"EFFECTIVENESS OF EPSOM SALT HOT WATER APPLICATION ON KNEE JOINT PAIN AMONG ELDERLY PEOPLE AT SELECTED COMMUNITY AREAS, KOLAR.''

By

Miss. BINDUSHREE B

Dissertation submitted to the

Rajiv Gandhi University of health sciences, Bangalore, Karnataka.

In partial fulfillment of the requirement for the degree of

Master of Science in Nursing

In

COMMUNITY HEALTH NURSING

Under the guidance of

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2025

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation/thesis entitled **"Effectiveness of Epsom Salt hot water Application on Knee Joint Pain Among Elderly people at Selected Community Areas, Kolar''** is a bonafide and genuine research work carried out by me under the guidance of **Dr. Vani R** Associate Professor Dept. of Community Health Nursing**,** Sri Devaraj Urs College of Nursing Tamaka, Kolar-563103.

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ACKNOWLEDGEMENT

At the outset, I express my heartfelt gratitude to Paramatma/ Supreme Lord, the source of wisdom and strength, for His constant guidance, resilience, and blessings throughout my way.

My sincere authentic thanks and gratitude to my guide **Dr. Vani R** Associate Professor, Dept. of Community Health Nursing for her keen interest, guidance, valuable suggestions and co-operation, constant interaction, for boosting my spirits through all ups and downs, which has made this study a fruitful and enriching learning experience throughout this study.

I immensely thank to **Dr. G. Vijayalakshmi** Principal and **Dr. Lavanya Subhashini** , Vice Principal, Sri Devaraj Urs College of Nursing, Tamaka, Kolar for giving vital suggestions, learning atmosphere, timely advice, andconstant support to complete this study.

I express my sincere thanks to HOD & Prof. **Dr. Malathi K. V.** Department of community health Nursing, Sri Devaraj Urs College of Nursing for the motivation, love, concern, support and guidance and valuable suggestions during my study

My heartfelt thanks to **All HODs and All teaching faculty** of Sri Devaraj Urs College of Nursing for their guidance, suggestions and support throughout this dissertation

I express my sincere gratitude to **Mr. Ravi Shankar**, Assistant Professor, Department of statistics, Sri Devaraj Urs Medical College, Kolar for his expert guidance, valuable suggestions and assistance in the statistical analysis and interpretation of the data.

I am pleased to convey my profound thanks to **Medical Officer,** and staffs Devarayasamudra Primary Health Centre for great support and providing permission

to conduct study.

I am very much obliged to all my Subject Experts who have contributed their valuable suggestions, during the translation of content and tool.

A profound and deep sense of gratitude to the **librarians** of Sri Devaraj Urs college of Nursing, for their co-operation.

I owe in depth of gratitude to all **participants** who have enthusiastically been a part ofthe study and the **authorities** for giving me permission to conduct the study and without their cooperation the study would not have been possible.

"Grateful to **Myself** for staying committed to learning and embracing each step of this research journey with new knowledge."

My deepest and sincere gratitude to my Parents **Mr. Bisappa D** my father who had my whole in every situation and my mother **Mrs. Rajashree** , and my bother **Mr. Naveen Kumar R B** , who encourage me to take Master, my little sister **Miss. Sindhu R B** and family members for their love, affection, constant support, and encouragement throughout my study and for being at my side in time of difficulties.

My heartfelt thanks to all My **well-wishers & Friends** for there and encouragement throughout my study.

No words can express my appreciation and indebtedness to many of them whose names have not been mentioned here but have contributed unselfishly and most willingly in the successful completion of this Research project.

Thank you all !!

Date: **With a Great full Heart**

Place: Tamaka, Kolar**.** **(Miss. BINDUSHREE B)**

LIST OF ABBREVIATIONS

Sl. No	ABBREVIATIONS
1.	**df:** Degree of Freedom
2.	**DRS:** Devarayasamudra
3.	**f:** Frequency
4.	**X:** Intervention
5.	**MD:** Mean difference
6.	**NS**: Not significant
7.	**OA:** Osteoarthritis
8.	**%:** Percentage
9.	**O_1:** Pretest
10.	**O_2:** Post test
11.	**R:** Research group
12.	**H_1:** Research hypothesis one
13.	**H_2:** Research hypothesis two
14.	**SD**: Standard deviation
15.	**SS**: Statistically significant

ABSTRACT

Title:- "Effectiveness of Epsom salt Hot water Application on Knee joint Pain Among Elderly people at Selected Community Areas, Kolar''.

Background: Musculoskeletal pain, particularly knee joint discomfort, is a predominant health issue among the elderly, affecting their mobility and quality of life. With the increasing elderly population, effective, affordable, and easily accessible interventions are essential. This study evaluates the effectiveness of Epsom salt hot water application in reducing knee joint pain among elderly individuals.

Methods: A true experimental research design was employed with 90 participants, divided equally into experimental and control groups (n=45 each) through simple random sampling. The experimental group received Epsom salt hot water application for 15 consecutive days, while the control group received no such intervention. Pain levels were assessed pre- and post-intervention using the standardized Oxford Knee Score scale and socio-demographic data was collected. Statistical analysis included descriptive and inferential tests.

Results: In the experimental group, post-intervention data revealed a significant reduction in knee joint pain 78% of participants reported satisfactory pain levels, and no cases of moderate or severe pain remained. In contrast, the control group showed no such improvement, with 24% reporting severe pain post-test. A significant difference in pain reduction was noted between the groups (MD=10.7, t=7.610, p<0.001). Within-group comparisons also demonstrated a statistically significant improvement in the experimental group (t=11.346, p<0.05).

Conclusion: Epsom salt hot water application proved to be an effective, low-cost, and self-manageable intervention for reducing knee joint pain in the elderly. It holds promise as a non-pharmacological strategy to enhance comfort and quality of life among older adults. Further studies across diverse settings and age groups are recommended to generalize the findings.

Key words: Epsom salt , Hot water, Knee joint pain, Elderly, Community, osteoarthritis.

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INTRODUCTION

CHAPTER-I

INTRODUCTION

Title:- "Effectiveness of Epsom salt Hot water Application on Knee joint pain among Elderly people at selected Community Areas, Kolar''.

Aging is a natural process of living organism. Commonest health problem among elderly population is musculoskeletal pain based on the health surveys undertaken in both developed and developing counties. Knee and back pain are the most frequent complaints among the elderly people; knee joint pain is more common among elderly rather than back pain.[1]

Arthritis is creating a serious health crisis that affects millions of people of all ages , gender , races and ethnic groups and it is growing . it is one of the leading causes of disability , arthritis is progressive joint disease characterized by joint inflammation and a reparative bone response. Arthritis can be seriously limiting people's mobility- it prevents elderly from walking, difficult to climbing stairs, not able to perform activities of daily living live to its fullest. Arthritis steals people's quality of life , it is a large and very complex family of diseases.[2]

Osteoarthritis is the most common form of arthritis in adults, characterized by chronic pain and loss of mobility. It mostly occurs after age 40 years and prevalence increases steeply with age. The world health organization has designated 2021-2030 the 'Decade of health ageing'. Which highlights the need to address diseases such as osteoarthritis that strongly affect functional ability and quality and quality of life. OA can co-exist with, and negatively impact , other chronic conditions. The estimate the burden of hand , hip, knee and other sites of OA across geographies, age , sex and time, with forecasts the prevalence to 2050.[3]

Osteoarthritis is a condition of cartilage which leads to degradation of joint and inflammation of the synovial membrane, it acts as a cushion-like structure present in between the joints and bones and prevent the rubbing of each other. The prevalence rate increases with aging process. Nearly 45% and 70% of the women have the symptoms and radiological evidence of pathology. It is one of the major causes of mobility impairment among female.[4]

The signs and symptoms of osteoarthritis includes stiffness, crepitus, swelling bony tenderness, and limp. Osteoarthritis affects an individual's day-to-day activities and quality of life. The second most common rheumatic problem is osteoarthritis and frequent knee disease with the prevalence rate of 22-39% in India.[5]

Several key prevention strategies have been proposed to prevent osteoarthritis and control the disease progression. In particular, reducing overuse of joint and promoting healthy lifestyles play an important role.[6]

A pre-experimental pre-test posttest design was used to assess the effectiveness of hot water compress with Epsom salt among elderly women with knee joint pain residing at selected area, Choolai in Chennai. Among 100 sample selected by using purposive sampling technique, the result of the study revealed that pre-test mean and standard deviation score of knee joint pain was 9.08±2.61 whereas in the post-test the mean and standard deviation score of knee joint pain was 18.49±2.53. the calculated paired t value is t=0.00* . it was found to be statistically significant at $p<0.005$ level. Hence the study reviled that Epsom salt hot water application is effective in the reducing of knee joint pain among the elderly women.[7]

A systematic review and meta- analysis were conducted of cohort studies for risk Factors for the onset of knee pain. 6554 papers were identified and after screening 46 studies were included, the main factors associated with onset of knee pain were being

overweight(pooled or 1.98, 95% confidence intervals(CI) 1.57-2.20), obesity (pooled or 2.66 95% CI 2.15-3.28), female gender (pooled or 1.68, 95% (CI) 1.37-2.07), previous knee injury (pooled or 2.8, 95% (CI) 1.91-4.19). hand OA(pooled or 1.30, 95% (CI) 0.90-1.87) was found to be non-significant . smoking was found not to be a statistically significant risk or protective factor (pooled or 0.92, 95% (CI) 0.83-1.01).PAFA indicated that in patients with new onset of knee pain 5.1% of cases were due to previous knee injury and 24.65 related to being overweight or obsess.[8]

Management should be comprehensive and individualized. The management plan should be reviewed regularly which is based on non-pharmacological and pharmacological measures. People residing in rural area prefer non-pharmacological treatment plan which include exercise, hot application, cold application, oil massage, yoga. Electrical heat application, and use of naturopathy. Sever complementary therapies may play an important role in the management of joint pain. Epsom salt is a natural mineral. Magnesium and sulphates are absorbed through the skin and into the body, which have an effect to reduce knee pain. The study aims to compare Epsom salt, hot water , or both for knee joint relied on prior research.[9]

Epsom salt is a chemical compound made up of magnesium, sulfur and oxygen which when placed in water; it breaks into magnesium and sulfate. When Epsom salt is soaked both magnesium and sulfate get absorbed into the body through the skin. It may help to relax muscles, reduce swelling and pain from arthritis and relieve pain from fibromyalgia and various cases and it is considered as a very useful home remedy for reducing joint pain among old age people. Natural relief from joint pain can be achieved by staying active, managing weight, and making changes o the diet are a few natural ways to ease arthritis pain. Some alternative therapies could also help by improving flexibility or relieving stiffness and swelling.[10]

NEED FOR THE STUDY

Joint diseases affect millions of people throughout the world, causing pain and disability with great impact on individuals and on society as a whole. Osteoarthritis is the most common joint disease in the near future and is projected to rank second for women and fourth for men in the developed countries in terms of years lived with disability. Men are more often affected than women before the age of 50. Women are affected twice as often as often as men after the age of 50.[11]

Key facts as per WHO,

- In 2019, about 528 million people worldwide were living with osteoarthritis an increase of 113% since 1990.
- About 73% of people living with osteoarthritis are older than 55 years, and 60% are female.
- With a prevalence of 365 million, the knee is the most frequently affected joint, followed by the hip and the hand. 344 million people living with osteoarthritis experience osteoarthritis.
- With ageing populations and increasing rates of obesity and injury, the prevalence of osteoarthritis is expected to continue to increase globally.[12]

Key facts as Institute for Health Metrics and Evaluation (IHME)

Global Prevalence and Trends

2020 Prevalence: Approximately 595 million people worldwide were living with osteoarthritis in 2020, marking a 132% increase from 1990

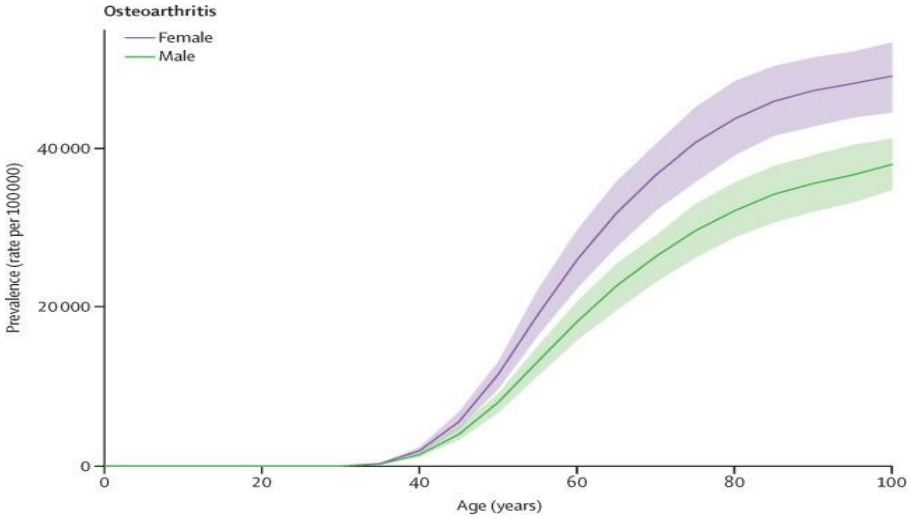
Projected 2050 Prevalence: The number of individuals affected by osteoarthritis is expected to approach 1 billion by 2050.

Gender and Age Distribution: Were 61% women are affected to osteoarthritis than the men and it significantly increases age of 70 years and above.

Joint-Specific Prevalence: Here it was projected increasing of cases by 2050 . were 74.9% of knee osteoarthritis and 48.6% Hand Osteoarthritis, 78.6% Hip Osteoarthritis.

Risk Factors: High body mass index (BMI) is a significant risk factor, contributing to 20.4% of osteoarthritis cases globally.

Ageing Population: The global increase in life expectancy contributes to the rising prevalence of osteoarthritis.[13]



FIG(1):- Indicates global prevalence of osteoarthritis with age among male and female.[03]

According to world health organization (WHO), 18.0% of women and 9.65% of men over the age of years have symptomatic osteoarthritis which leads knee pain in worldwide. They have limitation in movement around 80% of 25% of them cannot perform their major daily day-o-day activities of life.[13]

As prevalence of knee OA is leading cause of pain and disability in most countries worldwide, in modern science, treatment of osteoarthritis of knee joint mainly includes steroids, calcium supplement and pain management (NSAID). Long term use

of steroids and anti-inflammatory drugs has its side effects like gastritis Etc. Last option is knee replacement which is a major surgery and too costly. Total knee replacement will have a growing impact on health care and public health system in the future. It is necessary to work on cost effective and easily available, effective.[12]

Total knee replacement will have a growing impact on health care and public health systems in the future. It is necessary to work on cost effective and easily available effective treatment in OA of knee joint.[14]

Epsom salt is a magnesium sulfate mineral, has been found to alleviate pain. Additionally, soaking in an Epsom salt and compression of hot water application with Epsom salt helps to pull toxins from the body , which improves the healing process of inflamed joints. Many old age people are suffering from knee joint pain, which effects their motion and all day-to-day life activities. Epsom salt contains many beneficiary elements that helps to reduce joint pain among old age people by using hot water compressions on knee joint pain.[15]

The topical application and therapy are best suitable for elderly. That's why Epsom salt application can be chosen as remedy for the elderly patients as it is easily available at home and does not cause any side effects to the person. We are using Epsom salt with hot water application because we to assess its effectiveness with hot water which is expected to be as higher as compared to be used separately.[16]

During the preliminary survey at the community area the researcher found that, majority of elderly were expressed of joint pain, difficulty in walking and sitting ,considering the high prevalence of knee joint pain among older adult's investigator planned to provide a comprehensive intervention to reduce knee joint pain using Epsom salt hot water application among elderly population at selected community areas , Kolar.

CHAPTER-II

OBJECTIVES

CHAPTER-II

OBJECTIVES

This chapter deals with the statement of the problem, objectives of the study, hypothesis, operational definitions, and limitation of the study and conceptual framework, which provides a frame of reference.

The statement of the problem and objectives of this study are as follows.

STATEMENT OF THE PROBLEM

"EFFECTIVENESS OF EPSOM SALT HOT WATER APPLICATION ON KNEE JOINT PAIN AMONG ELDERLY PEOPLE AT SELECTED COMMUNITY AREAS, KOLAR''.

OBJECTIVES OF THE STUDY

1. To assess the level of Knee joint pain among Elderly in both the Experimental and Control group using standardized Oxford Knee score scale.
2. To determine the Effectiveness of Epsom salt hot water application on Knee joint pain among Elderly by comparing pretest and posttest scores of Experimental and Control groups.
3. To find the association between the levels of Knee joint pain and selected Socio-demographic variables.

RESEARCH HYPOTHESES

H_1: There will be a significant difference on Knee joint pain scores among Elderly people before and after Epsom salt hot water application.

H_2: There will be a significant association between level of Knee joint pain and selected socio-demographic variables**.**

ASSUMPTIONS:

1. Patients with Knee osteoarthritis have pain, swelling, inflammation.
2. Epsom salt hot water application may reduce Knee joint pain and inflammation.

DELIMITATION:

1. The study is limited to Elderly with Knee joint pain.
2. The study is limited to only one setting.

OPERATIONAL DEFINITIONS:

EFFECTIVENESS:

In this study, it Refers to significant improvements in the relieving Knee joint pain after the application of Epsom salt hot water application among Elderly.

ELDERLY PEOPLE:

It refers to an individual, in the age group of 60 years and above residing in selected Community areas, Kolar.

KNEE JOINT PAIN:

It is an inflammatory joint pain, perceived and expressed by the Elderly, as swelling, stiffness, congestion as a result of deterioration of the involved Knee joint which will be measured by standardized Oxford Knee score scale.

EPSOM SALT HOT WATER APPLICATION:

It is a local application of moist heat by means of a small cotton cloth prepared by adding 30 grams of Epsom salt to 150 ml of Hot water.
(The temperature of the Hot water was 110-degree Fahrenheit). It is applied to area for about 15 minutes a day for 15 days.

PROJECTED OUTCOME

This study will help to understand that the Effectiveness of Epsom salt hot water application on Knee joint pain among the Elderly people.

CONCEPTUAL FRAMEWORK

Conceptual framework deals with abstractions that are assembled by virtue of their relevant to a common theme. Conceptualization is a process of forming ideas, which is utilized and forms conceptual framework for development of research design. It helps the researcher by giving direction to go about entire research process.

The present study aimed to assess the "Effectiveness of Epsom salt hot water Application on knee joint pain Among elderly people at selected community areas, Kolar.''

The framework of the present study was developed by investigator based on General System and adaption theory.

Theory which consists of 4 major components as **Input, Throughput, Output, and Feedback.**

General system theory was first introduced by Ludwig Von Bertanffy in 1968. He defines a system as an organized whole unit that produces an effect or product when interdepends component parts interact with environment. All living systems are open system, which promote the exchange matter, energy and information with other system(subsystem).and environment(supra-system),the exchange within open system, between the system, the subsystem and supra-system is continuous. The dynamic balance within and between the system, the subsystem and supra-system helps to creates and maintain internal stability. The change in one part of the system creates change in other parts.

INPUT: Input refers to the information, energy or matter, which enters the system.

In this study knee joint pain among elders is a system and has input with the system itself (subsystem) which is acquired from the environment (supra system).

Thes input includes Elderly population variables are like Age, Gender, Qualification,

religion, marital status ,socio Economical status type of family diet pattern, occupation ,Duration of knee pain , history of comorbid illness which may influence the Elders level of knee joint pain.

THROUGHPUT: Throughput refers to the action needed to accomplish the desired task to achieve the desired output.

In this study it refers to the standardized Oxford knee score scale Questionnaire and its administration to assess the level of knee joint pain among elderly. And on intervention of Epsom salt hot water application on knee joint pain among elderly people who are in experimental group per the period of 15days.

OUTPUT: Output refers to the end result or product of the system.

