	-0.171 NS
1 - 3 years	0	0	10	33.3	3	10.0		
>3 years	0	0	2	6.7	4	13.3		

Number of hospitalization for cancer								
Nil	0	0	1	3.3	0	0	χ^2=3.792 (df=6)	-0.705 NS
1 - 3 times	1	3.3	5	16.7	2	6.7		
3 - 6 times	0	0	8	26.7	3	10.0		
More than 6 times	0	0	6	20.0	4	13.3		
Treatment								
Medication	1	3.3	15	50.0	4	13.3	χ^2=5.139 (df=4)	-0.273 NS
Stem cell therapy	-	-	-	-	-	-		
Radiation therapy	0	0	4	13.3	2	6.7		
Palliative therapy	0	0	1	33.	3	10.0		
History of co-morbid condition								
Hypertension	0	0	5	16.7	5	16.7	χ^2=4.365 (df=4)	-0.359 NS
Diabetes mellitus	1	3.3	11	36.7	2	6.7		
Tuberculosis	-	-	-	-	-	-		
Others	0	0	4	13.3	2	6.7		

Family history of cancer								
Yes	1	3.3	4	13.3	0	0	χ^2=6.960 (df=2)	-0.031 S*
No	0	0	16	53.3	9	30.0		
Number of chemotherapy cycle							χ^2=3.889 (df=4)	-0.421 NS
1 – 3	0	0	0	0	1	0		
4 – 5	1	3.3	10	33.3	3	10.0		
6	0	0	10	33.3	5	16.7		
Above 6	-	-	-	-	-	-		
Techniques used for sleeping usually at home							χ^2=4.786 (df=4)	-0.310 NS
Music	0	0	4	13.3	5	16.7		
Reading	0	0	2	6.7	0	0		
Meditation	-	-	-	-	-	--		
Any other	1	3.3	14	46.7	4	13.3		

Factors influencing sleeping							χ^2=3.911 (df=4)	-0.418 NS
Pain	0	0	6	20.0	5	16.7		
Light	-	-	-	-	-	-		
Noise	-	-	-	-	-	-		
Stress	1	3.3	11	36.7	2	6.7		
Others	0	0	3	10.0	2	6.7		

*p<0.05, S – Significant, NS – Not Significant

The table 10 shows that the demographic variable gender had shown statistically significant association with pretest level of quality of sleep among patients with cancer at p<0.05 level and the other demographic variables had not shown statistically significant association with pretest level of quality of sleep among patients with cancer in the control group.

The clinical variable family history of cancer had shown statistically significant association with pretest level of quality of sleep among patients with cancer at p<0.05 level and the other clinical variables had not shown statistically significant association with pretest level of quality of sleep among patients with cancer in the control group.

Chapter -V

Discussion

CHAPTER – V
DISCUSSION

This study was conducted to assess the effectiveness of warm footbath on quality of sleep among patients with cancer in selected hospitals at Trichy. A non-probability purposive sampling technique was used to collect data from the study participants. 60 samples were taken, 30 in experimental and 30 in control group. Pretest and post test was conducted. The Data were collected for a period of six weeks in selected hospitals, Trichy. The discussion was based on the objectives specified in this study.

This chapter discussed about the findings of the study derived from the statistical analysis and its pertinence to the objectives set for the study and the related literature.

The findings of the study based on the objectives were:

The first objective was to assess the pretest and post test level of quality of sleep among patients with cancer in experimental group and control group.

The findings shows that experimental group and control group before administration of warm footbath, 17(56.67%) had disturbed sleep, 9(30%) had poor sleep and 4(13.33%) had undisturbed sleep whereas after the administration of warm footbath, 28(93.33%) had undisturbed sleep and only 2(6.67%) had disturbed sleep among patients with cancer in the experimental group.

The findings showed that in control group pretest, 20(66.67%) had disturbed sleep, 9(30%) had poor sleep and only one (3.33%) had undisturbed sleep whereas in the post test, 19(63.33%) had undisturbed sleep, 9(20%) had poor sleep and only 2(6.67%) had undisturbed sleep among patients with cancer.

In control group, the pretest mean score of quality of sleep was 7.10 and the post test mean score of quality of sleep was 6.86. The mean difference score was 0.23 i.e., 1.64%. The calculated paired 't' test value of t = 0.980 was not found to be statistically significant.

This clearly infers that there was no significant difference in the level of quality of sleep among patients with cancer in the control group.

In experimental group, the mean score of quality of sleep before administration of warm footbath was 6.73 and the mean score of quality of sleep after administration of warm footbath was 4.50. The mean difference score was 2.23 i.e., 15.92%.The calculated paired 't' test value of t = 8.853 was found to be statistically highly significant at $p<0.001$ level.

This clearly infers that the administration of warm footbath was found to effective in reducing the level of sleep disturbance among patients with cancer in the experimental group.

H_1 was accepted.

The above the findings are consistence with the findings of following study:

Anju philip (2016) conducted a study to evaluate the effectiveness of warm footbath on quality of sleep among patients with cancer in selected hospitals, Coimbatore district. Non-probability purposive sampling technique was used to select the sample size of 60 patients. The findings post test, in experimental group 15(53.6%) had the sleep quality score between 6-8 on the first day and 16(57.14%) patients had sleep quality score between 3-5 on the fifth day. The assessment of sleep quality scores among patients with cancer in the control group shows that 15(53.6%)

had the sleep quality score between 6-8 on the first day and 13(46.43%) patients had sleep quality score between 6-8 and 9-11 on the fifth day respectively.

- **The second objective of this study to evaluate the effectiveness of warm footbath among patients with cancer in experimental group.**

In control group, the pre test level of quality of sleep 20(66.67%) had disturbed sleep, 9(30%) had poor sleep and only one (3.33%) had undisturbed sleep whereas in the post test of quality of sleep 19(63.33%) had undisturbed sleep, 9(205) had poor sleep and only 2(6.67%) had undisturbed sleep among patients with cancer in the control group.

In control group, the pretest mean score of quality of sleep was 7.10 and the post test mean score of quality of sleep was 6.86. The mean difference score was 0.23 i.e., 1.64%. The calculated paired 't' test value of t = 0.980 was not found to be statistically significant. This clearly infers that there was no significant difference in the level of quality of sleep among patients with cancer in the control group.

In experimental and control group, the pretest mean score of quality of sleep in the experimental group was 6.75 and the pretest mean score of quality of sleep in the control group was 7.10. The mean difference score was 0.37 i.e., 2.64%. The calculated overall 't' test value of t = 1.124 was not found to be statistically significant.

The findings shows that in the experimental group calculated 't' value for quality of sleep was 8.853 , which was highly significant at $P<0.001$ level. It can be concluded that warm footbath was effective among the patients with cancer**.**

Hence, H_2 was accepted

The above findings are consistent with the findings of the following study:

Arsh preet kaur et. al., (2017) conducted a pre experimental study to assess the effectiveness of warm water footbath on quality of sleep among hospitalized patients at amrisar. In this study 60 female patients were participated. This study adopted a convenient sampling technique. The result of the study revealed that in pretest 38(63.3%) of patients had poor sleeping pattern and 22(36.7%) had fair sleeping pattern. In post test 12(20%) had poor sleeping pattern, 30(50%) had fair quality of sleep and 18(30%) were had good quality of sleep. On sixth day the pretest mean SD was 9.15 and 2.291 and post test mean SD was 6.78 and 2.2768. The improvement was statistically tested by paired "t" test value (6.552) and the result was found to be significant at 'p' value<0.001 level

- **The third objective of this study is to find out association between the pretest level of sleeping pattern with selected demographic variables and clinical variables in control and experimental group**

In control group, the obtained x_2 values shows that there was no significant association between the quality of sleep score and demographic variables in the control group . Such as Age, sex, education, marital status, occupation, previous history of smoking habits, income of the family had no significant association with posttest level of quality of sleep ($p>0.05$), showing that post test level of quality of sleep score is independent of these demographic variables in the control group.

The findings shows that, in the experimental group the obtained χ_2 values computed that there was a significant association seen between post test sleep scale score and age of the patient ($p=0.010$), showing that the post test level of quality of sleep is dependent on the age of the patient in the experimental group.

There was a significant association seen between posttest level of quality of sleep and previous history of using sleeping techniques ($p=0.001$), showing that the post test level of quality of sleep is dependent on the previous history of using sleeping techniques in the experimental group.

While all the other parameters viz. severity of cancer, family history of cancer, co-morbid illness, number of chemotherapy cycles, number of radiation cycles, Number of hospitalization, techniques used for sleeping at home and influencing factors that affect the sleep had no significant association with post test post test level of quality of sleep ($p>0.05$), post test level of sleep is independent of these demographic variables in the experimental group.

Chapter - VI

Summary and Recommendations

CHAPTER –VI

SUMMARY AND RECOMMENDATION

This chapter deals with the summary and conclusion that are drawn. It focuses on the implications and gives recommendations for Nursing practice, Nursing administration, Nursing education, Nursing research.

SUMMARY OF THE STUDY

The findings of the study indicate that the warm foot bath was effective in improving quality of sleep among patient with cancer.

THE OBJECTIVES OF THE STUDY:

- To assess the pretest and post test level of quality of sleep among patients with cancer in experimental group and control group.
- To evaluate the effectiveness of warm footbath among patients with cancer in experimental group.
- To find out association between the pretest level of quality of sleep with selected demographic variables and clinical variables in experimental group and control group.

HYPOTHESIS

- **H_1:** The mean post test level of quality of sleep will be significantly higher than mean pre test level of quality of sleep among patients with cancer in experimental group.
- **H_2:** The mean post test level of quality of sleep among patients with cancer in experimental group will be significantly higher than the mean post test level of quality of sleep among patients with cancer in control group.