In this study it refers to the result outcome of care received by the Elders on knee joint pain before and after the study interventions showing their pain level grading as Poor(score 0 to 19), Moderate(Score 20 to 29), Good (Score 30 to 39), Excellent (Score 40 to 48) in relation to assess level of knee joint pain. Those who are in experimental group interventions of Epsom salt hot water allocation are given for period of 15 days and control group will be on routine follow up.

FEED BACK:

Feedback is the process whereby the outcome of the system is redirected to input and throughout if level of knee joint pain is not reduced is remain same. The system input and throughput have to be revaluated which is not included in the present study.

SUMMARY

This chapter has outlined on the statement of the problem, objectives, operational definitions, hypothesis, assumptions, delimitation conceptual framework and the projected outcome of the study.

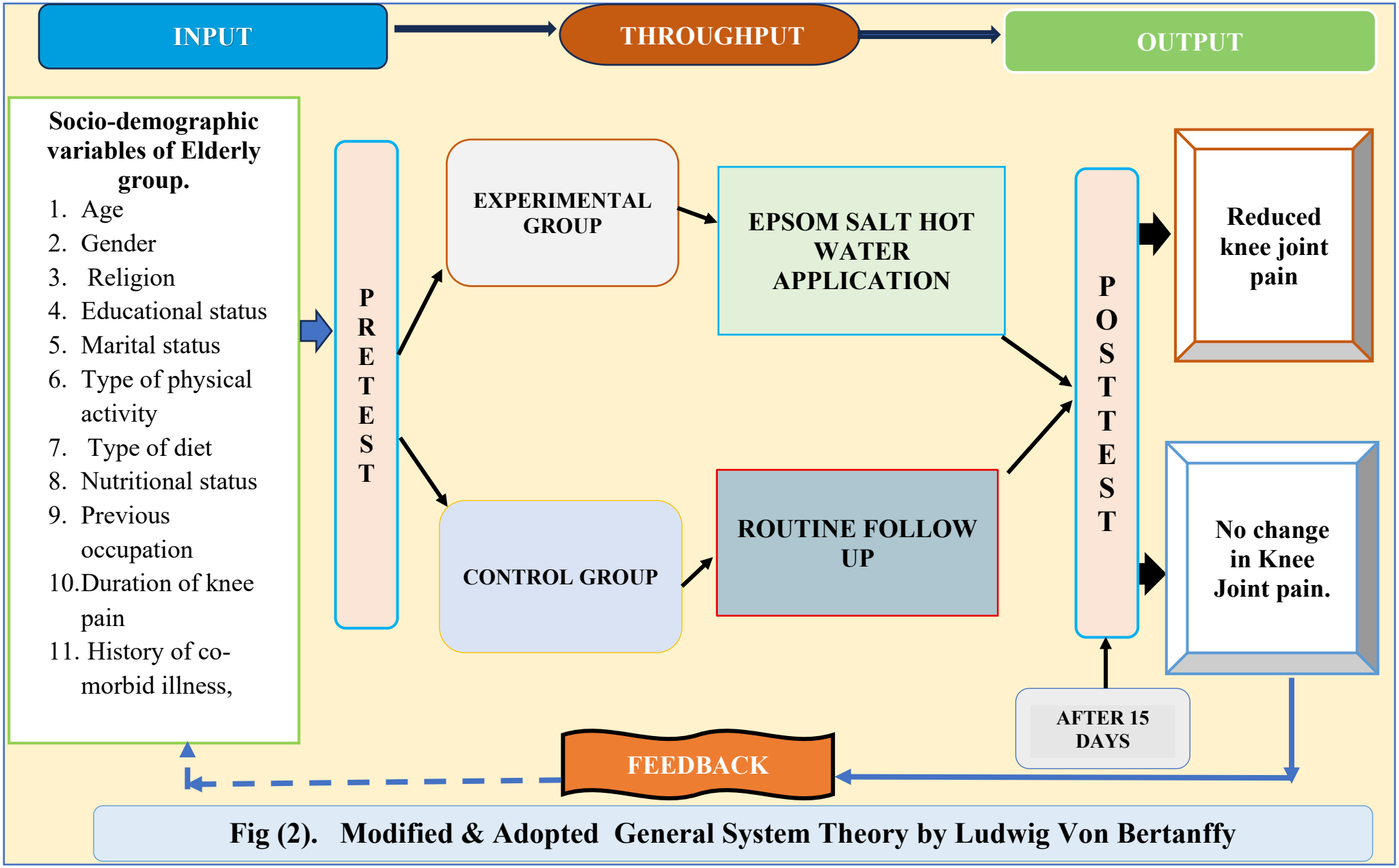


Fig (2). Modified & Adopted General System Theory by Ludwig Von Bertanffy

CHAPTER-III

REVIEW OF LITERATUTE

CHAPTER-III
REVIEW OF LITERATUTE

Review of literature makes the researcher familiar with the existing studies and provides information which helps to focus on a particular problem and lays a foundation upon which to base a new knowledge.

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

The review of literature for the present study is categorized under the following heading.

I. Studies related to Knee joint pain .

II. Studies related to Epsom Salt hot water application.

I. Literature related to Knee Joint Pain

1. A cross- sectional study titled “A Cross-Sectional Study on the Clinical Profile of Patients with Medical Compartment Knee Osteoarthritis at a Tertiary Care Orthopedic Center in South India” was conducted at Sanjay Gandhi Institute of Trauma and Orthopedics, Bengaluru, Karnataka. The study aimed to analyze the clinical features and management outcomes of patients with medical compartment knee osteoarthritis. A total of 126 patients diagnosed with medical compartment knee osteoarthritis were included in the study. The sampling technique employed was purposive sampling, selecting patients who were planned for proximal fibular osteotomy. The American College of Rheumatology criteria were used for diagnosing knee osteoarthritis, and the Kellgren and Lawrence grading system was utilized to assess the severity of the disease. The study found that the majority of patients were in the 51 to 60 years age group, with a female preponderance. The left knee was more commonly affected, and stage 2 osteoarthritis was the most

prevalent. The study concluded that understanding the clinical profile of patients with medical compartment knee osteoarthritis is crucial for effective management and treatment planning.[17]

2. A cross-sectional polit study was conducted at JSS College of Physiotherapy in Mysuru, Karnataka, to assess the correlation between Kinesio phobia and pain in individuals with knee osteoarthritis. The study included 60 participants diagnosed with knee osteoarthritis. Kinesio phobia was assessed using the Tampa Scale for Kinesio phobia, and pain intensity was measured using the Visual Analog Scale. The study found a significant positive correlation between Kinesio phobia and pain intensity, indicating that individuals with higher levels of Kinesio phobia experienced more pain. The study concluded that addressing Kinesio phobia in the management of knee osteoarthritis may help in reducing pain and improving functional outcomes.[18]
3. A cross-sectional study titled " Prevalence of osteoarthritis know among elderly in rural field practice area of Raja Rajeswari Medical College, Bengaluru, India" was conducted in chunchunnakuppe village, South Bangalore, from June to July 2023. The study involved 150 elderly participants selected through purposive sampling. Clinical examinations were performed using the American College of Rheumatology (ACR) criteria, and socio-demographic data were collected. the results revealed that 42% of participants had knee osteoarthritis (OA), with significant associations found between OA and factors such as female gender, history of knee injury, family history of knee pain, chronic illness, physical activity levels, BMI, and smoking status ($p<0.05$). the study concluded that knee OA was prevalent in the area, and modifiable factors like physical activity, smoking, and BMI were significantly associated with its occurrence.[19]

4. A community- based cross-sectional study titled " exploring the Burden of Knee Osteoarthritis in Rural South India: Community Prevalence, Risk Factors, and Functional Assessment Among Adults Aged 40 and Above" was conducted in a rural area of South India in 2024. The study involved 500 participants aged 40 and above, selected through stratified random sampling. Data were collected using a validated semi- structured questionnaire, including the Western Ontario and McMaster Universities Arthritis Index (WOMAC) scale and Visual Analog Scale (VAS) for functional assessment. The results showed a community prevalence of knee OA of 34.6%, with significant predictors including obesity, diabetes, hypertension, and Indian-style toilet use. The mean WOMAC score was 57.38, indicating severe functional impairment. The study concluded that knee OA is highly prevalent in the community, with significant risk factors and severe functional impaired, underscoring the need for community interventions in lifestyle modification and chronic disease management.[20]
5. A cross-sectional study was conducted at a tertiary care hospital in India to estimate the proportion and ascertain risk factors for knee osteoarthritis among women aged above 45 years. The study included 380 women who attended the orthopedic outpatient department over 18 months. Knee osteoarthritis was diagnosed using the American College of Rheumatology clinic radiological criteria. A predesigned case record form was used to collect information on socio-demographic profiles and other risk factors. The study found that the overall proportion of knee osteoarthritis was 69.2%. logistic regression analysis revealed that diabetes mellitus, hypertension, menopause, and increased body mass index were significant risk factors for knee osteoarthritis. The study concluded that early screening for knee osteoarthritis in individuals with these risk factors could help prevent disabilities.[21]

6. A systematic review was conducted to explore gender differences in the epidemiology and clinical aspects of knee osteoarthritis (OA) in Australia. The review included 20 studies published between 2017 and 2022 that provided data on the prevalence, risk factors, and clinical presentation of knee OA in men and women. A total of 6,800 particularly those aged 60 and above. The prevalence of knee OA in women ranged from 42% to 68%, while in men, it ranged from 32% to 55%. Key risk factors identified included higher BMI, physical inactivity, and previous knee injury. The study concluded that gender differences in knee OA are significant in Australia and should be considered in the management and prevention strategies for the condition.[22]
7. A systemic review published in 2024 examined sex differences in OA prevalence, risk factors, pain severity, functional outcomes, and response to therapeutics. The review included 343 studies and found that women account for 60% of people with OA, with a greater difference after age 40. Women exhibited higher pain severity, greater limitations in physical function, and greater use of analgesic medications than men. However, women had less use of arthroplasty are poorer prognosis after surgical interventions. The concluded that recognizing sex differences in OA manifestation and management could guide tailoring of sex-specific treatment protocols.[23]
8. A systematic review and meta-analysis published in 2023 investigated sex-specific knee biomechanics in individuals with and without knee osteoarthritis (OA). The review included 18 studies with 691 participants (308 males and 383 females with OA; 740 males and 995 females without OA.) using a random-effects meta-analysis, the study found that females with OA had significantly lower first peak knee adduction moment and peak knee adduction compared to males, while healthy

females had lower peak knee flexion moment than healthy males. These sex-dependent alteration in knee biomechanics were more pronounced in individuals with OA. The study concluded that gender-specific differences in knee biomechanics exit and are influenced by the presence of OA, suggesting the need for tailored interventions.[24]

9. A systematic review was conducted to investigate gender differences in the epidemiology and clinical aspects of knee osteoarthritis (OA) in the United States. The review included 25 studies published between 2015 and 2020 that provided data on the prevalence, risk factors, and clinical presentation of knee OA in men and women. A total of 8,200 participants were included across the studies. The review found that knee OA was significantly more prevalent in women, particularly postmenopausal women. The prevalence of knee OA in women ranged from 40% to 65%, while in men, it ranged from 30% to 50%. Key risk factors identified included higher body mass index (BMI), hypertension, diabetes mellitus, and osteoporosis. The study concluded that gender differences, diabetes mellitus, and osteoporosis. The study concluded that gender differences in knee OA are significant and should be considered in the management and prevention strategies for condition.[25]
10. A systematic review was conducted to examine gender differences in the epidemiology and clinical features of knee osteoarthritis (OA) in Europe. The review included 22 studies published between 2016 and 2021 that provided data on the prevalence, risk factors, and clinical presentation of knee OA in men and women. A total of 7,500 participants were included across the studies. The review found that knee OA was more prevalent in women, especially those aged 55 and above. The prevalence of knee OA in women ranged from 38% to 60% while in

men, it ranged from 28% to 48%. Significant risk factors included increased BMI, physical inactivity, and previous knee injury. The study concluded that gender differences in knee OA are evident in Europe and should be considered in the management and prevention strategies for the condition.[26]

11. A retrospective study titled " Comparison of Radiological Classification in Osteoarthritis Knee" was conducted at Sri Devaraj Urs Academy of Higher Education A=and Research, Karnataka, in 2021 with the objective of comparing and correlating various radiological grading systems used in diagnosing knee osteoarthritis (OA). The study included 44 patients selected through convenience sampling from the hospital's orthopedic outpatient department; all clinically diagnosed with knee OA. The radiological tools used for evaluation were the Kellgren-Lawrence (KL), Ahlback's and International Knee Documentation Committee (IKDC) classification systems. Radiographs were assessed and graded independently using each system. The findings showed that according to the KL classification, 25% of patients were in Grade1 and 41% in Grade 2, while Ahlback's classification showed 45% in Grade I and 43% in Grade II . IKDC grading revealed 36% each in Grades A and B. Statistical analysis revealed a 65.9% agreement between the KL and Ahlcank's classifications, with a moderate kappa value of 0.487 ($p<0.001$), indicating statistically significant agreement. The study concluded that these radiological classifications, particularly KL and Ahlback's , are reliable tools for assessing the severity of knee OA, especially in individuals over 40 years of age, and can be effectively used in clinical and research settings for consistent diagnosis and treatment planning.[27]
12. A cross-sectional study was conducted in a rural area of India to assess the magnitude of knee osteoarthritis among adults aged 40 years and above. The study

included 150 patients with knee joint pain who were diagnosed with knee osteoarthritis using the American College of Rheumatology criteria. Data were collected using a predesigned questionnaire, and statistical analysis was performed using Epi Info 7 software. The study found that the prevalence of knee osteoarthritis was 34.7%, with higher prevalence rates among individuals aged above 60 years, those with a history of diabetes mellitus, and those with a body mass index of 25 or higher. The study concluded that knee osteoarthritis is prevalent in the rural population and is associated with various risk factors.[28]

13. A cross-sectional study was conducted in rural Ballabgarh, Haryana, to assess the prevalence of knee osteoarthritis (OA) and its determinants among elderly individuals. The study included 1,000 participants aged 60 years and above. Knee OA was diagnosed using the American College of Rheumatology criteria, and data were collected through structured interviews and clinical examinations. The study found a 66.1% prevalence of knee OA among the elderly population. Significant determinants of knee OA included female gender, increasing age, higher body mass index (BMI), and a history of knee injury. The study concluded that knee OA is highly prevalence among the elderly in rural Ballabgrah, with modifiable risk factors contributing to its occurrence.[29]
14. A systemic review was conducted to investigate gender differences in the epidemiological and clinical aspects of knee osteoarthritis (OA) in the Indian population. The review included 18 studies published between 2015 and 2020 that provided data on the prevalence, risk factors, and clinical presentation of knee OA in men and women. A total of 5,540 participants were included across the studies. The review used a comprehensive search strategy in databases like PubMed and Google Scholar to identify relevant studies, and the quality of studies was assessed

using the Newcastle-Ottawa Scale. The review found the knee OA was significantly more prevalent in women, particularly postmenopausal women. Among the studies, the prevalence of knee OA in women range 35% to 62%, while in men, it ranged from 20% to 45%. Key risk factors identified included a higher body mass index (BMI), hypertension, diabetes mellitus, and osteoporosis. The study also highlighted that woman with knee OA reported more severe symptoms and functional limitations compared to men. The review concluded that gender differences in knee OA are important and should be considered in the management and prevention strategies, emphasizing the need for gender-specific interventions.[30]

15. A cross-sectional study was conducted in the urban field practice area of Bangalore Medical College and Research Institute (BMCRI), Bengaluru, Karnataka, from January to March 2015. The study aimed to estimate the prevalence of knee joint osteoarthritis and assess treatment- seeking behavior among women ages 40 years and above. A total of 120 women were selected through house-to-house visits, and data were collected using a pre-test, semi-structured questionnaire. The study found a 55% prevalence of knee osteoarthritis among the participants, with 68.2% currently on treatment. Additionally, 65.2% of the women difficulty in performing daily routine activities. The study concluded that the high prevalence of knee osteoarthritis among women at a younger age leads to decreased quality of life in the community.[31]

II. Review Literatures related to Epsom Salt hot water Application

1. A comparative study was conducted to assess the effectiveness of hot water fomentation with Epsom salt versus plain hot water fomentation in reducing knee joint pain among premenopausal women in a selected community at Mangalore. The sample consisted of 60 premenopausal women selected through purposive sampling. Pain was assessed using the Visual Analog Scale (VAS). Results indicated that the mean pain scores of the experimental group (4.4,3.7) were significantly lower than the mean pain scores of control group (5.2,5.1) in the posttest I and II respectively. The calculated 't' value in the experimental group (6.54) and in the control group (8.78) was significantly higher than the table value (tps) =2.024). thus, null hypothesis is rejected and research hypothesis was accepted. Hence the results reveled that shows that Epsom salt is a better remedy for reducing knee joint pain compared to hot water fomentation.[32]
2. A quasi-experimental study to Effect of Epsom Salt with Hot Water compress on Knee Joint Pain among Elderly with Osteoarthritis at Arunodaya Vruddhashram, Nagaiahgaripalli, near Tirupathi, Andhra Pradesh. The sample consisted of 60 elderly individuals selected through purposive sampling. To assess the effectiveness of the intervention, the Western Ontario and McMaster Universities Osteoarthritis Index(WOMAC) scale was used. The results revealed a significant reduction in knee joint pain, with the average pain score decreasing from 76.07$\pm$ 6.89 in the pre-test to 41.70$\pm$11.94 in the post-test, showing a mean difference of 34.37. The statistical analysis using a paired t- test yielded a t-value of 30.077 and a p-value<0.001, confirming the significance of the intervention. Hence, the study demonstrated that the application of Epsom salt with hot water compresses effectively alleviates knee joint pain among elderly individuals with osteoarthritis,

suggesting a viable non- pharmacological approach to pain management in geriatric care settings.[33]

3. A quasi-experimental study was conducted to assess the efficacy of hot fomentation with Epsom salt on the reduction of knee pain and inability among geriatrics with osteoarthritis at the Urban Primary Health Centre (UPHC), Madhuravoyal, Tamil Nadu. The study involved 60 elderly individuals diagnosed with osteoarthritis, selected through purposive sampling. Pain and disability were measured using the WOMAC Osteoarthritis Index both before and after the intervention. The pre-test mean score was 76.07± 6.89, and the post-test mean score was 41.70 ±11.94, showing a mean difference of 34.37. Statistical analysis using a paired t-test revealed a t-value of 30.077 and a p-value<0.001, indicating a highly significant reduction in knee pain and functional disability. The study concluded that hot fomentation with Epsom salt is a safe and effective non-pharmacological method for managing knee osteoarthritis among the elderly.[34]
4. A pre-experimental study to evaluate the effectiveness of Epsom salt with hot water versus hot water alone on knee joint pain among elderly individuals at Rohtak. The study included a total sample of 60 participants, divided into two groups of 30 each, And selected using purposive sampling technique . pain levels were assessed before and after the intervention using a Global pain rating Scale. Results indicated that the mean post-test joint pain score for the Epsom salt with hot water group was 26.38, significantly lower than the pre-test score of 43.25 ($t=16.95, p<0.01$). In contrast, the hot water only group showed a mean post test score of 33.4, down from 43.3($t=4.54, p<0.01$).hence the study concluded that Epsom salt with hot water application is more effective than hot water alone in reducing joint pain among the elderly [35]