- **H3:** There will be significance association between the mean pretest level of quality of sleep among patient with cancer with their selected demographic and clinical variables in experimental and control group.

In this study a quasi-experimental, non-randomized pretest–posttest design control group was adopted. Purposive sampling technique was used to select each 30 samples in experimental and control group who fulfilled the inclusive criteria. The warm footbath was given among patients with cancer to for 5 consecutive days at bed time . Groningen sleep quality scale was used for assessing the Pre and Posttest level of quality of sleep at 1st and 5th day .the tool was validated by nursing and medical the experts. Pilot study was conducted in dayal nursing home, Trichy. To check the feasibility of the study. Validity and reliability of the tool was checked. The tool was to be practicable and feasible. The tool was reliable at 0.65, which found to be highly reliable. Hence the tool was finalized to proceed with main study.

The ethical aspects of the study was maintained throughout the study by getting formal permission from the respective authorities and informed written consent from the patients with cancer. The information collected was kept confidential and it was used only for the research purpose. The sample size consist of 60 patients with cancer. 30 samples included in the experimental group and 30 samples were included in the control group. Pre test was conducted to the experimental and control group. After pre test the researcher was administered warm footbath. Post test was conducted for the control and experimental group after 5 days. The data was analyzed using both descriptive and inferential statistics. Interpretation and discussion was done based on the objectives of the study.

MAJOR FINDING OF THE STUDY

- The results shows that majority of the patients With regard to age, 10(33.33%) in experimental group and 13(43.33%) in control group belongs to the age group of 46 to 55 years and 10(33.33%) in experimental group and 11(36.7%) in control group belonged to the age group of 56 to 60 years. Considering the sex, 14 (46.67%) patients in the experimental group and 16 (53.3%) in the control group were females and the remaining were males.
- Regarding religion of the patients with cancer showed that in experimental group 17(56.67 %) patients were Hindu and in control group 24(80%) patients were Hindu. In relation to education, 14(46.67%) of them were illiterate and 16(53.33%) of them had literate in experimental group and 3(10%) of them illiterate and 27(90%) of patients were literate in control group. With regard to the occupation, 12(40%) were works in private and 3(10%) were industrial workers in experimental group and 9(30%) were self-workers and 13(43%) were industrial workers in the control group.
- Considering the family income, 19(63.33%) were got monthly income of Rs.7000 and above in experimental group, 24(80 %) were got monthly income of Rs. 7000 above in control group. In relation to marital status 22(73.3%) were married and 6(20%) unmarried in experimental group and 15(50%) were married and 6(20%) un married in control group.
- Considering the duration of illness 20(66.67%) subjects having above 3 years and 7(23.33%) patients having 1 to 3 years of illness in experimental group and 6(20%) patients having above 3 years and 13(43.33%) patients having 1 to 3 years of illness in control group. In

relation to No. of hospitalization for cancer 13(43.33%) patients were 1-3 times in experimental group and 11(36.67%) patients were 3-6 times in control group. With regard to mode of treatment 14(46.67%) patients were receiving medications in experimental group, 20(66.67%) patients were received medications in control group.

- Considering history of co-morbid condition 14(46.67%) patients were hypertension and 8(26.67%) patients were diabetes mellitus in experimental group, 10(33.33%) patients were hypertension and 14(46.67%) patients were having diabetes mellitus in control group.
- Before administration of warm footbath, 17(56.67%) had disturbed sleep, 9(30%) had poor sleep and 4(13.33%) had undisturbed sleep whereas after the administration of warm footbath, 28(93.33%) had undisturbed sleep and only 2(6.67%) had disturbed sleep among patients with cancer in the experimental group.
- In the pretest, 20(66.67%) had disturbed sleep, 9(30%) had poor sleep and only one (3.33%) had undisturbed sleep whereas in the post test, 19(63.33%) had undisturbed sleep, 9(205) had poor sleep and only 2(6.67%) had undisturbed sleep among patients with cancer in the control group.

IMPLICATIONS

The findings of the study has several implications in the following fields. It can be discussed in four areas namely, Nursing practice, Nursing Administration, Nursing Education, Nursing Research.

Nursing practice:

- Nurses can adopt simple interventions like warm footbath therapy while providing care for the patients with cancer .
- warm footbath therapy used in this study can be applied in the practice set up; there by increasing the nursing practice based on evidence.

Nursing administration

- Nurse administrators can arrange seminars and workshops to educate learners and staff nurses regarding quality of sleep among patients with cancer.
- The findings of this study will help nurse administrator to plan and organize various in service programmes like in-service education and workshop on sleeping pattern and its effects on patients with cancer.
- It helps to provide critical thinking regarding pain management in oncological surgical unit.
- The nurse administrator can take part in developing protocols related to sleeping pattern.

Nursing education

- Several implications can be drawn from the present study for nursing education
- The curriculum incorporating the recent trends and demands of the changing society needed for the progress of nursing education.
- Practical hours for complementary and alternative medicine including yoga, massage and reflexology can be included in the nursing curriculum which will help the students to improve their skills.

Nursing research

- This study motivates nursing personnel to do further studies related to this field.
- Research can be conducted to find out the effectiveness of various non pharmacological methods in pain management of patients who have patients with cancer.

LIMITATIONS

During the period of study, the limitation faced by an investigator were as follows.

- Intervention was limited to 15 – 20 minutes
- Study was conducted only on patients who have undergone oncological surgical patients.
- Relatively small sample size
- Randomization of samples could not be done

RECOMMENDATIONS

The following recommendations were made by the researcher after the study,

- The study can be replicated on a larger samples to generalize the results
- The comparative study can be conducted with more than one intervention
- Training programmers for nurses can be given on complimentary therapies
- A study can be conducted to evaluate the knowledge and attitude of nurses regarding sleeping pattern disturbances among patient with cancer.

SUMMARY

This chapter dealt with the findings of the study related to demographic variables, effectiveness of warm footbath using Groningen sleep quality scale. This chapter also includes major findings of the study in nursing area as Nursing practice, Nursing administration, Nursing education and Nursing Research.

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Appendices

APPENDIX-I
PERMISSION SEEKING LETTER FOR CONDUCTING STUDY

SAKTHI COLLEGE OF NURSING
(Approved by Govt. of Tamilnadu, Recognised by INC, TNC & Affiliated to Dr. M.G.R. Medical University)

Sakthi Nagar, Dindigul - Palani Main Road,
Palakkanuthu - (Po.),
Oddanchatram - 624 619.
Dindigul (Dt.), Tamilnadu.

Phone : 0451 - 2050272
Mobile : 97509 56810
Fax : 0451-2554317
E-mail : sakthinursingcollege@gmail.com

PERMISSION LETTER

From

The Principal,
Sakthi College of Nursing,
Oddanchatram, Dindigul (Dt)

To

Dr. G. Govindaraj MBBS. M.ch. FICS,
Surgical oncologist
Harshamitra cancer centre and Research institute (P) ltd.
Trichy.

Respected Sir / Madam,

Sub.: Request for permission to conduct Research study – reg.

Mrs.Gayathri.M is a bonafide M.Sc., Nursing student studying in our college. As a partial fulfillment of The Tamilnadu Dr. MGR Medical University requirement for the award of the M.Sc., Nursing Degree, she is undertaking **("A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF WARM FOOT BATH ON QUALITY OF SLEEP AMONG PATIENTS WITH CANCER IN SELECETED HOSPITAL AT TRICHY DISTRICT")**, she has identified your centre as the best place to conduct the study.

Further details of the proposed project will be furnished by the student personally. She will not hinder your routine in any way and she will abide to the rules and regulations of the institution. All the information collected from institution will be kept confidential.

I kindly request you to grant her permission to conduct the study at your esteemed institution.

Thanking you,

Yours sincerely,

Dr. V. JANAHIDEVI M.Sc (N), Ph.D.
PRINCIPAL
SAKTHI COLLEGE OF NURSING
Sakthi Nagar, Dindigul - Palani Main Road,
Palakkanuthu (Po), Oddanchatram - 624 619,
Dindigul District.

Date :

Place :

Permitted 2500/- Rs fees to be paid

HARSHAMITRA SUPER SPECIALITY
CANCER CENTRE AND RESEARCH INSTITUTE PVT. LTD.
No:41, Nachiyar Kovil Road, Woraiyur, Trichy-620 003.

Dr.G.GOVINDARAJ
MBBS.,MS.,M.Ch.,FICS.,
Surgical Oncologist
Reg. No. : 54831

APPENDIX-II

LETTER SEEKING EXPERT OPINION AND CONTENT VALIDITY

From

Mrs.M.Gayathri,
M.Sc (Nursing) II Year,
Sakthi college of Nursing,
Oddanchatram, Dindigul.

To

Respected Madam/Sir,

Sub: Requisition for expert opinion and content validity regarding.

I am a M.Sc.(Nursing) II year student of Sakthi College of Nursing, Oddanchatram , Dindigul, under Dr. M.G.R. Medical university. As a partial fulfillment of my M.Sc. (Nursing) degree program, I am conducting a research study on "**A quasi experimental study to evaluate the effectiveness of warm footbath on quality of sleep among patients with cancer in selected hospital at Trichy district"**

I am sending the tool for content validity and for your expert & valuable opinion. I will be very thankful if you return it at the earliest. Here with I have enclosed the necessary documents.

Thanking you,

Yours sincerely

(M.Gayathri)

APPENDIX-III

CERTIFICATE OF CONTENT VALIDITY

To Whom So Ever It May Concern

This is to certify that the tool prepared by **MRS.M.Gayathri M.Sc (N)** II Year student of Sakthi College of Nursing for the conduction of the research study on "**A quasi experimental study to evaluate the effectiveness of warm footbath on quality of sleep among patients with cancer in selected hospitals at Trichy district"** is valid. She can proceed in conducting data collection.