5. A quasi-experimental study to evaluate the effectiveness of hot water application with Epsom salt on joint pain among elderly in selected areas of Kondapur, Sanga Reddy District, Telangana. The sample included 50 elderly individuals selected through purposive sampling. The Visual Analog Scale (VAS) was used for pain assessment. Results indicated a significant reduction in joint pain after the intervention, with statistical analysis showing $p<0.001$. the study demonstrated that Epsom salt hot water application significantly reduces joint pain in elderly and supports its use as a cost-effective home remedy.[36]
6. A quasi-experimental study was conducted to assess the effectiveness of hot water application with Epsom salt in reducing knee joint pain among the elderly in selected villages of Madurai District, Tamil Nadu. The sample consisted of 60 elderly individuals selected through simple random sampling. Pain intensity was measured using a modified knee joint pain scale. Elderly before the administration of hot water application with Epsom salt is (Mean=63.41, SD=6.79), and the level of knee joint pain after administration of hot water application with Epsom salt is (Mean 19.76, SD=5.76), the mean score and standard deviation score was decreased after the intervention of hot water application with Epsom salt. The obtained 't'=37.43 value was found to be significant at the level of $p<0.05$. it was observed that administration of the hot water application with Epsom salt for elderly with knee joint pain had a significant decrease in the post-test level of knee joint pain. The study concluded that Epsom salt hot water application is a simple and effective non-pharmacological intervention to alleviate knee joint pain in rural elderly populations.[37]
7. A comparative study was conducted to assess the effectiveness of Epsom salt with hot water versus plain water on pain and functional performance among arthritis

patients at a selected hospital in Udaipur, Rajasthan. The sample consisted of 60 arthritis patients selected through purposive sampling, divided into two groups: E psom salt with hot water and plain water. Pain was assessed using the Numerical Pain Rating Scale (NPRS), and functional performance was assessed using a modified WOMAC index. Post-test scores showed mean pain values of 5.35 (SD=1.729) for Epsom salt with hot water and 6.47(SD=1.756) for plain water. Unpaired t-test (t=2.519, p=0.015*) favoured Epsom salt for pain reduction. In functional performance, hot water group mean was 31.90± 11.874; plain water was 41.03± 9.654. The unpaired t-test (t=3.269, p=0.002*) showed potential for functional enhancement. Gender and family osteoarthritis history linked to Epsom salt group's post-test pain; plain water had no links, Pain function correlation significantly associated in both groups. Results showed a significant reduction in pain and improvement in functional performance in the Epsom salt group compared to the plain water group. The study concluded that Epsom salt with hot water is more effective in reducing pain and improving functional performance among arthritis patients.[38]

8. A quasi-experimental study to assess the effectiveness of Epsom salt hot water application on knee joint pain among elderly people at a selected old age home Delhi. The sample consisted of 60 elderly individuals selected through purposive sampling. To assess the effectiveness of the intervention, the Visual Analog Scale (VAS) for pain and the western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scale were used. The results revealed a significant reduction in knee joint pain, with average pain score decreasing from 74.35±5.15 in the pre- test to 39.40±7.65 in the post-test, showing a mean difference of 34.95. The statistical analysis using a paired t-test yielded a t-value of 27.68 and a p-value <0.001,

confirming the significance of the intervention. Hence, the study demonstrated that the application of Epsom salt hot water compresses effectively alleviates knee joint pain among elderly individuals, suggesting a viable non-pharmacological approach to pain management in geriatric care settings.[39]

9. A pre-experimental study to Effectiveness of Epsom Salt Hot Water Application on Knee Joint pain Among elderly people at selected Old Age Home at Dehradun, Uttarakhand. The study included a sample of 40 elderly participants experiencing knee joint pain, selected through purposive sampling. Pain levels were assessed using the Numerical Pain Rating Scale (NPRS) before and after the intervention. The mean pre-test pain score was 6.5, which significance of 3.1, resulting in a mean difference of 3.4. A paired t-test yielded a t-value of 9.82 and a p- value <0.001, confirming the statistical significance of the reduction in pain. The study concluded that Epsom salt hot water application is an effective, low- cost, and accessible non-pharmacological method to alleviate knee joint pain in the elderly.[40]
10. A true experimental study to formulation and evaluation of Epsom salt-based gel to reduced osteoarthritis pain at Linggasari Village, Indonesia total of 22 samples selected by simple random techniques and pain scale is used to assess the level of knee joint pain among selected samples. the results of clinical trials found that all Epsom salt gel concentrations effectively reduce OA pain levels (P & it;0.0001 vs. Control negative).Epsom salt gel with a concentration of 3% has a higher effectiveness level than other concentrations ((P & it;0.0001). The effectiveness of Epsom salt gel with a concentration of 3% is almost equivalent to the oral drug diclofenac sodium. Hence the study revealed that Epsom salt gel with a concentration of 3% as a topical drug has significantly reduced OA pain levels.[41]

11. A quasi-experimental research study to Analysis of Differences in Effectiveness between Salt Water Bath Therapy and Ginger Water Bath Therapy on Pain scale and its Relationship with age, gender and education level in Gout Sufferers in the Working Area of the Mpunda Public Health Centre of Bima City, 40 samples selected by using Quota sampling technique, and numerical scale is used to assess the pain level, and results showed that the Mean rank of the warm salt water bath group was lower, namely 18.55, while that of the warm ginger water bath group was 22.45. the statistical test results showed that the p-value was 0.145> 0.05, meaning that statistically, there was no difference in effectiveness between the two therapies on the pain scale of respondents because the value did not reach 5. The results of other bivariate analyses showed that age and gender were not related to pain level, where the relationship between age and pain level had p=0.114>0.05, while the relationship between sec and pain level had p=0.123>0.05, hence the study revealed that salt water bath therapy is clinically more effective than ginger water bath therapy on the pain scale in elderly patients without arthritis, but statistically, there is no difference.[42]
12. A randomized controlled trial was conducted to Assess the Effect of warm Epsom salt packs on knee osteoarthritis at the Department of Naturopathy, SDM College of Naturopathy and Yogic Sciences, Ujiri, Karnataka. Samples are been selected using probability sampling technique, study included 100 participants aged 35-75 years, diagnosed with osteoarthritis. The intervention group received a 20-minute warm Epsom salt pack, while the control group received a placebo treatment. Outcomes were measured using goniometry, the Visual Analog Scale (VAS), Short Form-12 (SF-12), and the Western Ontario and McMaster Universities Osteoarthritis Index(WOMAC). Significant improvements were observed in the

intervention group across all measures, with p-values <0.0001. The study concluded that warm Epsom salt packs effectively reduce pain, stiffness, and improve range of motion and quality of life in knee osteoarthritis patients.[43]

13. A quantitative research-controlled trial on evaluation of early period effectiveness of balneotherapy in patients with knee osteoarthritis at Afyonkarahisar, Turkey. By using probability sampling technique 60 samples are selected by patients diagnosed with primary knee osteoarthritis patients the samples are evaluated by using Visual analogue scale(VAS) , WOMAC ,isokinetic muscle testing scale used to assess the samples and the results of study found to be significant improvements in pain, function , and muscle strength in the balneotherapy group($p<0.05$) hence the study found effective in reducing pain and improving physical function in knee osteoarthritis patients.[44]
14. A quantitative research approach and pre-experimental research design to assess the Effectiveness of Hot water application with Epsom salt to reduce Knee Joint Pain in Osteoarthritis among women residing in selected Urban Community of Maharashtra among the women's a purposive sampling technique used for this study, in total 100 samples of women's are selected and by using Eleven Point Numerical Pain Rating Scale pain level was assessed for the samples. Results of the study revealed that the hot water application with Epsom salt has shown Highly significant difference ($t=39.41$ at $p<0.005$). It indicates that Epsom salt with hot water application was effective in reduction of knee joint pain and found significant, hence the main conclusion of this study was hot water application with Epsom salt was effective in reducing knee joint pain among women.[45]
15. A comparative study to Assess the Effectiveness of Epsom Salt Hot Water Application and Plain Hot Water Application to Reduce Knee Joint Pain among Old

age people in selected old age homes in Rajahmundry, by using a probability simple random sampling technique total 60 samples was selected sample will be divided into two groups. The experimental group consists of 30 clients. And the 0-10 numerical is pain intensity scale is used to assess the knee joint pain level for the samples. Results of the study revealed that pre-test and post-test scores of old age people with knee joint pain mean were 2.8 and 1.6, respectively. The mean difference was 1.2. the standard deviation was 0.94 and 0.74, respectively. The calculated "t" value was 4.9 greater than tabulated" value 2.05 "p" value was 0.000 which shows that there was a significant difference in knee joint pain between pre-test and post-test in the experimental group hence the study revealed that it shows that Epsom salt hot water application was effective than plain hot water application.[46]

16. A quasi- experimental study was conducted to assess the effectiveness of hot fomentation with Epsom salt versus common salt on knee joint pain among the elderly in selected old age home in Pune, Maharashtra. The sample consisted of 40 elderly induvial selected through purposive sampling, divided into two groups: Epsom salt and common salt. Pain was assessed using a global pain scale. Results (Mean=56.41, SD=6.79), and the level of knee joint pain after administration of hot water application with Epsom salt is (Mean=19.76, SD=5.76), it showed a significant reduction in knee joint pain in the Epsom, salt group compared to the common salt group. The study concluded that hot fomentation with Epsom salt is more effective in reducing knee joint pain among the elderly. [47]
17. A quasi-experimental study to assess the effectiveness of hot water application with Epsom salt versus plain hot water application on joint pain among adults suffering from arthritis in a selected urban area of New Delhi. The sample included 60 adults

with mild to moderate arthritis, selected through purposive sampling. Participants were divided into two equal groups: 30 received hot water application with Epsom salt and 30 received plain hot water application. Pain was measured using the Oxford Knee Score and the Numeric Pain Rating Scale. The results showed that both treatments were effective in reducing joint pain (p=0.000 for both groups). However, the mean post-test pain score in the Epsom salt group was 1.60, compared to 2.70 in the plain water group, indicating that Epsom salt was more effective. These was no significant association between pre-test pain levels and variables like age, gender, pain duration, or use of other pain relief methods. The study concluded that hot water with Epsom salt is a more effective non-pharmacological approach in managing arthritis-related joint pain.[48]

18. Quasi-experimental study in South Eastern Europe to assess the efficacy of hot fomentation with Epsom salt in reducing knee pain and disability among geriatrics with osteoarthritis. A total of 60 elderly participants were selected using purposive sampling and divided into two groups. The intervention group received hot fomentation with Epsom salt applied to the knee joint for 20 minutes twice daily over two weeks. Pain and functional ability were assessed using the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Results showed a significant reduction in pain in the intervention group, with the mean pre-test score of 76.07 ± 6.89 dropping to 41.70 ± 11.94 post-intervention ($t = 13.788$, $p < 0.001$). The control group showed no significant changes. The study concluded that hot fomentation with Epsom salt significantly reduces pain and improves function in elderly individuals with knee osteoarthritis.[49]

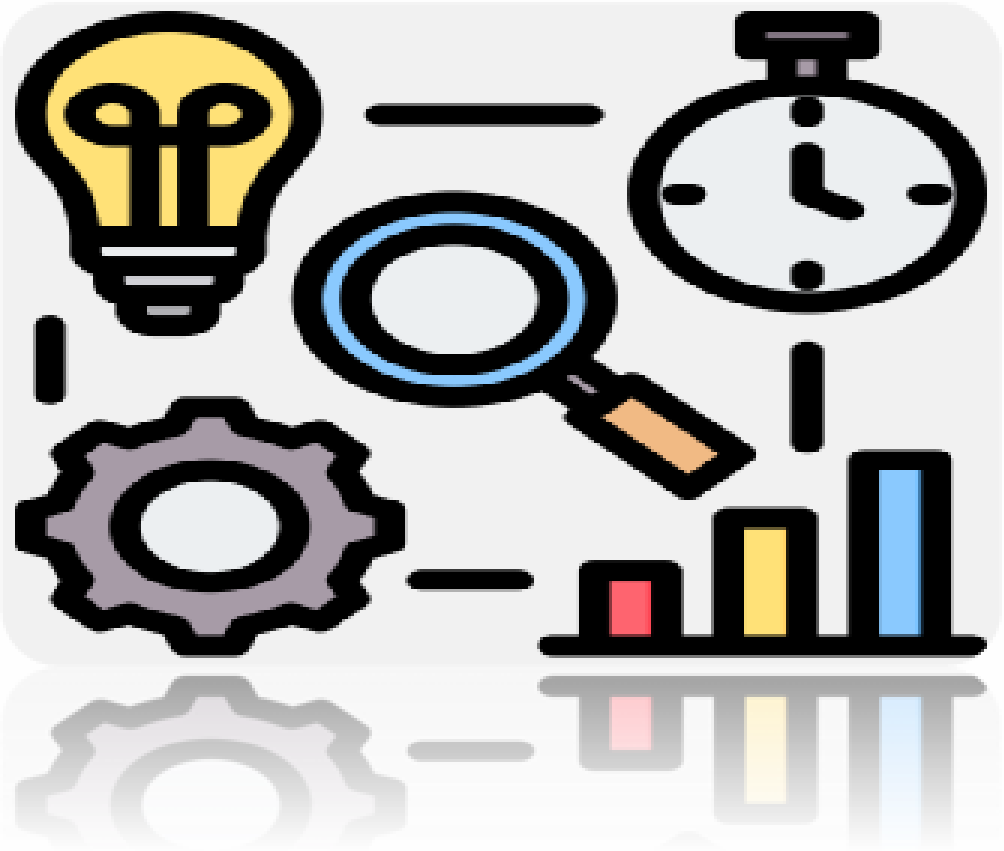
19. Pre-experimental study in a selected rural area of Puducherry, India, to evaluate the effectiveness of Epsom salt with hot water application on knee joint pain among the elderly. The study included 29 participants aged 60 years and above. The intervention consisted of daily application of 30 grams of Epsom salt dissolved in hot water to the affected knee joints for 10 consecutive days. Pain was measured using the WOMAC scale. Results showed a significant decrease in pain scores, with the pre-test mean score of 2.93 ± 0.593 reducing to a post-test mean of 2.17 ± 0.384 ($t = 7.085$, $p < 0.001$). The study concluded that Epsom salt hot water application is an effective, low-cost, non-invasive intervention for reducing knee pain among elderly individuals.[50]
20. A randomized controlled trial on Efficacy of balneotherapy on pain, function and quality of life in patients with osteoarthritis of the knee". It was conducted in Siena, Italy, by using probability sampling technique 60 patients with bilateral primary osteoarthritis was selected and samples were evaluated by using VAS for pain , WOMAC, Liquesce index, SF- 36 and the arthritis impact measurement scale(AIMS). The results of the study revealed that the is significant improvement was seen in pain ($p<0.001$), physical function ($p<0.05$), and reduced drug consumption ($p<0.05$) after 2 weeks and sustained over 3 months hence the study reveals that balneotherapy with mineral water offers effective relief from symptoms of knee osteoarthritis.[51]

SUMMARY

This chapter dealt with the review literature of knee joint pain , and Epsom salt hot water application.

CHAPTER-IV

METHODOLOGY



CHAPTER-IV

METHODOLOGY

This chapter deals with the methodology adopted for the proposed study, and the different steps under taken . it includes research approach, research design, setting, sample and sampling technique sampling criteria development and description of the tool, procedure of data collection and data analysis.

Methodology of the research indicates the general pattern of organizing the procedure for empirical study together with method of obtaining valid and reliable data for problem under investigation.

RESEARCH APPROACH

The term 'research approach' refers to a group of policies and strategies that determine the entire course of research. The researcher has chosen the strategy and process for gathering , analyzing, and interpreting the data. It is mostly dependent on the nature of the study problem that was chosen and on providing the most precise and effective solution possible.[52]

The selection of research approach is the basic procedure for conducting a research enquiry. The present study aimed at assessing the effectiveness of Epsom salt hot water application on knee joint among the elderly people.

Therefore, **Quantitative approach** was considered suitable for attaining the objectives.

RESEARCH DESIGN

Research design is an investigator overall plan for obtaining answers for the research questions.[53]

In this study , A true Experimental research design was adopted for this study.

R	**O_1**	**X**	**O_2**
R	**O_1**		**O_2**

R- Researcher group.

O_1- Observation made at first day of recruitment of sample.

O_2- Observation immediately made after the 15 days of intervention.

X- Epsom salt hot water application.

VARIABLES:

Dependent variable:

The dependent variable in this study is knee joint pain.

Independent variable:

The independent variables in this study are Epsom salt hot water.

Extraneous variable:

Extraneous variable is those which are present in the research environment that may interfere with research findings. In this study, it references to the selected sociodemographic variables like Age, Gender, Religion, Education status, Marital status, Socioeconomic status, type of family, Diet, Previous occupation, Duration of knee pain in years, Nutritional status, Treatment for joint pain. Type of physical activity, History of comorbid illness.

SETTING OF THE STUDY

Setting refers to the area where the study is conducted.[54]

The present study setting is the selected village under Devarayasamudra ,Primary Health Center, based on setting and sampling technique, feasibility of conducting study, geographical proximity and ethical clearance.

The study was Conducted at

Experimental group- Ananthapura village.

Control group- Mallapanahalli village, Devarayasamudra , Kolar

POPULATION:

Population is refereed as the target population which represents the entire group of the elements like individuals or objects that need certain criteria for instruction on the study.[54]

In the present study the target population in the present study as elderly people with age of 60 years and above who resident at the selected villages under the Devarayasamudra Primary Health Centre.

SAMPLE:

Sample refers to a portion of the population which represents the entire population.[54]

The sample for the study consists of Elderly people from the selected areas with an age group of 60 years and above who are complains knee joint pain.

SAMPLE SIZE:

In this study the sample size consists of 2 sets of samples (45 Experimental and 45 Control group) and a total of 90 Elderly people. From Anathapura village and Mallapanahalii village under Devarayasamudra PHC.

Ananthapura village is under the under Devarayasamudra PHC, Kothamangala Subcenter. Total population Anathapura of village is 754 in this Elderly population is 90.

Mallapanahalli village is under the Devarayasamudra PHC & Subcenter. Total population Mallapanahalli of village is 957 in this Elderly population is 140.

TABLE(1) : Samples Screening and Section process.

Name of the selected villages.	Total Elderly people (as per village report)	Total Elderly peoples screened by Researcher	Total Elderly people with mild-moderate pain	RCT (computerized random technique)	Total selection of sample for study as per study sample size
Ananthapura	**140**	103	78	**By Open Epi-software used.**	**45**
Mallapanahali	**90**	80	52		**45**

SAMPLE SIZE DETERMINATION

Power analysis is used to determine the sample size for this study, which considers results from earlier research and a thorough examination of the literature. With a mean 30.0 and power of 0.5 and a predetermined significance level of 80-95%(CI) and 5% absolute error (d), the estimated sample size is around 86%. If 10% of the sample's dropouts are taken into account, the sample size is around 45 elderly people.

A total of 90 elderly population were participated as study participants in the study referred to as the sample size. The sample size was determined by utilizing comparable study literature.(A study to assess the effectiveness of hot water application with Epsom salt to reduce knee joint pain the among elderly in selected villages at Madurai district)

By using **Cochran's Formula,**

$$N_0 = \frac{Z^2.P.(1-P)}{e^2}$$

p: the population size (230).

e: the management of error (5%).

z: the Z-value, extracted from a Z-table (1.96).

SAMPLING TECHNIQUE:

Sampling technique defines the process of selecting a group of people or other elements with which to conduct a study.[55]

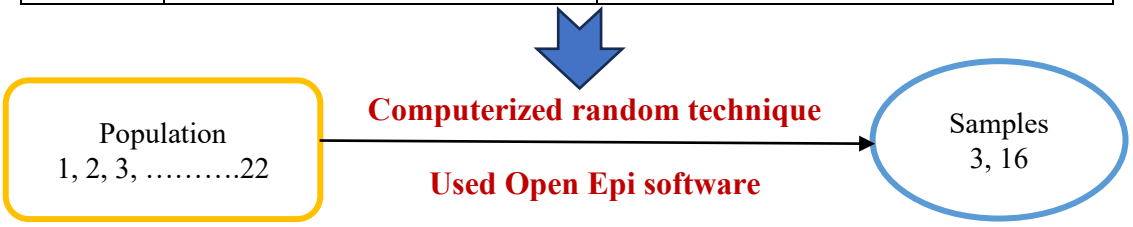
Simple random sampling is the most basic sampling design. In this method each member(sampling unit) of the population has an equal chance of being selected as the sample. The procedure is easy to apply if all sampling units are available. The randomness of the samples is ensured by any one of several procedures such as one of lottery, split-half and table of random numbers/ computerized random technique.

In this study simple random sampling technique was adopted by use of a computerized random technique by using open Epi software(it's a free accessible software).