Signature

Place:

Date:

CERTIFICATE OF CONTENT VALIDITY

To Whom So Ever It May Concern

This is to certify that the tool prepared by **MRS.GAYATHRI.M, MSc (N)** II Year student of Sakthi College of Nursing for the conduction of the research study on "**A quasi experimental study to evaluate the effectiveness of warm foot bath on quality of sleep among patients with cancer in selected hospital at Trichy district"** is valid. She can proceed in conducting data collection.

Signature

9/2/19

Dr.G.GOVINDARAJ
MBBS.,MS.,M.Ch.,FICS.,
Surgical Oncologist
Reg. No. : 54831

Place: Trichy.

Date: 09/02/19.

CERTIFICATE OF CONTENT VALIDITY

To Whom So Ever It May Concern

This is to certify that the tool prepared by **MRS.GAYATHRI.M, MSc (N)** II Year student of Sakthi College of Nursing for the conduction of the research study on "**A quasi experimental study to evaluate the effectiveness of warm foot bath on quality of sleep among patients with cancer in selected hospital at Trichy district"** is valid. She can proceed in conducting data collection.

Signature

Place: Jennys college of Nursing, Trichy.

B. Santhanlakshmi

Date:

(B. santhanalakshmi)

JENNYS COLLEGE OF NURSING TRICHY-9

CERTIFICATE OF CONTENT VALIDITY

To Whom So Ever It May Concern

This is to certify that the tool prepared by **MRS.GAYATHRI.M, MSc (N)** II Year student of Sakthi College of Nursing for the conduction of the research study on "**A quasi experimental study to evaluate the effectiveness of warm foot bath on quality of sleep among patients with cancer in selected hospital at Trichy district"** is valid. She can proceed in conducting data collection.

Signature

Place: Trichy, Dr. G. Sakunthala College of Nsg.

A. Sasmila

Date:

(A. Sasmila M.Sc (N))

Dr. G. SAKUNTHALA COLLEGE OF NURSING ★ TRICHY ★

APPENDIX-IV

LIST OF EXPERTS

1.Dr.G.Govindaraj MBBS., MS., M.ch., FICS.,
Surgical oncologist,
Harshamitra super specialty cancer Centre and research institute of pvt ltd
Woraiyur, Trichy.

2.R.K.Tamilmani,
Assistant Medical Officer, Naturopathyand Yoga Department,
GovernmentHead Quarters Hospital, Manapparai,
Trichy District.

3.Dr.JanahiDevi,M.Sc(N),Ph.D.,
Principal,
Sakthi College of Nursing,
Oddanchatram.

.

4.Prof.A.Sarmila, M.Sc(N).,
Dr.Sakunthala College of Nursing,
TrichyDistrict.

5.Prof.B.Santhanalakshmi, M.Sc(N).,
Jennys College of Nursing,
TrichyDistrict.

6. Mr. Manikandan,
Statistician,
Madurai.

APPENDIX-V

RESEARCH CONSENT FORM

Dear participants,

I am GAYATHRI.M. M.Sc. Nursing Student of Sakthi College of Nursing, Oddanchatram. As a part of my study, a research on "Effectiveness of warm footbath on quality of sleep among patients with cancer at selected hospitals in Trichy district" is to be conducted. The study will be helpful in improving quality of sleep level.

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

Thanking You,

Signature of the researcher

I……..hereby consent to participate and undergo the study

Place: Signature of the participant

Date:

APPENDIX-V

ஆராய்ச்சி ஒப்புதல் படிவம்

அன்பார்ந்த பங்களிப்போர்களே,

நான் காயத்ரி எம்எஸ்சி சக்தி நர்சிங் கல்லூரியின் நர்சிங் மாணவி எனது ஆய்வின் ஒரு பகுதியாக திருச்சி மாவட்டத்தில் தேர்ந்தெடுக்கப்பட்ட மருத்துவமனைகளில் புற்றுநோயால் பாதிக்கப்பட்ட நோயாளிகளிடையே தூக்கத்தின் தரம் குறித்த சூடான பாதையின் செயல் திறன் குறித்த ஆராய்ச்சி நடத்தப்பட உள்ளது . தூக்கத்தின் தரத்தை மேம்படுத்த இந்த ஆய்வு உதவியாக இருக்கும் ஆய்வில் பங்கேற்க உங்கள் சம்மதத்தையும் ஒத்துழைப்பையும் நான் இதன்மூலம் பெறுகிறேன் . உங்கள் பதில்களில் வெளிப்படையாகவும் நேர்மையாகவும் இருங்கள் சேகரிக்கப்பட்ட தகவல்கள் ரகசியமாக வைக்கப்பட்டு பெயர் தெரியாமல் பராமரிக்கப்படும்.

நன்றி

ஆராய்ச்சியாளரின் கையொப்பம்.