Table (2):- RANDOM SAMPLING TECHNIQUE:

Sl No	Village name	Name of the subcentre.
1	Kothmangala	**Kothmangala**
2	B. Kurubarahalli	
3	Ananthapura	
4	Guttahalli. V	
6	Betgerhalli	
7	Bheemapura	
8	Honshettahalli	
9	Keeloholali	

10	Thattanagunte	**Keeloholali**
11	Hosakere	
12	Kempapura	
13	Ramanathapura	
14	Devarayasamudra	**Devarayasamudra**
16	Mallapanahalli	
17	Doddaganahalli	
18	Bellamballi	
19	Kammadatti	
20	Kamaanur	
21	Ramasandra	
22	Cholanagunte	



Followed by computerized method (by using open Epi software) two villages selected for this study were selected villages are:

1. For Experimental group Ananthapura village, Kothmangala subcenter, Devarayasamudra PHC.
2. For Control group Mallapanahali village , Devarayasamudra SC & PHC.

CRITERIA FOR SELECTION OF SAMPLE

Inclusion criteria: Geriatric clients who are

1. Aged 60 years and above , both males and females.
2. Having knee related symptoms like pain, stiffness, swelling , and redness Etc.
3. Willing to participate.
4. Who are available at the time of data collection.
5. Elderly people who are having mild and moderate knee joint pai.

Exclusion criteria: Geriatric clients who are

1. Having other type of joint pains.
2. Having other chronic illness and psychological illness.
3. Who undergone for knee related surgery.
4. Elderly people who are having sever and satisfactory pain.

DATA COLLECTION TOOL:

An instrument is a device or technique that a researcher used to collect data based on the research problem and the objectives of the study.

The adopted tool consists of the following sections.

SECTION A : Socio demographic data

It consists of Age, Gender, Religion, educational status, marital status, socio-economic status, type of family, diet, previous occupation , Duration of knee pain in years, Nutritional status, Treatment for joint pain. Type of physical activity, History of comorbid illness.

SECTION B: Standardized Oxford knee score Scale.

It consists of Standardized Oxford Knee score scale. The tool consists of 12 items with a total score of 48.

Tool Description: The Oxford Knee score is a standardized tool developed by researchers at the university of oxford, specifically jill Dawson, Ray Fitzpatrick, David Murray, and Andrew Carr, who published their work in journal of bone and joint Surgery in 1998. The OKS consists of 12 questions that evaluate pain and functional limitations in Elderly people with Knee problems.

The questions cover various aspects, such as:-

- Pain severity and frequency
- Ability to perform daily activities (e.g., walking, climbing stairs)

Impact of Knee problem on daily life each question has **5 response (0 to 4)** options, and the score range from **0 to 48** , with higher scores indicating better Knee function and less pain.

PREPARATION OF EPSOM SALT HOT WATER APPLICATION:

Ingredients:

- Epson salt – 30gm/ client
- Hot Water -150 ml (110F)
- Cotton cloth
- Bathing Thermometer

Procedure:

- Heat the 150 ml of water up to 110 F.
- Add 30grms of Epsom to it.
- Mix it well
- Check the temperature and dip the cotton cloth in to it
- Squeeze the cloth
- Apply on knee over 15min once a day over a period of 15 days.

TABEL : (3) Interpretation of Scores are categorized into four levels.

GRADING FOR THE OXFORD KNEE SCORE		
PAIN GRADING	**PAIN LEVEL**	**SCOREING**
Poor	**Sever pain**	**Score 0 to 19**
Moderate	**Moderate to Severe pain**	**Score 20 to 29**
Good	**Mild to Moderate pain**	**Score 30 to 39**
Excellent	**Satisfactory pain**	**Score 40 to 48**

Interpretation : scores are categorized in to four levels:

- **Sever knee joint pain(0-19):** May require surgical intervention.
- **Moderate to Severe knee joint pain (20-29):** Requires consultation with an orthopedic surgeon.
- **Mild to Moderate knee joint pain (30-39):** May benefit from further investigations and treatment.
- **Satisfactory joint function(40-48):** May not require treatment.

Tool Reliability and Validity:

Reliability:-

- Internal consistency : Cronbach's alpha=**0.89-0.92** (Excellent internal consistency)
- Test – retest reliability: Intraclass correlation coefficient (ICC)= 0.84-0.93(Good to Excellent test-resent reliability)

Validity:-

- Content validity: The OKS covers relevant aspects of knee problems and their impact on daily life.
- Construct validity: Correlation with other measures of knee function and pain, are moderate to strong **(r = 0.4-0.7).**
- Responsiveness: The OKS I sensitive to changes in Knee function and pain over.

DATA COLLECTION PROCEDURE:

The data was collected on between 10/03/2025 to 25/03/2025 i.e. over a period of 15 days. The time schedule for data collection and administration of Epsom salt hot water on every mild morning day.

THE DATA WAS COLLECTED UNDER THE FOLLOWING PHASES:

1. **PRE-PREPARATORY PHASE:**

Ethical clearance was obtained from the instructional ethics committee of Sri Devaraj Urs Collage of Nursing on 09-05-2024, A formal written permission was obtained from the Medical Officer, Devarayasamudra Primary Health Centre.

Using simple random sampling technique 90 (45 Experimental group and 45 Control group) samples were selected who will fulfill the inclusion criteria.

2. **DATA COLLECTION PHASE:**

The researcher Established good rapport with the village people, Elderly people. Screening for elderly with knee joint pain a total 80 elders in Anantapur village and 90 elders in Mallapanahali village. Are been screened for knee joint pain in which who are having mild and moderate knee joint pain has been selected for this study. And then the importance of Epsom salt hot water application in reducing of knee joint in elderly people in Experimental group. Written consent and informed consent was taken from all the selected elderly People with pre-test based on the inclusion criteria. Followed by for Experimental group Epsom salt hot water application is administrated for period of 15 days ; Control group was in routine follow up and post-test was conducted after 15 days for both group by using same tool.

PILOT STUDY

A pilot study was conducted at Bheemapura and Bettigenahalii village , under DRS primary health center, 12 elderly people (10 % actual sample) are selected by simple random sampling technique(using computerized random sampling technique) and based on inclusion criteria of this study . pilot study was conducted from 17/02/2025 to 03/03/2025. The findings to the study were as follows ;

Section A:- The Socio-demographic data of the elderly people in Experimental and Control group revealed as;

- Majority 83% of the study sample were between the age group of 60-65.
- With regards to the gender in experimental group and also in control group majority 67%.
- As concerning to Education status 100% of study samples belongs to Non-formal education in both experimental group and control group.
- In 100% of samples in both groups are Hindu religion.
- As regards to Marital status in Experimental group Majority 67% study sample are Married in Control group 50% study sample are Married.
- Socio-Economic status 100% of study samples belongs to Below Poverty level Status in both groups.
- With regarding to Type of family in Experimental group majority 83% study sample belongs to Nuclear family.
- As Concerning to Diet patter 100% of study samples belongs to mixed diet in both Experimental and Control group.
- With regarding to previous Occupation in Experimental group Majority 68% belongs to home in Control group Majority 68% belongs to home makers .
- With regards to duration of pain in experimental group majority 67 % of study

sample duration of pain belongs to >1 year , and in Control group 50% of the study samples belong to 7-12 months.

- With Regarding to Nutritional status in Experimental group Majority 50% belongs to Normal weight, and in Control group Majority 67% belongs to Normal weight.
- As Concerning to Treatment for joint pain in both Experimental group and control group study sample were not undergoing for any treatment 100% were belong no treatment group.
- With Regarding to Physical activity In Experimental group majority 50% samples High level of physical activity (>30min/day) And in Control group majority 67% of study sample belongs to High level of physical activity (>30min/day) .
- With Regarding to history of comorbid illness 100% of the study samples belong to absence of comorbid illness in both experimental and control group.

Section B: Frequency and percentage distribution of pre and post-test level of knee joint pain using standardized Oxford Knee Score in the Experimental group and Control group.

Depicts that comparison of overall pre and post-test frequency and percentage of level of knee joint pain. The overall of pretest in experimental group majority of participants (67%) are having moderate pain level, and 33% had mild pain , followed by the posttest after the intervention there was significant improvement with majority 84% of participants reported mild pain and 17% are moderate pain. And with control group at pre-test majority 67% are having moderate pain and 33% reported with mild pain and at post-test also there was no any markable changes its remails same with 67% and 33% hence its shows in experimental group the Epsom salt hot water application is effective in reduction of knee joint pain among the elderly.

Section C:- To Evaluate the Effectiveness of Epsom salt hot water application on Elderly people with in the group.

Represents the effectiveness of Epsom salt hot water application on knee joint pain among the Elderly , there was a significant improvement between the pretest and posttest mean scores of experimental group and control group. The pretest and posttest enhancement of mean and standard deviation of experimental group is 6.3 ± 7.9. and in control group 0.5±4.2, and the paired t test values with comparison of mean experimental group scores showed that 3.63 and 1.464 for control group respectively and in experimental group found to be statistically significant at $p<0.05$with degree of freedom at 4. Its evidence that, Epsom salt hot water application was effective in reducing of knee joint pain among the elderly people hence H_1 is accepted.

Comparison of post-test level of knee joint pain among the elderly people between the groups.

Results reveled that, comparison of mean value between experimental group and control group . the mean posttest score of experimental groups was 33.3 with SD 3.559 and in control group mean score is 26.16 with SD of 4.167, MD is 3.203 the unpaired t value in 3.203 with P value of .009, which is greater than the standard level of significant ($P<0.05$). indicating that Epsom salt hot water application is effective in reducing of knee joint pain among the elderly in Experimental group compared with Control group.

Section D:- Association could not able to apply as sample size is less than 30.

Conclusion:-

The pilot study helps the researcher to see the feasibility and the available of sample and cooperation of respondents, accessibility of the study setting and financial

requirement were established. So, this study helps the researcher to confirm the feasibility of carrying out the main study and it found to be feasibility.

Data will be collected in the following steps:

Step 1: Ethical clearance will be obtained from the Institutional Ethical Committee of Sri Devaraj Urs Collage of Nursing ,Tamaka, Kolar.

Step 2: Formal permission will be obtained from the concerned Medical officer of selected community areas, Kolar.

Step 3: As an investigator, the study objectives , purpose and duration of study will be explained and obtain informed consent and participation informed sheet from the participants.

Step 4: 90 samples was be randomly selected using simple random technique of which 45 samples will be considered for Experimental group and 45 sample will be in Control group.

Step 5: The pre-test was be conducted on the selected participants (elderly aged 60 years and above) by screening for knee joint pain by using standardized Oxford knee score scale in both the Experimental and Control group.

Step 6: in the Experimental group, samples who are with mild and moderate pain was given intervention as a topical treatment by applying soaked cotton cloth in Epsom salt hot water by the researcher. This intervention prepared by adding 30 grams of Epsom salt to 150 ml of hot water , and the temperature of water was assessed by using bath thermometer(110-degree Fahrenheit).the application was left over for a period of 15 minutes and continued the same for a period of 15 days.

Step 7: posttest was assessed in both the groups after 15 days using the same Oxford knee score scale. Study conducted in period of **15 days from 10/03/2025 to 25/03/2025.**

Step 8: finally thank to all the participants.

STEP-1

- The ethical clearance was be obtained from the **Institutional Ethics Committee**

STEP-2

- Formal permission was be been obtained from the concerned medical officer at primary health center , Devarayasamudra.

STEP-3

- All the elderly people with age of 60 years and above was **screened for knee joint pain** by using standardized Oxford knee score tool.

STEP-4

- Written informed consent form and participant information sheet obtained from the participants, screeing of Elderly with Knee joint pain.

STEP-5

- conducting of **pre-test** .
- A total of 90 Elderly people who are having Knee joint pain grading mild and moderate pain was randomly selected by using a **simple random sampling technique.(45 samples for each group)**

STEP-6

- The Pre-test was conducted on the day of recruitment using the standardized Oxford Knee score scale followed by Epsom salt Hot water application **Intervention** was given to the Experimental group for a period of 15 days. Whereas routine follow-up was done to the Control group.

STEP-7

- **Post test** was assessed in both groups after 15 days using the same tool
- This Study Conducted in period of 15 days from 10/03/2025 to 25/03/2025

STEP-8

Finally Thank all the participants

FIG. (3) SCHEMATIC REPRESENTATION OF DATA COLLECTION

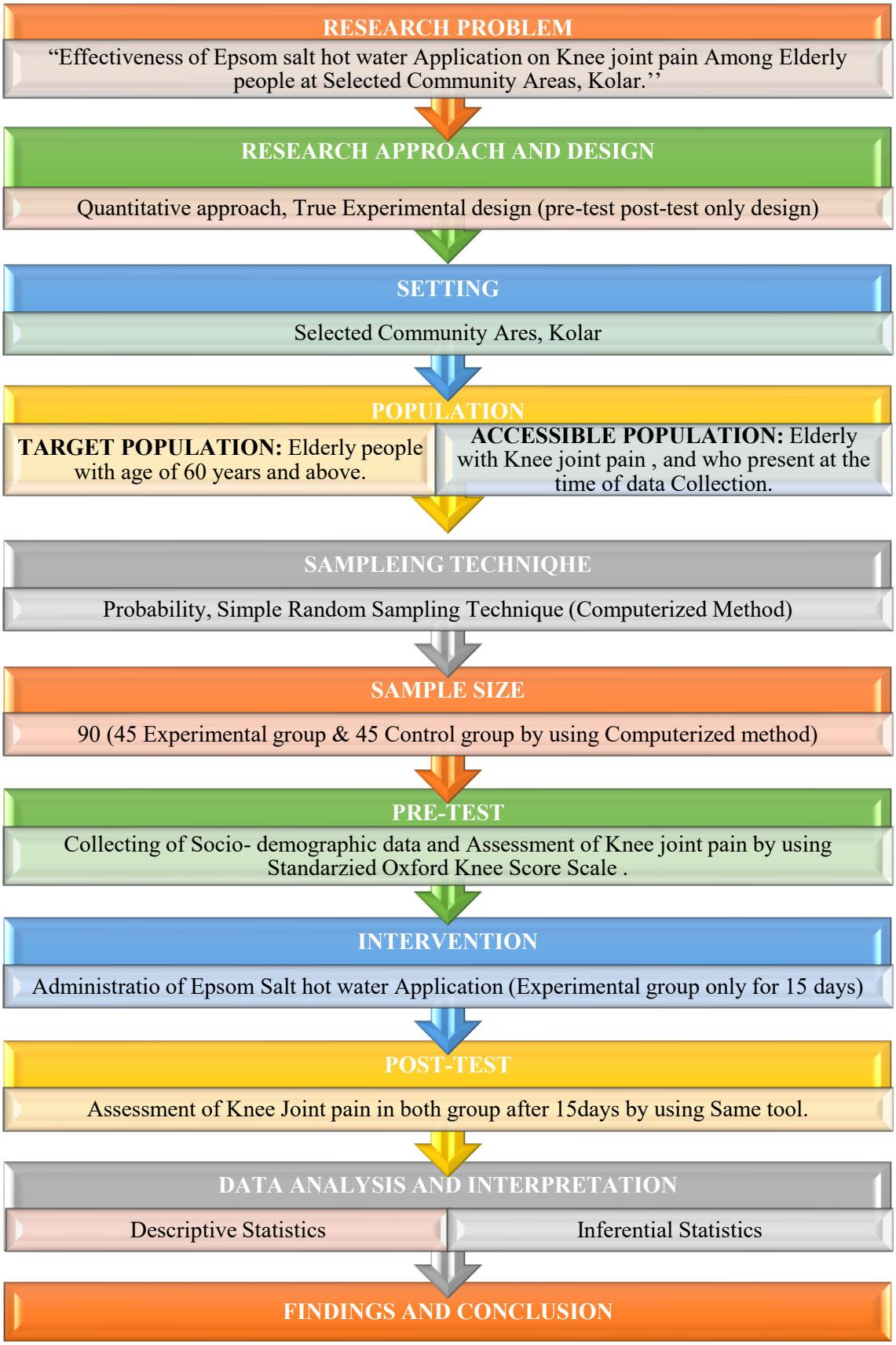
PLAN FOR DATA ANALYSIS

The analysis of data requires a number of closely operations such as establishment of categories, the application of these categories to raw data through coding , tabulation and then drawing statistical inference.

The data obtained was analyzed by descriptive and inferential statistics in achieving the objectives of the study.

The data analysis was done by the following steps.

1. Organization of data in master sheet
2. Descriptive statistics was used to analyze the frequency , percentage, mean and standard deviation of demographic variables.
3. Inferential statistical was used to determine the comparison, relationship, and association.
    a. Paired ‘t’ test was used to compare the difference within the groups of Experimental and Control groups.
    b. Independent ‘t’ test was used to find out the effectiveness of Epsom salt hot water application by comparing pre-test and post-test scores between the groups.
    c. Chi-square was used to find out the association between socio-demographic variables.



FIG(4) : SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY

SUMMARY:-

This chapter of methodology has dealt on research approach, research design, setting , population , sample , sample size, sampling technique, data tool, method of data collection and plan for data analysis.

CHAPTER-V

SAMPLE SIZE OF ESTIMATION

CHAPTER-V

SAMPLE SIZE OF ESTIMATION

THE SAMPLE SIZE ESTIMATION PROCESSS

STATEMENT OF THE PROBLEM

"Effectiveness of Epsom salt hot water application on knee joint pain among elderly people at selected community areas, Kolar".

Research approach: - Quantitative research approach

Research design: - True experimental pretest and post-test design.

Sampling technique: - Simple random sampling technique with computerized method.

Sample size: - The sample size consisted of a total 90 elderly people who who are residing in selected community area, Kolar.

Sample size estimation: - Sample size was estimated based on the previous similar study on effectiveness of hot water application with Epsom salt to reduce knee joint pain among the elderly in selected villages at Madurai district 2023, Y. john Sam Arun Prabu.

For the present study 90 elderly people were selected in selected community area , Kolar.

Mr. S. Ravishankar
Asst. Professor, Statistics
Dept. of Community Medicine
SDUMC, Kolar-563103

Signature of the statistician:

Name &Designation

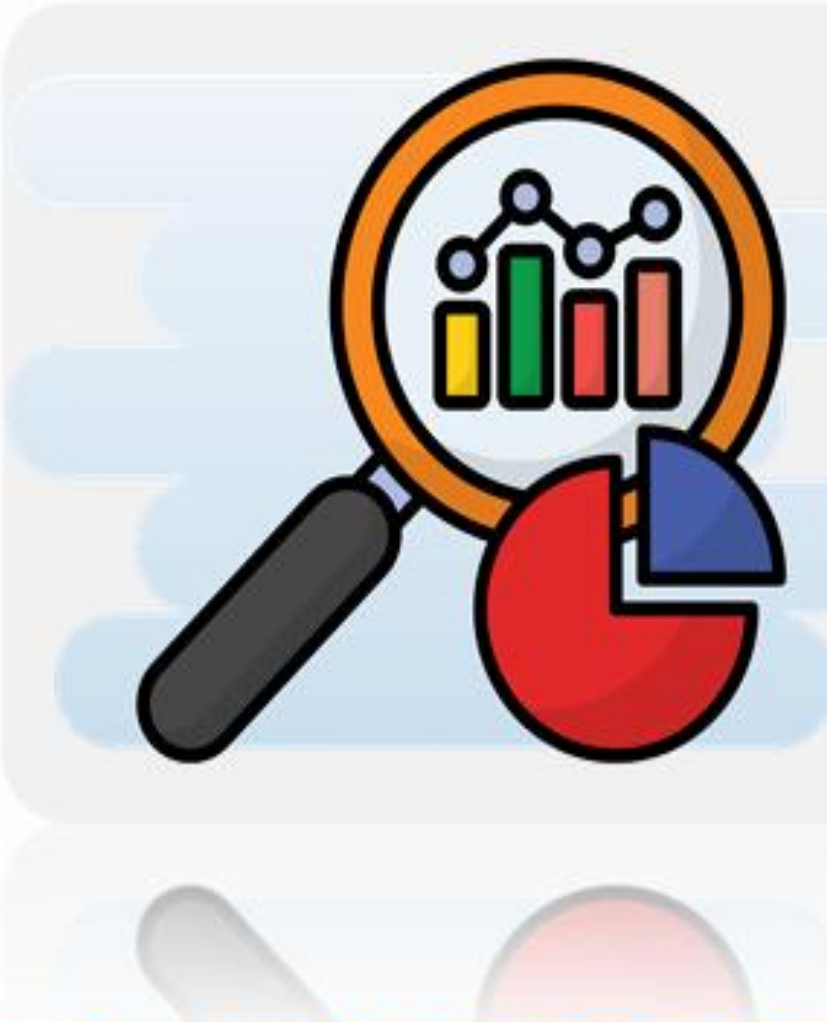
Mr. S. RAVISHANKER
Assistant Professor
Dept of Community Health Medicine,
SDUAHER, Tamaka , Kolar.

Date: 22/05/2025.

Place: Tamaka, Kolar

CHAPTER-VI

ANALYSIS AND INTERPRETATION



CHAPTER-VI

ANALYSIS AND INTERPRETATION OF THE DATA

Chapter describes the analysis and interpretation of the data gatherer to determine the effectiveness of Epsom salt hot water application on knee joint pain among elderly people, the data was collected from 90 elderly people who are residency in selected village under Devarayasamudra Primary Health Centre. By using Standardized Oxford knee score scale.

The collected data was processed and analyzed using both descriptive and inferential statistics based on the objectives and hypothesis formulation for the present study by using IBM SPSS statistics 20.

OBJECTIVES OF THE STUDY:

1. To assess the level of knee joint pain among elderly in both the Experimental and Control group using standardized Oxford knee score scale.
2. To determine the Effectiveness of Epsom salt hot water application on knee joint pain among elderly by comparing pretest and posttest scores of Experimental and control groups.
3. To find the association between the levels of knee joint pain and selected socio-demographic variables.

RESEARCH HYPOTHESES

H_1: There will be a significant difference on knee joint pain scores among elderly people before and after Epsom salt hot water application.

H_2: There will be a significant association between level of knee joint pain and socio-demographic variables.

ORGANIZATION OF THE STUDY FINDINGS:

The analyses data is organized and presented under the following section based on the objectives.

SECTION A:

Distribution of socio-demographic variables of elderly people in Experimental group and Control group.

SECTION B:

Deals with the data pertaining to the first objectives of the study, which was to estimation of pre-test and post-test level of knee joint pain score grading of elderly people by Standardized Oxford knee score, in with in the groups.

SECTION C:

This section deals with finding related to the second objectives of the study that to evaluate the effectiveness of Epsom salt hot water application on elderly people with in groups. By comparison of pre-test and post-test level of knee joint pain among the elderly people in between the groups.

SECTION D:

This section describes the to find out the association between post-test level of knee joint pain with their selected socio-demographic variables in Experimental and control group.

SECTION A: SOCIO-DEMOGRAPHIC VARIABLES

Table (4) : Distribution of baseline characteristics in terms of frequency and percentage both experimental and control group **N= 90**

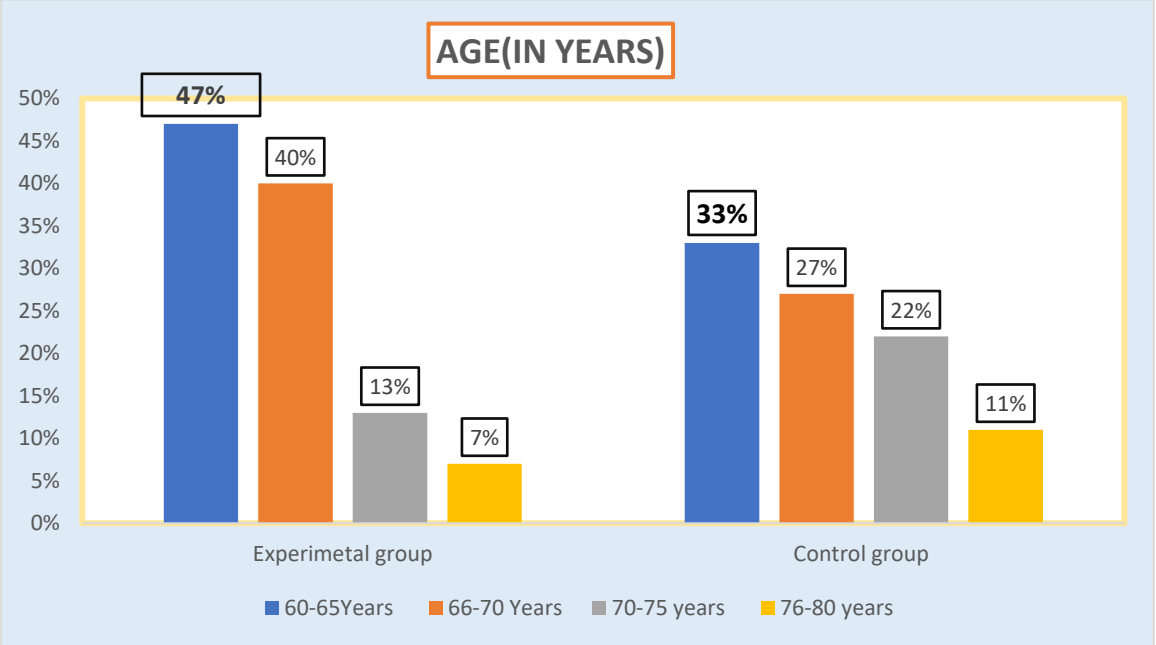
Sl. No	Socio Demographic variables	Experimental group (n=45)		Control group (n= 45)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	**Age (in Years)**				
	60-65	21	**47**	18	**40**
	66-70	15	33	12	27
	71-75	06	13	10	22
	76-80	03	7	5	11
2.	**Gender**				
	Male	14	31	19	42
	Female	31	**69**	26	**58**
3.	**Educational status**				
	Formal education	0	0	0	0
	No-Formal education	45	**100**	45	**100**
4.	**Religion**				
	Hindu	45	**100**	45	**100**
5.	**Marital status**				
	Married	18	40	23	**51**
	Widowed	27	**60**	22	49
6.	**Socioeconomic status**				
	Above poverty level	0	0	0	0
	Below poverty level	45	**100**	45	**100**
7.	**Type of family**				
	Nuclear	35	**78**	37	**82**
	Joint Family	10	22	08	18
8.	**Diet**				
	Mixed Diet	45	**100**	45	**100**

9.	**Previous Occupation**				
	Home marker	21	**47**	20	**45**
	Private employ	13	29	11	24
	Government employ	00	00	0	00
	Other	11	24	14	31
10.	**Duration of pain**				
	1-6 Month	07	16	11	24
	7-12Month	14	31	15	33
	1 Year and above	24	**53**	19	**43**
11.	**Nutritional status**				
	Under weight	05	11	06	13
	Normal weight	24	**53**	25	**56**
	Over weight	16	36	14	31
12.	**Treatment for joint pain**				
	Yes,	0	0	0	0
	No	45	**100**	45	**100**
13.	**Physical activities**				
	No involved	0	0	0	0
	Low (less than 20Min/day)	22	**49**	26	**58**
	High (More than 30Min/day)	23	51	19	42
14.	**History of comorbid Illness**				
	Present	11	24	08	18
	Absent	34	**76**	37	**82**

1. AGE

Table (5) :- Distribution of samples based on the age in terms of frequency and percentage both Experimental and Control group.

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Age (in Years)				
60-65	21	**47**	18	**40**
66-70	15	33	12	27
71-75	06	13	10	22
76-80	03	7	5	11



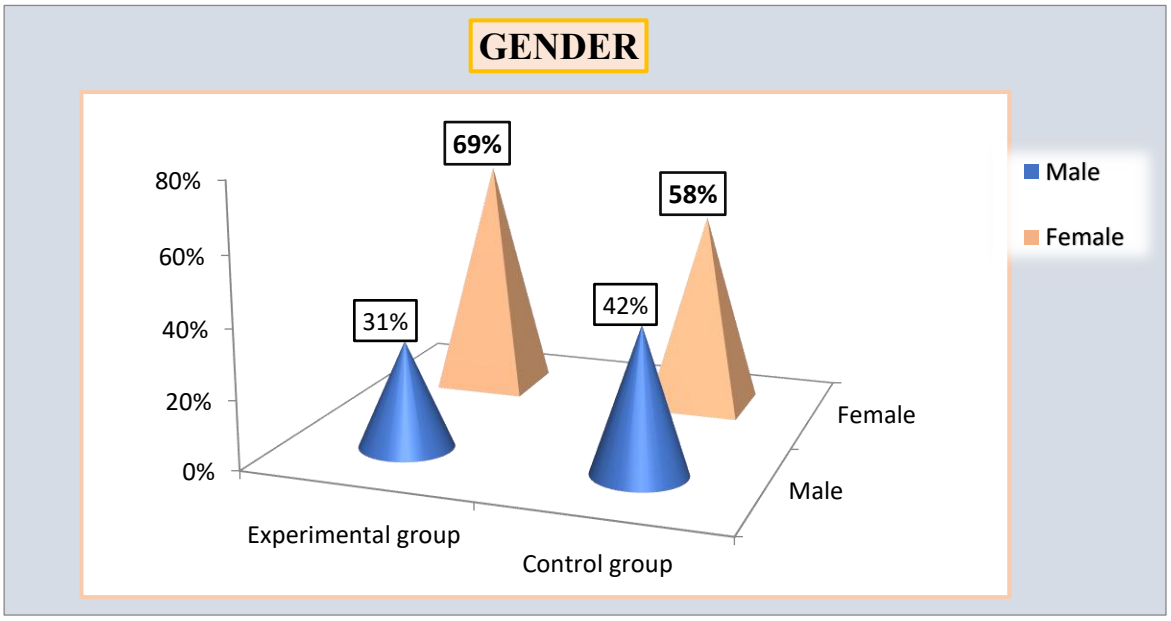
Fig(5)- Bar diagram depicts the percentage of study participants according to Age

Table 05 and figure 05 represent to Age in Experimental group majority 47% of the study sample were between the age group of 60-65 years and 33% samples belongs to the age group of 66-70 years , 13% belongs to 71-80 years and 07% samples in the age group of 76-80 years. In Control group majority 40% of the study sample were between the age group of 60-65 years and 27% samples belongs to the age group of 66-70 years , 22% belongs to 71-80 years and 11% samples in the age group of 76-80 years.

2. GENDER

Table (6) : Distribution of Gender in terms of frequency and percentage both experimental and control group.

Socio Demographic variables	Experimental group(n=45)		Control group(n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Gender				
Male	14	31	19	42
Female	31	**69**	26	**58**



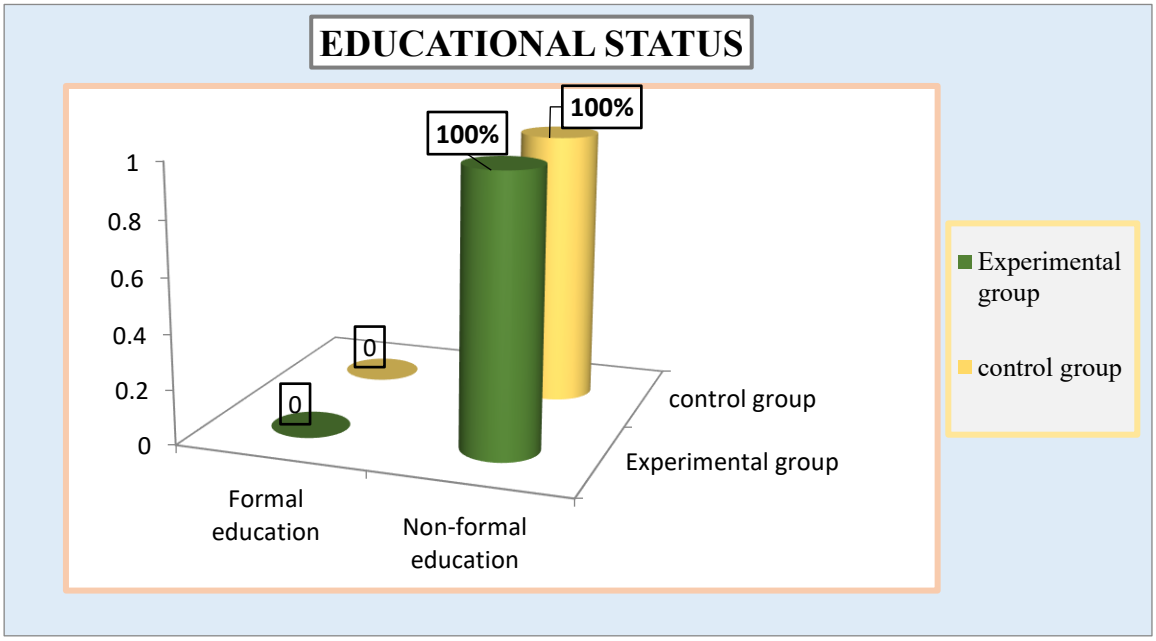
Fig(6)- Bar diagram depicts the percentage of study participants according to gender

Table 06 and figure 06 describes the gender in experimental group majority 69% of the study samples were females and 31% of them were males. And in control group majority 58% of the study samples were females and 42% of them were males.

3. EDUCATIONAL STAUS

Table (7) : Distribution of Education status in terms of frequency and percentage both experimental and control group

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Educational status				
Formal education	0	0	0	0
No-Formal education	45	**100**	45	**100**



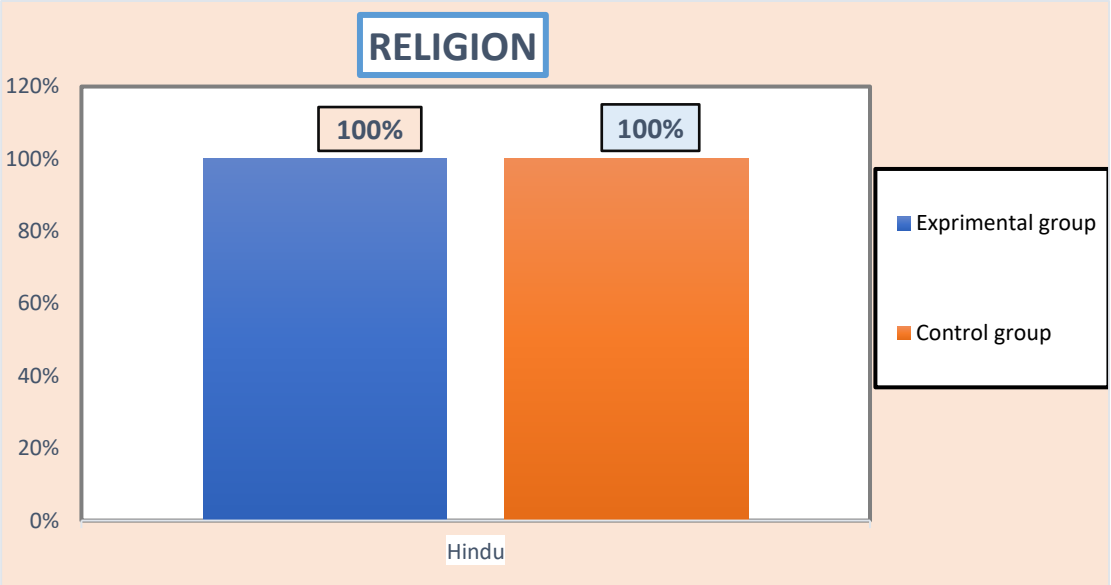
Fig(7)- Bar diagram depicts the percentage of study participants according to Education status.

Table 11 and figure 11 illustrate, to Education status 100% of study samples belongs to Non-formal education in both experimental group and control group.

4. RELIGION

Table (8) : Distribution of Religion in terms of frequency and percentage both experimental and control group

Socio Demographic variables	Experimental group(n=45)		Control group(n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Religion				
Hindu	45	**100**	45	**100**



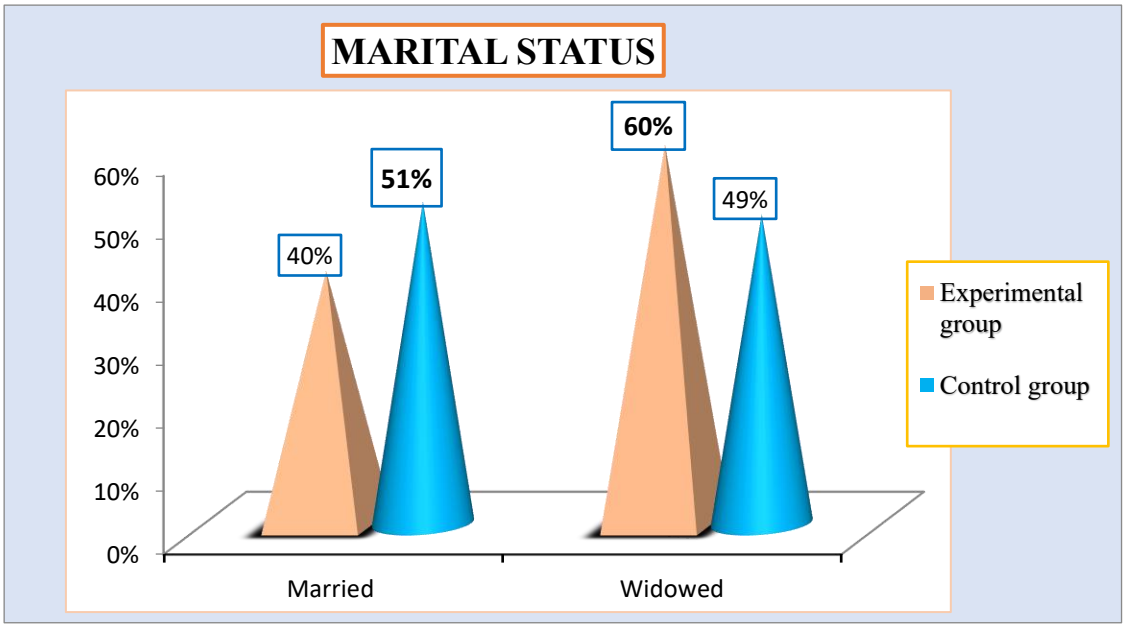
Fig(8)- Bar diagram depicts the percentage of study participants according to Religion .

Table 08 and figure 08 describes As Religion 100% of study samples belongs to Hindu in both experimental group and control group.

5. MARITAL STATUS

Table (9) : Distribution of Marital status in terms of frequency and percentage both experimental and control group.

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Marital status				
Married	18	40	23	**51**
Widowed	27	**60**	22	49



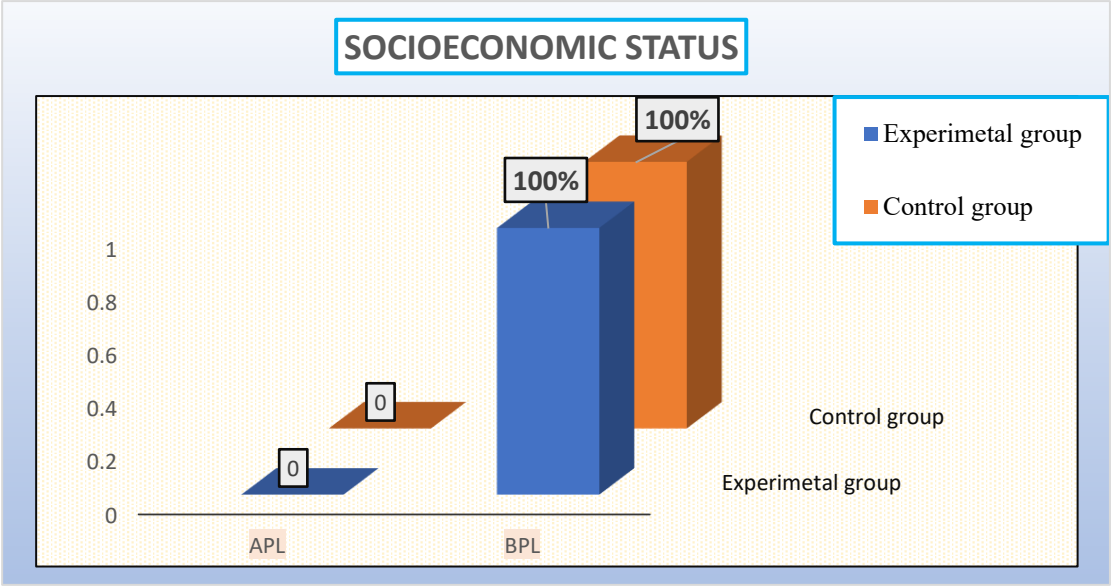
Fig(9)- Bar diagram depicts the percentage of study participants according to Marital status.