நான் _____ இதன்மூலம் பங்கேற்று ஆய்வில் ஈடுபட ஒப்புக்கொள்கிறேன் ஆய்வில் பங்கேற்க உங்கள் சம்மதத்தையும் ஒத்துழைப்பையும் நான் இதன்மூலம் பெறுகிறேன். உங்கள் பதில்களில் வெளிப்படையாகவும் நேர்மையாகவும் இருங்கள் சேகரிக்கப்பட்ட தகவல்கள் ரகசியமாக வைக்கப்பட்டு பெயர் தெரியாமல் பராமரிக்கப்படும்.

பங்கு பெறுவோரின் கையொப்பம்.

APPENDIX-VI

CERTIFICATE OF ENGLISH EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation **"A quasi experimental study to the effectiveness of warm footbath on quality of sleep among patient with cancer selected hospitals in Trichy district"** by Mrs.M.Gayathri, M.Sc (N) –II year student of Sakthi College Of Nursing was edited for English language appropriateness by **Mrs.VENNILA, M.A., M.Ed., M.Phil., (Ph.D).,** English HOD of English Department working in Sakthi College of Arts and Science.

Place : **Signature**
Date :

APPENDIX-VII

CERTIFICATE OF TAMIL EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation **"A quasi experimental study to the effectiveness of warm footbath on quality of sleep among patient with cancer selected hospitals in Trichy district"** by Mrs.M.Gayathri, M.Sc (N) –II year student of Sakthi College Of Nursing was edited for English language appropriateness by **Mrs.DR.MURUGESWARI, M.A., M.Phil., B.Ed., Ph.D.,** HOD of Tamil Department working in Sakthi College of Arts and Science.

Place : **Signature**
Date :

APPENDIX-VIII

SAKTHI COLLEGE OF NURSING

CERTIFICATE FOR ETHICAL CLEARANCE

Committee members **Chairman** 1. Dr.Vembanan .M.B.B.S, M.S., President, Sakthi educational institution. **Members** 1. Dr.Prof.Janahi Devi, M.Sc (N),Ph.D., Principal, Sakthi College of Nursing 2. Dr.R.K.Tamilmani, Assistant Medical Officer, Naturopathy And Yoga Department, Government Head Quarters Hospital, Manapparai, Trichy District . 3. Mr.V.Palanichamy, B.A.B.L., Advocate 5. Mr.DiazPrabhakaran, M.A., Sociology 6. Ms.Mariyammal, Ph.D., Psychology	This is to certify that Mrs.M.Gayathri M.Sc Nursing II year student department in Medical and Surgical Nursing submitted a protocol on study as " Effectiveness of warm footbath on quality of sleep among patients with cancer in selected hospitals at Trichy district." The above protocol was received by ethical committee approved and mentioned that the study is feasible to carry out under the guidance of an eligible guide. **Signature of the Chairman**

APPENDIX-IX

PART-I

SECTION -A

DEMOGRAPHIC VARIABLES

INSTRUCTIONS

This part consists of personal information and you are requested to answer the question correctly. The information collected from you will be kept confidential.

1.Age in years

a) 26-35 years ( )

b) 36-45 years ( )

c) 46-55 years ( )

d)56-60 years ( )

2.Gender

a)Male ( )

b)Female ( )

3. Religion

a)Hindu ( )

b) Muslim ( )

c)Christian ( )

4.Educational status

a)Non formal education ( )

b) Primary ( )

c)Secondary ( )

d)Graduation ( )

5.Occupation

a)Unemployed ( )

b)Agriculture ( )

c)Private ( )

d)Industry ( )

e)Government ( )

6.Family income

a)Rs<5000 ( )

b)Rs 5000 to 6000 ( )

c)Rs 6000 to 7000 ( )

d)Rs 7000 and above ( )

7.Marital Status

a)Married ( )

b)Unmarried ( )

SECTION-B

CLINICAL VARIABLES

1.Duration of the illness

a) Less than one year ( )

b)1-3 years ( )

c)>3 years ( )

2. Number of hospitalization for Cancer

a) Nil ( )

b)1-3 times ( )

c)3-6 times ( )

d)more than 6 times ( )

3.Treatment

a)Medications ( )

b)stem cell therapy ( )

c) Radiation therapy ( )

d) palliative therapy ( )

4.History of Comorbid condition

a)Hypertension ( )

b)Diabetes mellitus ( )

c)Tuberculosis ( )

d)others ( )

5. Family history of Cancer

a) Yes ( )

b) No ( )

6. Number of Chemotherapy cycle

a) 1-2 cycles ( )

b) 3-4 cycles ( )

c) 5-6 cycles ( )

7. Techniques used for sleeping usually at home

a) Music ( )

b) Reading ( )

c) Meditation ( )

d) Any other, Specify ( )

8. Factors influencing sleeping

a) Pain ( )

b) Light ( )

c) Noise ( )

d) stress ( )

e) others, Specify ( )