Table 09 and figure 09 represent the Marital status in Experimental group Majority 60% study sample are widowed and 40% study samples belongs to Married and in Control group Majority 51% study sample are Married and 49% study samples belongs to Widowed.

6. SOCIOECONOMIC STATUS

Table (10) :- Distribution of Socioeconomic status in terms of frequency and percentage both experimental and control group.

Socio Demographic variables	Experimental group(n=45)		Control group(n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Socioeconomic status				
Above poverty level	0	0	0	0
Below poverty level	45	**100**	45	**100**



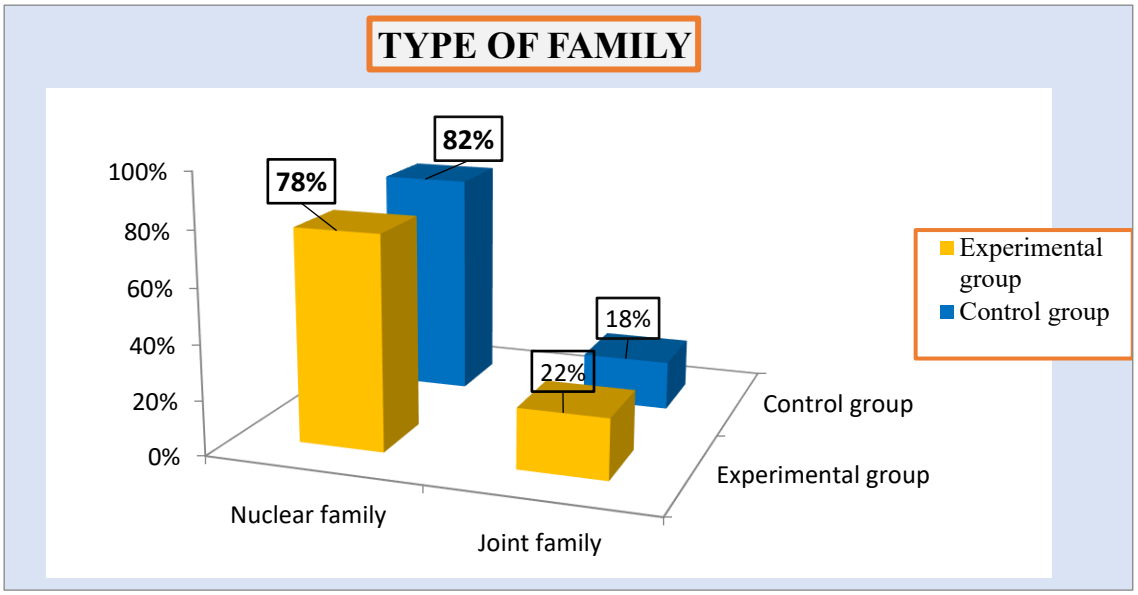
Fig(10)- Bar diagram depicts the percentage of study participants according to Socioeconomic status.

Table 10 and figure 10 describes to socio economic status 100% of study samples belongs to Below Poverty level Status in both Experimental and Control group.

7. TYPE OF FAMILY

Table (11) : -Distribution of type of family in terms of frequency and percentage both experimental and control group.

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Type of family				
Nuclear	35	**78**	37	**82**
Joint Family	10	22	08	18



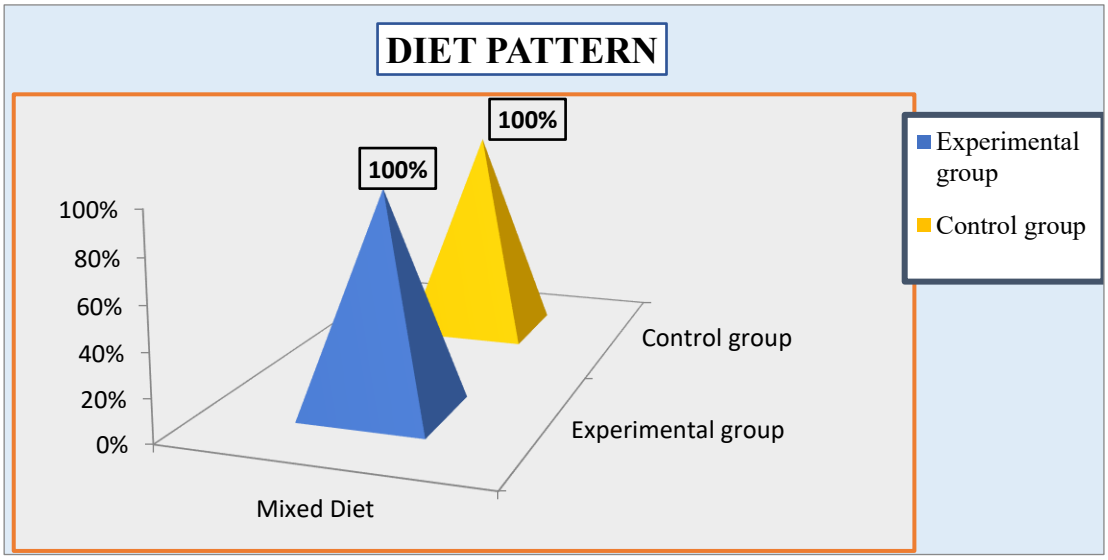
Fig(11)- Bar diagram depicts the percentage of study participants according to Type of family.

Table 11 and figure 11 represent With regarding to Type of family in Experimental group majority 78% study sample belongs to Nuclear family , 22% belongs to joint family and in Control group majority 82% study sample belongs to Nuclear family , 18% belongs to joint family.

8. DIET

Table (12) :- Distribution of Diet in terms of frequency and percentage both experimental and control group.

Socio Demographic variables	Experimental group(n=45)		Control group(n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Diet				
Mixed Diet	45	**100**	45	**100**



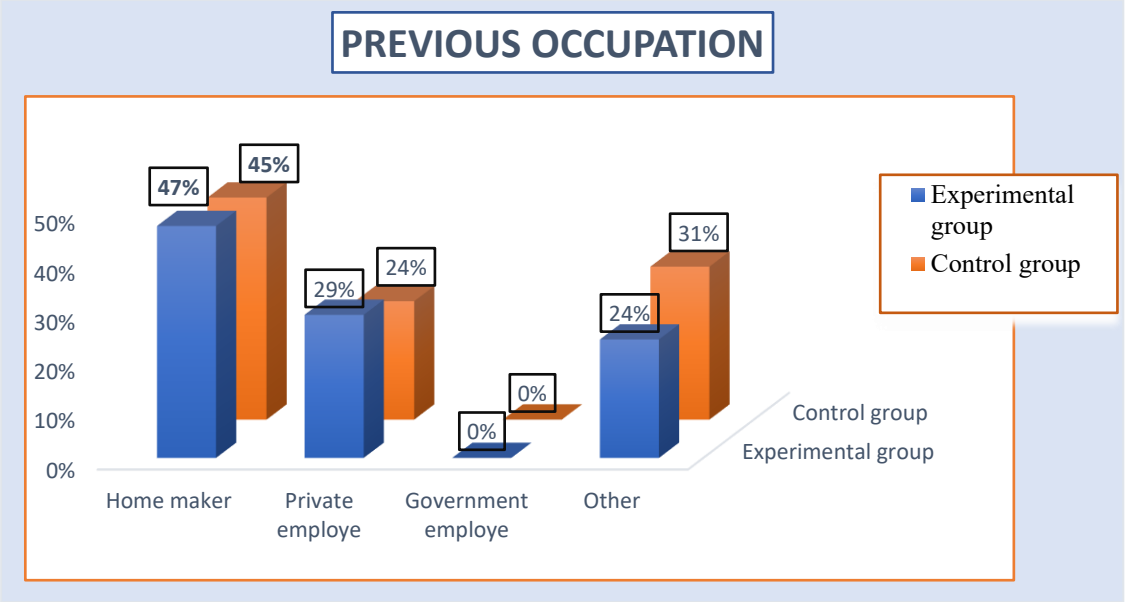
Fig(12)- Bar diagram depicts the percentage of study participants according to diet pattern.

Table 12 and figure 12 shows As Concerning to Diet patter 100% of study samples belongs to mixed diet in both Experimental and Control group.

9. PREVIOUS OCCUPATION

Table(13) :- Distribution of Previous occupation in terms of frequency and percentage both experimental and control group.

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Previous Occupation				
Home marker	21	**47**	20	**45**
Private employ	13	29	11	24
Government employ	0	00	0	00
Other	11	24	14	31



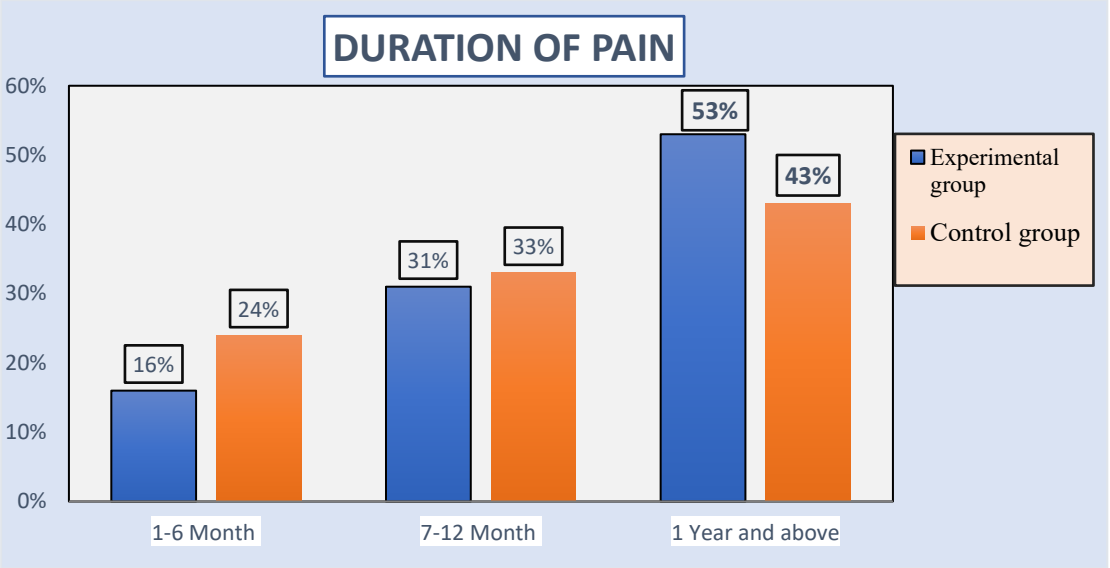
Fig(13)- Bar diagram depicts the percentage of study participants according to Previous occupation.

Table 13 and figure 13 depict regarding to previous Occupation in Experimental group Majority 47% belongs to home makers and 29% belongs to private employe , 24% belong to the other occupation and in Control group Majority 45% belongs to home makers and 31% belongs to other occupation , 24% belong to the private employe.

10. DURATION OF PAIN

Table(14) : - Distribution of Duration of pain in terms of frequency and percentage both experimental and control group.

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Duration of pain				
1-6 Month	07	16	11	24
7-12Month	14	31	15	33
1 Year and above	24	**53**	19	**43**



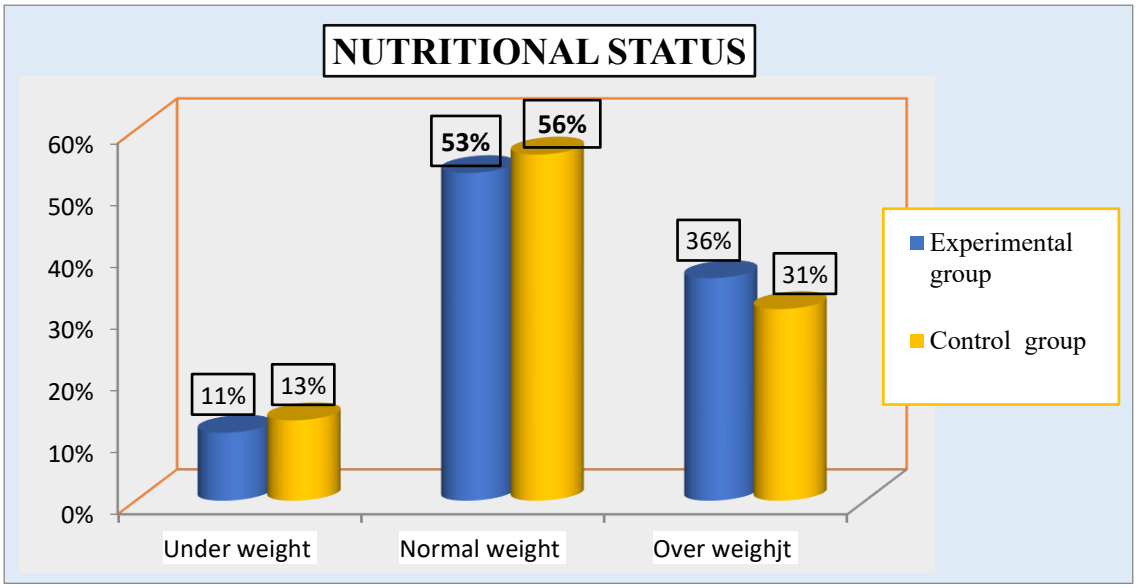
Fig(14)- Bar diagram depicts the percentage of study participants according to Duration of pain.

Table 14 and figure 14 represent With regards to duration of pain in experimental group majority 53% of study sample duration of pain belongs to >1 year , 31% belongs to 7-12 Months duration of pain and 16% belongs to 1-6 Month duration of pain and in Control group majority 43% of study sample duration of pain belongs to >1 year , 33% belongs to 7-12 Months duration of pain and 24% belongs to 1-6 Month duration of pain.

11. NUTRITIONAL STATUS:

Table (15):- Distribution of Nutritional status in terms of frequency and percentage both Experimental and Control group.

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Nutritional status				
Under weight	05	11	06	13
Normal weight	24	**53**	25	**56**
Over weight	16	36	14	31



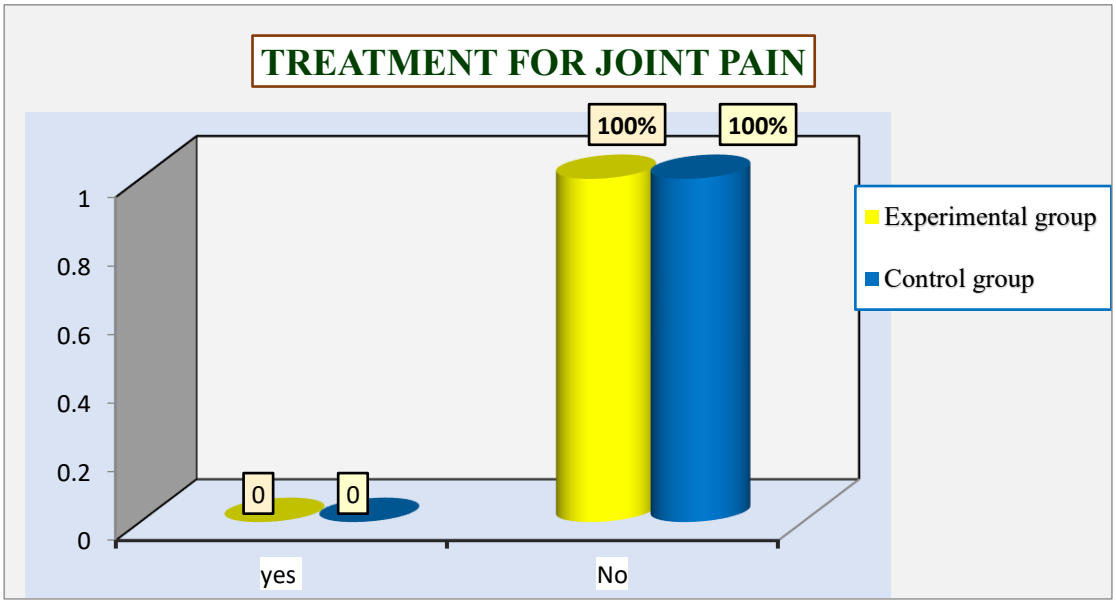
Fig(15)- Bar diagram depicts the percentage of study participants according to Nutritional status.

Table 15 and figure 15 reveals With Regarding to Nutritional status in Experimental group Majority 53% belongs to Normal weight, 36% of study sample belongs to Overweight and 11% of study sample belongs to underweight and in Control group Majority 56% belongs to Normal weight, 31% of study sample belongs to Overweight and 13% of study sample belongs to underweight.

12.TREATMENT FOR JOINT PAIN:

Table (16) : Distribution of Treatment for joint pain in terms of frequency and percentage both Experimental and Control group.

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Treatment for joint pain				
Yes,	0	0	0	0
No	45	**100**	45	**100**



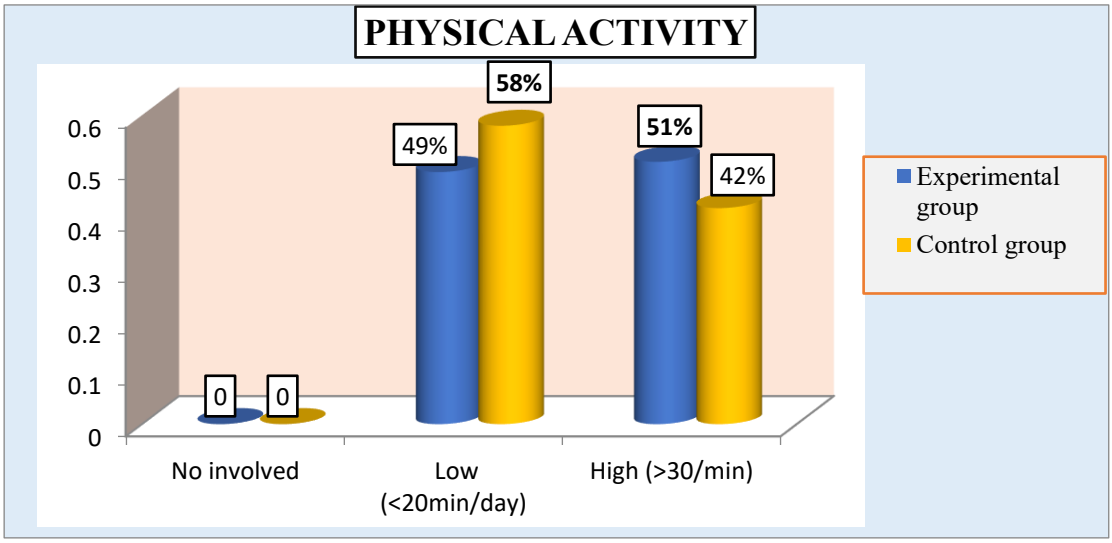
Fig(16)- Bar diagram depicts the percentage of study participants according to Treatment for joint pain.

Table 16 and figure 16 reveals As Concerning to Treatment for joint pain in both Experimental group and control group study sample were not undergoing for any treatment 100% were belong no treatment group.

13. PHYSICAL ACTIVITY

Table (17) : - Distribution of physical activity in terms of frequency and percentage both Experimental and Control group.

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Physical activities				
No involved	0	0	0	**0**
Low (less than 20Min/day)	22	**49**	26	**58**
High (More than 30Min/day)	23	51	19	42



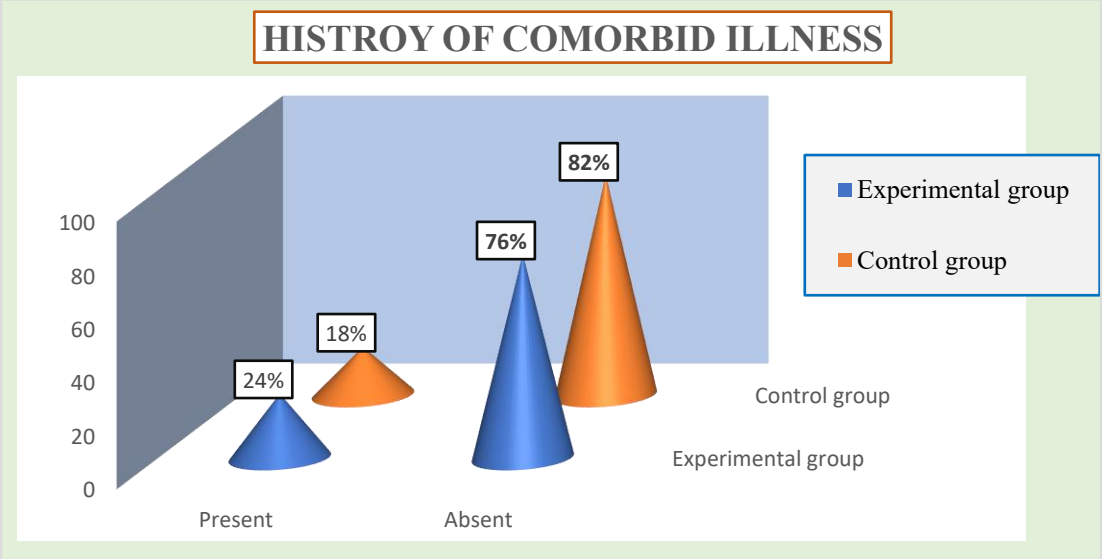
Fig(17)- Bar diagram depicts the percentage of study participants according to Treatment for joint pain.

Table 17 and figure 17 depicts With Regarding to Physical activity In experimental group majority 51% of study sample belongs to High level of physical activity (>30min/day) and 49% of study sample belongs to Low physical activity(<20min /day) and 0% of study sample belongs to No involvement. And majority 58% of study sample belongs to Low physical activity(<20min/day),42% study sample belongs to High level of physical activity (>30min/day) and 0% of study sample belongs to No involvement In Control group.

14. HISTORY OF COMORBID ILLNESS

Table(18) :- Distribution of history of comorbid illness in terms of frequency and percentage both Experimental and Control group.

Socio Demographic variables	Experimental group(n=45)		Control group (n=45)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
History of comorbid Illness				
Present	11	24	08	18
Absent	34	**76**	37	**82**



Fig(18)- Bar diagram depicts the percentage of study participants according to history of comorbid illness.

Table 18 and figure 18 illustrate With Regarding to history of comorbid illness in Experimental group Majority 76% of study sample belongs to Absent of comorbid illness and 24% of study sample belongs to Present With conditions like Diabetics ,hypertension ,CVA, Asthma and in control group Majority 82% of study sample belongs to Absent of comorbid illness and 18% of study sample belongs to Present With conditions like Diabetics ,hypertension ,Asthma.

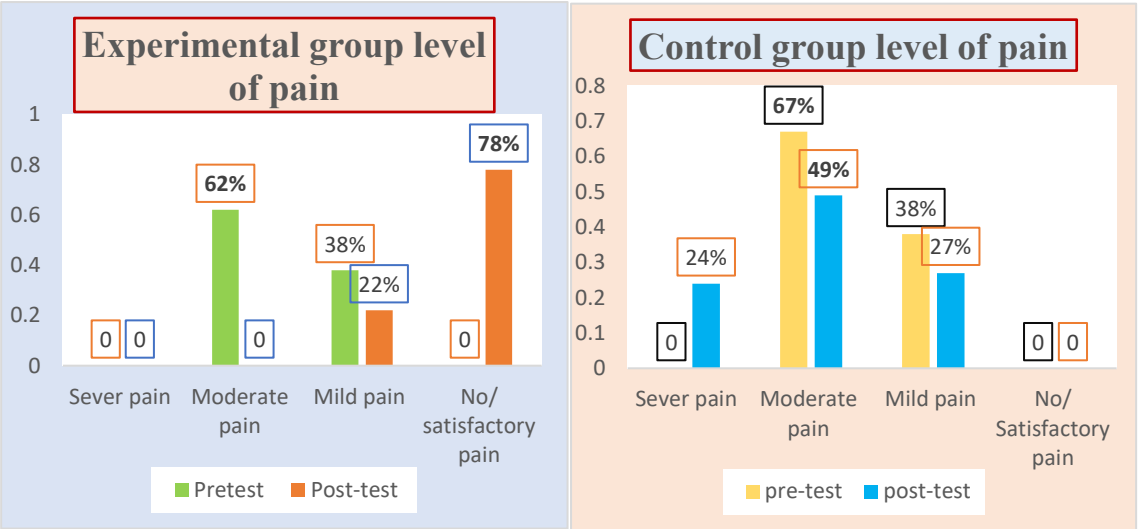
Table (19) :- Distribution of number of comorbid illnesses in Experimental and Control group.

Comorbid illness found	Experimental group	Control group
Diabetics (DM)	05 Clients	04 Clients
Hypertension (HTN)	02 Clients	01 Clients
DM+HTN	01 Clients	03 Clients
Asthma	01 Clients	01 Clients
Cardio-vascular accident	01 Clients	00 Clients

SECTION B : This section will be deals with the data pertaining to first objective of the study.

Table (20) – Frequency and percentage distribution of pre& post-test level of knee joint pain using standardized Oxford knee score scale in the Experimental group and Control group. **N=90**

OKS Scale pain Gradings	Level of Knee joint Pain	Experimental group(n=45)				Control group(n=45)			
		Pre-test		Post-test		Pre-test		Post-test	
		f	%	f	%	f	%	f	%
0-19 (Poor Garding)	Sever pain	0	0	0	0	0	0	11	24
20-29 (Moderate grading)	Moderate pain	28	**62**	0	0	30	**67**	22	**49**
30-39 (Good grading)	Mild pain	17	38	10	22	15	38	12	27
40-49 (Excellent grading)	No/satisf actory pain	0	0	35	**78**	0	0	0	0



Fig(19)- Bar diagram depicts the pretest and posttest percentage of study participants according to level of knee joint pain in Experimental and Control group

Table (20) and figure (19); displays the frequency and percentage distribution of knee joint pain levels before and after the intervention in both the experimental and control groups for this study. As inclusion criteria, the researcher was not involved in the severe and satisfactory pain level samples in to this study.

Experimental group: The pretest showed that the majority of participants (62%) study sample are having a moderate pain level, while 36% had mild pain. Followed by the post-test, there is a marked improvement after the intervention. 78% of participants reported satisfactory pain levels, 22% had mild pain, and there was no moderate or severe pain in the post-test.

Control Group: In the pre-test, the majority of samples (67%) had moderate pain, and 33% of samples had a mild pain level. In the post-test, 49% continued to experience moderate pain, 27% had mild pain, and 24% of samples had severe pain. And there was no satisfactory pain.

So, the Epsom salt hot water application in the experimental group significantly decreased the level of knee joint pain. In contrast, the control group showed no improvement and even deterioration in some cases. So, this indicates the interventions are effective.

SECTION:C.

Table (21):- To Evaluate the Effectiveness of Epsom salt hot water application on Elderly people with in the group.

N=90

Group	EXPERIMENTAL GROUP(n=45)				CONTROL GROUP (n=45)			
	Mean ± SD	**Enhancement**	**Paired 't' value**	**P value**	**Mean ± SD**	**Enhancement**	**Paired 't' value**	**P value, Inference**
Pre-test	26.7±4.60	9.8	11.346	.001 **SS***	27.6 ± 4.23	2.1	1.684	.099 NS*
Post-test	36.5±4.66				25.5 ± 7.93			
Statistically significant at 0.05 level, t tab value= ±2.015, df=44.								

Note:- SD- Standard deviation, SS*- statistically significant, NS*- Not significant

Table 21 illustrate the effectiveness of Epsom salt hot water application on knee joint pain among the Elderly; there was a significant improvement between the pretest and post-test mean scores of experimental group and control groups. The pretest and posttest enhancement of mean and standard deviation of experimental group is 9.8. with regards to control group 2.1, and the paired t test values with comparison of mean experimental group scores showed that **11.346** and **1.684** for control group respectively and in experimental group found to be statistically significant at $p<0.05$ with degree of freedom at 44.

Its evidence that, Epsom salt hot water application was effective in reducing of knee joint pain among the elderly people hence **H_1 is accepted.**

SECTION: C.

Table (22):- Comparison of post-test level of knee joint pain among the elderly people between the groups. **N=90**

Group	Experimental group (n=45)	Control group n (=45)	MD	Unpaired 't' value	P value Inference
	Mean ± SD				
Pre-test	26.6 ± 4.56	27.6± 4.96	1	1.057	.294 NS
Post-test	36.2 ±4.26	25.5 ±8.01	10.7	7.610	.001 **SS****
Statistically significant at 0.05 level, t tab value= ±1.987, df=88.					

Note:- SD- Standard deviation, MD-Mean difference, SS*- statistically significant, NS*- Not significant.

The above table(22) represent that comparison of mean value between experimental group and control group . the mean pretest score of experimental group was 26.6 with SD 4.56 and in control group mean score is 27.6 with SD of 4.96 , MD is 01 the unpaired t value in 1.057 with P value of .294, which is greater than the standard level of significant (P<0.05). this indicate that three was no statistically significant difference in knee joint pain levels in both the groups during the pre-test. With regarding the posttest mean score of experimental groups was 36.2 with SD 4.26 , in control group mean score is 25.5 with SD 8.01 with MD of 10.7 , the unpaired t test value is 7.610 with p value of <0.001 which lesser 0.005 (p<0.005) which is **statistically significant** , indicating that Epsom salt hot water application is effective in reducing of knee joint pain among the elderly in experimental group compared to control group.

Hence the above discussion concludes that, there was a significant difference in the knee joint pain level of Elderly people hence the stated Research hypotheses **H_1 is accepted,** fount to be true indicating there is a significant difference on knee joint before and after the Epsom salt hot water application in experimental group.

SECTION: D

This Section deals with Association between Knee joint pain with selected Socio – demographic variables .

Table (23):- Association between posttest score of Knee joint pain with Selected Socio-demographic variables in Experimental group.

EXPERIMENTAL GROUP n=45

Sl. No.	Variables	Below Median < 38	Above Median > 38	Chi square (x^2)	df	P value (0.05)	Inference
1	**Age (in Years)**						
	60-70	22	11	4.822	1	.028	**SS*** at $p < .05$.
	71-80	05	07				
2	**Gender**						
	Male	14	06	4.01	1	.045	**SS*** at $p < .05$.
	Female	10	15				
3.	**Educational status**						
	No-Formal education	24	21	-	-	-	-
4.	**Religion**						
	Hindu	24	21	-	-	-	-
5.	**Marital status**						
	Married	08	10	.952	1	.329	NS at p < .05.
	Widowed	16	11				
6.	**Socioeconomic status**						
	Above poverty level	0	0	-	-	-	-
	Below poverty level	24	21				
7.	**Type of family**						
	Nuclear	17	16	.621	1	.431	NS at p < .05.
	Joint Family	**7**	5				
8.	**Diet**						
	Mixed Diet	24	21	-	-	-	-

9.	**Previous Occupation**						
	Home marker	15	05	6.13	2	.046	**SS*** at $p < .05$.
	Private Employee	05	10				
	Other	06	04				
10.	**Duration of pain**						
	1-6 Month	05	06	5.204	2	.074	NS at p < .05.
	7-12Month	06	10				
	1 Year and above	10	08				
11.	**Nutritional status**						
	Under five	06	05	6.81	2	.033	**SS*** at $p < .05$.
	Normal weight	10	06				
	Over weight	8	10				
12	**Treatment for joint pain**						
	Yes,	0	0	-	-	-	-
	No	24	21				
13	**Physical activities**						
	Low(less than 20Min/day)	13	9	.573	2	.449	NS at p < .05.
	High(More than 30Min/day)	11	12				
14	**History of comorbid Illness**						
	Present	05	06	.363	1	.547	NS at p < .05.
	Absent	18	16				
Note: - P<0.05, NS-Not significant, SS-statistically significant, df-degree of freedom, 1 (3.841), 2df=5.99.							

Note :- Table (23) presents a 1:1 comparison of selected sociodemographic variable However, chi-square and fishers test could not be performed for variables lil Education status, religion , socioeconomic status, diet, treatment for joint pain due low cell frequencies and one variable.

Table (23) Reveals that association between the post test score on level of knee joint pain and the selected socio demographic variables of Elderly people in Experimental group , which shows that the computed chi-square for the Age was 4.822 with df(1) is **statistically significant** at $p<0.05$, Gender with Chi square value (4.01) and df (1) which is **statistically significant** at p value (.045), Previous occupation with chi-square values of 6.13 with df (2) and p value is .046 with is **statistically significant** at $p<0.05$, the chi-square value for nutritional status is 6.81 with df (2) is **statistically significant** at $p<0.05$. However, the other Socio- Demographic variables , such as Marital status , x^2 value .952 df(1), Type of family x^2value .621, df(1), Duration of pain x^2 value 5.204, df(2), Nutritional status x^2 value 6.81 df(2) , physical activities x^2 value .573, df(2), history of comorbid illness x^2 value 363, df (1) were **Not statistically significant** associated with post -test score because the computed value chi-square value was less than the p value at $p<0.05$.

The study findings reveled that , there is a substantial association between level of knee joint pain among the elderly people with socio- demographic variables in Experimental group. Hence the stated research hypotheses**(H_2) are accepted.**

SECTION: D

Table (24):-Association between post test scores of Knee joint pain with Selected Socio-demographic variables in Control group

CONTROL GROUP n=45

Sl. No.	Variables	Below Median < 26	Above Median > 26	Chi square (x^2)	df	P value (0.05)	Inference
1	**Age (in Years)**						
	60-70	20	10	8.72	1	.003	**SS***at p<.05.
	71-80	05	10				
2	**Gender**						
	Male	08	11	1.067	1	.786	NS at p<.05.
	Female	15	11				
3.	**Educational status**						
	No-Formal education	23	22	-	-	-	-
4.	**Religion**						
	Hindu	23	22	-	-	-	-
5.	**Marital status**						
	Married	13	10	.551	1	.455	NS at p<.05.
	Widowed	10	12				
6.	**Socioeconomic status**						
	Above poverty level	0	0	-	-	-	-
	Below poverty level	23	21				
7.	**Type of family**						
	Nuclear	18	18	.089	1	.766	NS at p<.05.
	Joint Family	05	04				
8.	**Diet**						
	Mixed Diet	23	22	-	-	-	-

9.	**Previous Occupation**						
	Home marker	11	09	2.690	2	.442	NS at p<.05.
	Private Employee	07	04				
	Other	05	09				
10.	**Duration of pain**						
	1-6 Month	05	06	.188	2	.910	NS at p<.05.
	7-12Month	08	07				
	1 Year and above	10	09				
11.	**Nutritional status**						
	Under weight	06	05	.018	2	.991	NS at p<.05.
	Normal weight	10	10				
	Over weight	07	07				
12	**Treatment for joint pain**						
	Yes,	0	0	-	-	-	-
	No	23	22				
13	**Physical activities**						
	Low(less than 20Min/day)	12	14	.606	1	0.44	NS at p<.05.
	High(More than 30Min/day)	11	08				
14	**History of comorbid Illness**						
	Present	04	04	.005	1	.945	NS at p<.05.
	Absent	19	18				
Note:-P<0.05, NSS-Not Statistically significant, SS-statistically significant, df-degree of freedom,1(3.841). df 2(5.99).							

Note :- Table (24) presents a 1:1 comparison of selected sociodemographic variable However, chi-square and fishers test could not be performed for variables like Educatic status, religion , socioeconomic status, diet, treatment for joint pain due to low ce frequencies and one variable.

Table (24) Indicates the Association between the Post-test score on level of Knee joint pain and selected Socio demographic variables among the elderly people in Control group, which shows that the computed chi-square value for the Age was 8.72 df (1) with is **statistically significant** at P <0.05. However the other socio-demographic variables such as Gender x^2 value 1.067 , df (1), Marital status x^2vaule .551 df (1), Type of family x^2value .089 df(1) , Previous occupation x^2value 2.690 df (2), Duration of pain x^2value .188 df (2), Nutritional status x^2 .018 df (2), Physical activities x^2 .606 df (1), History of comorbid illness x^2 value 0.005 df (1) were **Not significant associated** with the post-test level knee pain score because the computed chi-square value was less than the p value at < 0.05.

The study findings reveled that , there is no a substantial association between level of Knee joint pain among the Elderly people with Socio- demographic variables in Control group .

SUMMARY

This chapter deals with the data analysis and interpretation had dealt with description of Socio-demographic variables of Elderly people's level of Knee joint pain in pretest and posttest and comparison and association between the level of Knee joint pain and selected Socio demographic variables.

CHAPTER-VII

DISCUSSION

CHAPTER-VII

DISCUSSION

Joint diseases affect millions of people throughout the world , causing pain and disability with great impact on individuals and on society as a whole . osteoarthritis is the most common joint disease in the near future and is projected to rank second for women and fourth for men in the developed countries in terms of years lived with disability. Men are more often affected than women before the age of 50. Women are affected twice as often as men after the age of 50. OA is most commonly seen in clinical practice usually involving one or two knee joints. Although there is no known cure for most forms of arthritis, and treatment deigned for individual patient can reduce or eliminate symptoms and limit functional impairment. The goals of contemporary management of arthritis extend beyond pain control to the enhancement of patient's functional status and health related quality of life.[56]

A True Experimental two group pretest, posttest design study was conducted to evaluate the Effectiveness of Epsom salt hot water application on knee joint pain among the elderly people at selected community area, Kolar. The study was conducted among the Elderly people who are residing villages under the DRS Primary Health Centre by using probability simple random sampling technique 2 villages and 90 samples (each group 45) Elderly people were selected based on the inclusion criteria. Whose level of knee joint pain was assessed before and after the study interventions. The results are discussed as per the objectives and hypothesis of the study.

THE OBJECTIVES OF THE STUDY ARE:-

1. To Assess level of knee joint pain among Elderly in both the Experimental and Control group using Standardized Oxford knee score scale.
2. To determine the Effectiveness of Epsom salt hot water application on Knee joint pain among elderly by comparing pretest and posttest scores of Experimental & Control groups.
3. To find the Association between the levels of Knee joint pain and selected Socio-demographic variables.

RESEARCH HYPOTHESES

H_1: There will be a significant difference on Knee joint pain scores among Elderly people before and after Epsom salt hot water application.

H_2: There will be a significant Association between level of Knee joint pain and Socio-demographic variables.

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

- Socio demographic variables of Elderly people in Experimental group and Control group.
- A Pre and Posttest level of Knee joint pain among the Elderly people in both groups.
- Evaluate the Effectiveness of Epsom salt hot water application on Elderly people.
- Association of Socio-demographic variables of Elderly people with level of Knee joint pain.

Socio demographic variables of Elderly people in Experimental group and Control group.

1. **AGE :**

With regards to Age in Experimental group majority 47% of the study sample were between the age group of 60-65 years and 33% samples belongs to the age group of 66-70 years , 13% belongs to 71-80 years and 07% samples in the age group of 76-80 years. In Control group majority 40% of the study sample were between the age group of 60-65 years and 27% samples belongs to the age group of 66-70 years , 22% belongs to 71-80 years and 11% samples in the age group of 76-80 years.

2. **GENDER :**

With regards to the gender in experimental group majority 69% of the study samples were females and 31% of them were males. And in control group majority 58% of the study samples were females and 42% of them were males.

3. **EDUCATIONAL STATUS:**

As concerning to Education status 100% of study samples belongs to Non-formal education in both experimental group and control group.

4. **RELIGION:**

As concerning to Religion 100% of study samples belongs to Hindu in both experimental group and control group.

5. **MARITAL STATUS:**

As regards to Marital status in Experimental group Majority 60% study sample are widowed and 40% study samples belongs to Married and in Control group Majority 51% study sample are Married and 49% study samples belongs to Widowed.

6. SOCIOECONOMIC STATUS :

As Concerning to socio economic status 100% of study samples belongs to Below Poverty level Status in both Experimental and Control group.