நேர்முகக்காணல் படிவம்

பகுதி அ

மக்கள்தொகை மாறிகள்

1. வயது

    அ. 26-35 வயது

    ஆ. 36-45 வயது

    இ. 46-55 வயது

    ஈ. 55-60 வயது

2. பாலினம்

    அ. ஆண்

    ஆ. பெண்

3. மதம்

    அ. இந்து

    ஆ. கிறிஸ்துவம்

    இ. முஸ்லிம்

4. கல்வித்தகுதி

அ. முறை சாரா கல்வி

ஆ. முதன்மை கல்வி

இ. இரண்டாம் நிலை கல்வி

ஈ. பட்டதாரி

5. வேலை

அ. வேலையற்ற நிலை

ஆ. விவசாயம்

இ. தனியார்

ஈ. அரசு வேலை

6. குடும்ப வருமானம்

அ. ரூ. ₹5000

ஆ. ரூ.5000 – 6000

இ. ரூ. 6000 – 7000

ஈ. ரூ, 7000

7. திருமண நிலை

அ. திருமணம் ஆனவர்

ஆ. திருமணம் ஆகாதவர்

பகுதி – ஆ

மருத்துவ மாறிகள்

1. நோயின் காலம்

   அ. ஒரு வருடத்திற்கும் குறைவாக

   ஆ. 1-3 ஆண்டுகள்

   இ. 3 ஆண்டுகளுக்கும் அதிகமாக

2. புற்றுநோய்க்கான மருத்துவமனையில் சேர்க்கப்பட்ட எண்ணிக்கை

   அ. இதுவரை இல்லை

   ஆ. 1- 3 முறைகள்

   இ. 3-6 முறைகள்

   ஈ. 6 முறைக்கு மேல்

3. சிகிச்சை முறைகள்

   அ. கீமோதெரபி மருந்துகள்

   ஆ. ஸ்டெம் செம்

   இ. கதிர் வீச்சு

   ஈ. நோய் தடுப்பு சிகிச்சை

4. இணைநோயின் வரலாறு

   அ. இரத்த கொதிப்பு

   ஆ. நீரிழிவு நோய்

   இ. காச நோய்

   ஈ. மற்றவைகள்

5. புற்றுநோயின் குடும்ப வரலாறு

அ. ஆம்

ஆ. இல்லை

6. கீமோதெரபி சிகிச்சையின் எண்ணிகை

அ. 1-2 சுழற்சி

ஆ. 3-4 சுழற்சி

இ. 5-6 சுழற்சி

ஈ. 6 சுழற்சிக்கு மேல்

7. பொதுவாக வீட்டில் தூங்குவதற்கு பயன்படுத்தப்படும் நுட்பங்கள்

அ. இசை கேட்டல்

ஆ. புத்தகம் படித்தல்

இ. அமைதியான சூழலில் இருத்தல்

ஈ. வேறு ஏதாவது

PART-II

The Groningen Sleep Quality Score

Please put a **The Groningen Sleep Quality Score**

Please put tick the answer is yes an☒ if the answer is no.

SL.NO	QUESTION	YES	NO
1.	I had a deep sleep last night		
2.	I feel that I slept poorly last night		
3.	It took me more than half an hour to fall a sleep last night		
4.	I woke up several times last night		
5.	I felt tired after waking up this morning		
6.	I feel that I didn't get enough sleep last night		
7.	I got up in the middle of the night		
8.	I felt rested after waking up this morning		
9.	I feel that I only had a couple of hours' sleep last night		
10.	I feel that I slept well last night		
11.	I didn't sleep a wink last night		
12.	I didn't have trouble falling asleep last night		
13.	After I woke up last night, I had trouble falling asleep again		
14.	I tossed and turned all night last night		
15.	I didn't get more than 5 hours' sleep last night		
	SCORE		

SCORE INTERPRETATION:

Scoring : The first question out of the fifteen does not count or the total score.

One point :if answer is ‘TRUE’ forquestions2,3,4,5,6,7,9,11, 13, 14,15

One point :if answer is ‘FALSE’ for questions8,10,12.

Interpretation:

The Total score: 14

Score 0to5 = Undisturbed or Unrestricted Sleep Last Night

Score 6-7 = Disturbed Sleep Last Night

Score 8 -14 = Indicating Poor Sleep the Night Before

கேள்வித்தாள்

வழிமுறைகள்

தயவு செய்து கவனமாக படிக்கவும் பிறகு குறிகள் இட்டு பின்வரும் அறிக்கைகள் உண்மையா (✓) அல்லது பொய்யா (✗) என்பதை குறிக்கவும்.

வ எண்	கேள்வி	ஆம் ✓	இல்லை ✗
1	நான் நேற்று இரவு ஆழ்ந்த தூக்கத்திற்குள் இருந்தேன்		
2	நேற்று இரவு நான் நன்றாக தூங்காதது போல் உணர்கிறேன்.		
3	நேற்று இரவு தூக்கம் வருவதற்கு அரைமணி நேரம் ஆகியது		
4	நான் நேற்று இரவு பலமுறை விழித்தேன்.		
5	நான் இன்றி காலையில் எழுகையில் களைப்பாக இருந்தேன்.		
6	எனக்கு நேற்று இரவு போதுமான தூக்கம் இல்லை		
7	நான் நடு இரவில் விழித்தேன்.		
8	நான் காலையில் எழுந்ததும் புத்துணர்வுடன் இருப்பதை உணர்ந்தேன்.		
9	நான் நேற்றி இரவு இரண்டு மணிநேரம் மட்டுமே தூங்கினேன்		
10	நான் நேற்று இரவு நன்றாக தூங்கினேன்.		
11	நான் நேற்று இரவு ஒரு கண்சிமிட்டும் நேரம் கூட தூங்கவில்லை.		
12	நான் நேற்று இரவு தூங்கும் போது தொந்தரவு ஒன்றுமில்லை		
13	நான்நேற்று இரவுவிழித்தபிறகுஇ நான் மீண்டும் தூங்குவது கடினமாக இருந்தது.		
14	நான் நேற்று இரவு முழுதும் புரண்டவாறு படுத்திருந்தேன்.		
15	எனக்கு நேற்று இரவு 5 மணிநேரத்திற்கு மேல் தூக்கம் வரவில்லை.		

APPENDIX-X

WARM FOOTBATH THERAPY

Introduction:

Alternative and complimentary therapies are commonly used treatment modalities in present days as it does not have side effects and also it is effective. These are group of therapies and practices used in place of increasing comfort or relaxation, maintaining, improving, or restoring health and harmony of the body, mind, and spirit, improving coping mechanisms, reducing stress, relieving pain, improving sleep and increasing the clients intense feeling of wellness.

Definition:

It is a form of treatment where a limb (feet) or the entire body is immersed in hot (but not boiling) water.

Purposes of warm footbath:

- By soaking the feet in the warm water, the congested blood in the body is brought to the dilated vessels in the feet and lower legs.

  Taking such a footbath will stimulate blood circulate, re-energize self, reduce inflammation, keep self relaxed.
- It is a local moist heat application.
- Non invasive and easy to apply at home
- Warm footbath relieves fatigue and insomnia problems of patients undergoing chemotherapy.

Mechanism of action:

- Hot water foot bath provides a good sleep, because it relaxes the body and mind. It works by slightly raising the body temperature and after 15 minutes, it starts to drop slowly. This can promote sleep indirectly. Gradual drop of body temperature makes us feel drowsy and therefore we feel more prepared for sleep. A warm footbath also diverts some blood from the head to lower parts of body, reduces brain activity and mimics the pre-sleep state.
- The theory behind warm footbath therapy is that the hot water causes vasodilation of the blood flow in the limb or body. Followed by vitals and blood pressure are lowers. The hormonal changes (serotonin secretion) occurs after doing the warm footbath, because nerve endings are stimulated there by autonomic nerve response to the medulla oblongata that lowers the vitals.
- Thermoregulation exhibits powerful interaction with sleep.

Health Benefits of warm footbath

- Proper blood circulation
- Cleanse the body
- Relieving pain
- Relaxation and stress reduction

Articles:

1. Steel basin
2. Jug with hot water
3. Lotion thermometer
4. Covering sheet
5. Towel

Procedure :

- Explained the procedure to the patient and informed consent was obtained.
- The patient was asked to sit in a comfortable position and all the materials were assembled near the patient.
- The basin was filled with hot water. By using lotion thermometer the temperature of the water was checked. The temperature of the water was maintained between 40-44^{o}.the patient allowing them to touch the water by using their palms.
- Then the patient was instructed to immerse the foot till the ankles. The patient was covered with a sheet and warm foot bath was given for 15 minutes for five consecutive days.
- The temperature of the water was checked in between the procedure. Hot water was added when the water cools. The patient was instructed to dry the legs after the procedure.

APPENDIX-XI

CERTIFICATE OF PLAGIARISM

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iThenticate Plagiarism Detection Software

CERTIFICATE

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CERTIFIATE

This is to certify that this dissertation work titled **"A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF WARM FOOTBATH ON QUALITY OF SLEEP AMONG PATIENTS WITH CANCER IN SELECTED HOSPITALS AT TRICHY DIATRICT"**. Of the candidate **MRS.GAYATHRI.M** with registration Number 301712351 for the award of **MASTER OF SCIENCE IN NURSING** in the branch of **Medical Surgical Nursing**. I personally verified the iThenticate Plagiarism Detection Software for the purpose of plagiarism Check. I found that the uploaded thesis file contains from introduction to conclusion pages and result shows Percentage of plagiarism in the dissertation.

Name and Signature of Guide

Name and Signature of Principal

Photo Gallery

APPENDIX-XXII

PHOTO GALLERY