7. TYPE OF FAMILY:

With regarding to Type of family in Experimental group majority 78% study sample belongs to Nuclear family **,** 22% belongs to joint family

In Control group majority 82% study sample belongs to Nuclear family **,** 18% belongs to joint family.

8. DIET

As Concerning to Diet patter 100% of study samples belongs to mixed diet in both Experimental and Control group.

9. PREVIOUS OCCUPATION:

With regarding to previous Occupation in Experimental group Majority 47% belongs to home makers and 29% belongs to private employe , 24% belong to the other occupation.

In Control group Majority 45% belongs to home makers and 31% belongs to other occupation , 24% belong to the private employe.

10. DURATION OF PAIN:

With regards to duration of pain in experimental group majority 53% of study sample duration of pain belongs to >1 year , 31% belongs to 7-12 Months duration of pain and 16% belongs to 1-6 Month duration of pain.

In Control group majority 43% of study sample duration of pain belongs to >1 year , 33% belongs to 7-12 Months duration of pain and 24% belongs to 1-6 Month duration of pain.

11. NUTRITIONAL STATUS:

With Regarding to Nutritional status in Experimental group Majority 53% belongs to Normal weight, 36% of study sample belongs to Overweight and 11% of study sample belongs to underweight

In Control group Majority 56% belongs to Normal weight, 31% of study sample belongs to Overweight and 13% of study sample belongs to underweight.

12. TREATMENT FOR JOINT PAIN:

As Concerning to Treatment for joint pain in both Experimental group and control group study sample were not undergoing for any treatment 100% were belong no treatment group.

13. PHYSICAL ACTIVITY:

With Regarding to Physical activity In experimental group majority 51% of study sample belongs to High level of physical activity (>30min/day) and 49% of study sample belongs to Low physical activity(<20min /day) and 0% of study sample belongs to No involvement.

In control group majority 58% of study sample belongs to Low physical. activity(<20min/day),42% study sample belongs to High level of physical activity (>30min/day) and 0% of study sample belongs to No involvement In Control group.

14. HISTORY OF COMORBID ILLNESS:

With Regarding to history of comorbid illness in Experimental group Majority 76% of study sample belongs to Absent of comorbid illness and 24% of study sample belongs to Present With conditions like Diabetics ,hypertension ,CVA, Asthma In this group 05 Diabetic cases , 02 Hypertension, DM with HTN 03 cases , and 01 Asthma cases been found in this group.

In Control group Majority 82% of study sample belongs to Absent of comorbid illness and 18% of study sample belongs to Present With conditions like Diabetics ,hypertension ,Asthma. In this group comorbid illness found 04 Diabetics , 01 Hypertension cases , DM with HTN , 01 Asthma cases , 01 CVA cases.

The present study was supported by Similar A Comparative study Conducted among the senior citizen in Residing selected Slum Areas of PCMC. With a tittle of the study A study to assess the effect of hot water application with Epsom salt versus Plain Water application to reduce knee joint pain among senior citizen in residing Selected Slum Arears of PCMC. Were it consisting of Socio-demographic variables like age, gender, education occupation, monthly income, type of diet, how long the have you been diagnosed with knee joint pain, do you perform any exercise.[56]

A Pre and Posttest Level of Knee joint pain among the Elderly people in both groups.

Which delays with frequency and percentage distribution of knee joint pain levels before and after the intervention in both the Experimental and Control groups for this study.

Hence the results of the study revealed as Mentioned below.

Experimental group: The **pretest** showed that the majority of participants **(62%)** study samples have **moderate pain level,** while 36% had mild pain. Followed by the **post-test,** there is a marked improvement after the intervention. **78%** of participants reported **satisfactory pain levels**, 22% had mild pain, and there was no moderate or severe pain in the post-test.

Control Group: In the pre-test, the majority of samples **(67%) had moderate pain**, and 33% of samples had a mild pain level. In the post-test, **49% continued to expressed moderate pain**, 27% had mild pain, and 24% of samples had severe pain. And there was no satisfactory pain.

Similarly, A Quasi experimental study was conducted to assess the effectiveness of hot water application with Epsom salt and hot water application on joint pain among adults suffering from arthritis, at New Delhi. Using same Oxford Knee Score scale. data revealed that in pre- test, majority of 18 (60%) had moderate pain, 7 (23.33%) had mild pain and only 5 (16.67%) had severe pain. Whereas in post-test majority 16 (53.33%) had no pain, 11 (36.67%) had mild pain and 3 (10%) had moderate pain. In experimental group 2, the Data revealed that in pre- test, majority of 15 (50%) had moderate pain, 12 (40%) had mild pain and only 3 (10%) had severe pain. Whereas in post -test majority 13 (43.33%) had moderate pain, 9 (30%) had no pain, and 7(23.33%) had mild pain and 1 (3.33%) had severe pain.[57]

Hence the above discussion conclude that Epson salt water application is Effectively reducing the Knee joint pain among the elderly in Experimental group with markable results, however the In Control group the was no any changes.

Evaluate the Effectiveness of Epsom salt hot water application on Elderly people.

To check the effectiveness within the group paired 't' test and between the group Unpaired ' t' has been carried out

Results of paired 't' test is The pretest and posttest enhancement of mean and standard deviation of experimental group is 9.8. with regards to control group 2.1, and the paired t test values with comparison of mean experimental group scores showed that

11.346 and 1.684 for control group respectively and in experimental group found to be statistically significant at p<0.05with degree of freedom at 44. Its evidence that, Epsom salt hot water application was effective in reducing of knee joint pain among the elderly people in experimental group.

Unpaired 't' test results- shows that, comparison of mean value between experimental group and control group, regarding the posttest mean score of experimental group was 36.2 with SD 4.26 , in control group mean score is 25.5 with SD 8.01 with MD of 10.7 , the unpaired t test value is 7.610 with p value of .000 which lesser 0.005 (p>0.005) indicating that Epsom salt hot water application is effective in reducing of knee joint pain among the elderly in experimental group compared to control group.

This finding of the present study supported by A quasi-experimental study to assess the effectiveness of Epsom salt with hot water application on joint pain among the elderly people of selected villages at district Mohali, Punjab . t value was found 2.550 which was significant at 0.05 level of significance in experimental group & control group t value was found 0.961 which was non-significant.[58]

Hence the above discussion concludes that, there was a significant difference in the knee joint pain level of Elderly people hence the stated Research hypotheses H_1 is accepted, fount to be true indicating there is a significant difference on knee joint before and after the Epsom salt hot water application in experimental group.

Association between Knee joint pain score with selected Socio demographic variables .

In experimental group :-

Association between the Post test score on level of knee joint pain and the selected socio demographic variables of Elderly people in Experimental group , which shows that the computed chi-square for the Age was 4.822 with df(1) is **statistically significant** at p<0.05 , Gender with Chi square value (4.01) and df (1) which is **statistically significant** at p value (.045), Previous occupation with chi-square values of 6.13 with df (2) and p value is .046 with is **statistically significant** at p<0.05 , the chi-square value for nutritional status is 6.81 with df (2) is **statistically significant** at p<0.05. However, the other Socio-Demographic variables , such as Marital status , x^2 value .952 df(1), Type of family x^2value .621, df(1), Duration of pain x^2 value 5.204, df(2), Nutritional status x^2 value 6.81 df(2) , physical activities x^2 value .573, df(2), history of comorbid illness x^2 value 363, df (1) were **Not statistically significant** associated with post -test score because the computed value chi-square value was less than the p value at p<0.05.

The study findings reveled that , there is a substantial association between level of knee joint pain among the elderly people with socio- demographic variables in Experimental group. Hence the stated research hypotheses**(H_2) are accepted.**

In Control group:-

Association between the post-test score on level of knee joint pain and selected socio demographic variables among the elderly people in Control group , which shows that the computed chi-square value for the Age was .711 df(1) with is **Not statistically significant** at P <0.05. However the other socio-demographic variables such as Gender x^2 value 1.067 , df (1), Marital status x^2vaule .551 df(1), Type of family x^2value .089 df(1) , Previous occupation x^2value 2.690 df(2), Duration of pain x^2value .188 df(2), Nutritional

status x^2 .018 df(2), Physical activities x^2 .606 df(1), History of comorbid illness x^2 value 0.005 df(1) were **Not significant associated** with the post-test level knee pain score because the computed chi-square value was less than the p value at < 0.05.

The study findings reveled that , there is no a substantial association between level of knee joint pain among the elderly people with socio- demographic variables in control group .

The finding of the present study supported by, A True Experimental study to assess the effectiveness of hot water compress with Epsom salt among elderly women with knee joint pain residing at selected area, Thandalam, Chennai . the association of post test score and socio demographic variables of age and type of diet shows statistically significant at p<0.05 level , the other variables are not significant .[59]

SUMMARY:-

This chapter discusses in detail discuss about the statistical findings regarding demographic variables, assessment of effectiveness of Epsom salt hot water application on knee joint pain among the elderly people and comparison of present study findings with other similar as well as contradicting on similar data , effectiveness of the Epsom salt hot water application and association of socio-demographic variables with level of knee joint pain.

CHAPTER-VIII

CONCLUSION

CHAPTER-VIII

CONCLUSION

This chapter gives a brief of the present study and provides conclusions drawn from the findings, nursing implications, limitations of the study and recommendations for future research. This is the most creative and demanding part of the study.

This study aimed to evaluate the effectiveness of Epsom salt hot water application among Elderly in selected Community Area, Kolar. A True Experimental two group Pre-test and Post-test design is used for the study. The data was collected from 90 Elderly people who are residence in selected community area Kolar.

The Conclusion drawn from the study are as following:

The Elderly people who were residency in selected Community area, Kolar who had Moderate and Mild knee joint pain. Findings of the study in Experimental group showed that majority (21) 47% of the Elderly people who residing in selected community area are age of 60-65years. 31(69%) of the Elders are female .45(100%) of the Elders are not had any formal education. 45(100%) Elderly people are belonging to Hindu religion. 27(60%)study sample are widowed.45(100%) of Elders are belongs to below poverty level.35(78%) Elders are belonging to nuclear family.45(100%) of Elders are in mixed diet pattern. 21 (47%) study samples are home makers. 24(53%) are had 1 year and above of knee joint pain. 24(53%) of the Elders are had normal weight. 45(100%) of the elderly people are not taking any treatment for joint pain. 23(51%) had high (more than 30 Min/day) physical activities. And 34(76%) had absence of comorbid illness.

In Control group showed that majority 18(40%) of the Elderly people who residing in Selected Community area are age of 60-65years. 26(58%) of the Elders are female .45(100%) of the Elders are not had any formal Education. 45(100%) elderly

people are belonging to Hindu religion. 23(51%) study sample are married .45(100%)of Elders are had belongs to below poverty level. 37(82%) Elders are belonging to nuclear family.45(100%) of Elders are in mixed diet pattern. 20 (45%) study samples are home makers. 19(53%) are had Knee joint pain since1 year and above. 25(56%) of the Elders are had normal weight. 45(100%) of the Elderly people are not taking any treatment for joint pain. 26(58%) had Low (less than 20 Min/day) physical activities. And 37(82%) had absence of Comorbid illness.

The conceptual framework adopted for the study is based on General System and adaption theory model, developed by Ludwig Von Bertanffy in 1968, which focus on the four concepts Input, Throughput, Output and Feedback.

Regarding to the **pretest and posttest level of knee joint pain among Elderly people** in both Experimental and control group using standardized Oxford knee score scale.

In Experimental group The pretest showed that the majority of participants **(62%)** study sample are having a moderate pain level and after 15 days of intervention posttest , there is a marked Improvement after the intervention **78%** of participants reported satisfactory pain levels. And **Control Group** In the pre-test, the majority of samples (67%) had moderate pain In the Post-test, 49% continued to Experience moderate pain, 27% had mild pain, and 24% of samples had severe pain.

Regarding Effectiveness of Epsom salt hot water application on Elderly people with in groups. By Comparison of pretest and Posttest level of Knee joint pain among the Elderly people in with in the group shows that there was a significant improvement between the pretest and posttest score level as explained here the pretest and posttest enhancement of mean and standard deviation of Experimental group is 9.8. with regards to Control group 2.1, and the paired 't' test values with comparison of mean

Experimental group scores showed that **11.346** and **1.684** for Control group respectively and in Experimental group found to be statistically significant at p<0.05with degree of freedom at 44. Thus, the stated research hypothesis H1 is accepted . that there is a significant difference on Knee joint pain scores among Elderly people before and after Epsom salt hot water application.

And comparison of mean value between Experimental group and Control group . the mean value between Experimental group and Control group . the mean posttest mean score of Experimental groups was 36.2 with SD 4.26 , in Control group mean score is 25.5 with SD 8.01 with MD of 10.7 , the unpaired 't' test value is 7.610 with p value of .001 which lesser 0.005 (p>0.005) which is **statistically significant** , indicating that Epsom salt hot water application is Effective in reducing of knee joint pain among the Elderly in Experimental group compared to Control group. That there is significant difference in the knee joint level of elderly people hence research hypotheses H1 is accepted.

The obtained x^2 value in Experimental group of age was 4.822, df(1) and x^2 value of gender (4.01) df (1), Previous Occupation 6.13 df (2), x^2 value of Nutritional status 6.81 df (2), **statistically significant at p<0.05.** However, the other Socio-demographic variables, such as x^2 value of Marital status , x^2 value .952 df (1), Type of family x^2value .621, df (1), Duration of pain x^2 value 5.204, df (2), Nutritional status x^2 value 6.81 df (2) , physical activities x^2 value .573, df (2), history of comorbid illness x^2 value 363, df (1) were **Not statistically significant** with the posttest level of knee joint pain scores because the computed chi-square value was less than P value at<0.05.

Thus, the Research hypothesis **(H_2) is accepted** , which states that was a significant association between level of Knee joint pain and selected Socio-demographic variables**.**

The obtained chi-square value in Control group , 8.72 df (1) was **statistically significant** , However the other Socio-demographic variables such as Gender x^2 value 1.067 , df (1), Marital status x^2vaule .551 df (1), Type of family x^2value .089 df (1) , Previous occupation x^2value 2.690 df (2), Duration of pain x^2value .188 df (2), Nutritional status x^2 .018 df (2), Physical activities x^2 .606 df (1), History of comorbid illness x^2 value 0.005 df (1) were **Not significant associated** with the post-test level knee pain score because the computed chi-square value was less than the p value at < 0.05.

The overall study findings revealed that Epsom salt hot water application on Knee joint pain was effective in decreasing of level of knee joint pain among the elderly people.

It's a known fact that as age increases the disability and disease conditions are increases as majority of Elderly having complains of pain like be Knee joint , waist, Etc. were the Epsom salt is Effective and reasonable , no adverse effect as should hence the Epsom salt hot water application was highly accepted by the elderly people.

NURSING IMPLICATIONS

Based on the findings of the study , it has implications in nursing practice, Education , administration and nursing research as a whole for the nursing profession.

IMPLICATIONS

During Age of Elder many aging factors are affecting their life style in that specially muscle skeleton system problems are more such are lower back ache , joint pain , Marjory Knee joint pain hence this study helps to identify the Knee joint pain among the Elders and projecting a positive attitude.

NURSING IMPLICATION

The consequences of the study can be used in the following areas of nursing profession.

NURSING PRACTISES

Nursing professionals working in the hospital as well as in the community set up should educate and provide awareness regarding disease and disability related to aging factor and as regarding importance of early prevention and Control of muscle skeleton problems during aging

Nursing professional plays a key role in enhancing the knowledge on early identification and treatment among the Elders with Knee joint pain and also home care management like Epsom salt hot water Application on mild and moderate level of Knee joint pain among the Elderly people.

NURSING EDUCATION

Education is the base of knowledge. As a nurse educator they are abundant opportunities to educate the individual and care givers on early identification and treatment , home care management of Knee joint pain and also preventive aspect of Knee joint pain and its severity.

The study emphasis on significant of short-term in-service Education problem , Education program for peripheral health workers, nurses , community health workers and for students to educate the family members regarding the management and prevention of complication among the Elderly people.

The student nurses from college of nursing should be encouraged to attend seminars, conference and workshop regarding Elderly care and management of disease in old age.

NURSING ADMINISTRATION

Nurses plays major role in completing the purposes of reducing countries. Knee joint and other muscle skeleton related problems and providing information about Management treatment process .

The nursing administrator can take part in developing protocols, standing orders regarding the health Education program for the family members regarding the management of muscle Skelton problem within the home care level . and also Educating on Service availability for the Elderly in the health Centers.

NURSING RESEARCH

The study helps nursing researcher to develop appropriate health Education tools for Educating the Elderly people and family members regarding to preventive and management of Knee joint pain and other muscle skeleton problems during ageing.

Research in nursing is the need of the hour to improve the health status of nurses. If not only helps the nurses in improving their knowledge but also refine quality of care provided to society.

This study helps nurse researcher to carry out studies scheduled the improvement of health and knowledge of Elders and family member.

More and more research activity can be carried out on the alternative methods and preventive aspects of Knee joint pain and also other muscle skeleton problems.

LIMITATIONS OF THE STUDY

- The study was limited to the Elderly people with age of 60 years and above in selected Community areas, Kolar.
- The study limited to Elderly people who have mild and moderate Knee joint pain.
- The study includes No intervention to the Control group.

RECOMMENDATIONS

- A similar study can be replicated on a large sample in different types of setting.
- A similar study can be done between early Elders and Elders.

SUMMARY:-

This chapter discusses in detail conclusion about the study , results of the study , nursing implications, limitations of the study , Recommendations of the study.

CHAPTER-IX

SUMMARY

CHAPTER-IX

SUMMARY

This chapter presents the summary of discussion , conclusion, and its nursing implications , recommendations.

The present study was conducted to **"Assess the Effectiveness of Epsom salt hot water application on Knee joint pain among the Elderly people at selected Community area Kolar.''**

THE OBJECTIVES OF THE STUDY ARE:-

1. To assess level of Knee joint pain among Elderly in both the Experimental and Control group using Standardized Oxford Knee score scale.
2. To determine the Effectiveness of Epsom salt hot water application on Knee joint pain among Elderly by comparing pretest and posttest scores of Experimental & Control groups.
3. To find the association between the levels of Knee joint pain and selected Socio-demographic variables.

RESEARCH HYPOTHESES

H_1: There will be a significant difference on Knee joint pain scores among Elderly people before and after Epsom salt hot water application.

H_2: There will be a significant association between level of Knee joint pain and Socio-demographic variables.

An Epsom salt hot water application was plan to apply on the knee joint pain among the elderly people based on the researcher review literature and the opinion of experts. And researcher view the Epsom salt hot water application was administrate on the selected elderly people in experimental group 15min a day over a period of 15 days.

A pilot study was conducted in selected two villages under the DRS, Primary health center, Kolar . between 17/02/2025 to 3/03/2025 to find out the feasibility of the selected tool and accessibility of the sample. The effectiveness of Epsom salt hot water application on Knee joint pain among the Elderly people to decide their suitability for the study. The researcher used Simple Random technique with computerized random method to select the sample from the total population.

The pretest was administrated by using Standardized Oxford Knee score scale for both groups followed by interventions of Epsom salt hot water application was given 15 minutes a day for the period of 15 days , posttest was administered by using same tool for both groups for evaluating of on Epsom salt hot water application on Knee joint pain among the Elderly people.

The inferential statistics like paired t test, unpaired t test and x^2 test included to test the research hypotheses at different level of significance and the data obtained were presented in the tabular and graphical form of representation.

SECTION A: Distribution of Socio-demographic variable of elderly people in Experimental and Control group.

The Elderly people who were residency in selected Community area , Kolar who had Moderate and Mild Knee joint pain. Findings of the study in experimental group showed that majority (21) 47% of the Elderly people who residing in selected community area are age of 60-65years. 31(69%) of the Elders are female .45(100%) of the Elders are not had any formal education. 45(100%) Elderly people are belonging to Hindu religion. 27(60%) study sample are widowed.45(100%) of Elders are belongs to below poverty level.35(78%) Elders are belonging to nuclear family.45(100%) of

Elders are in mixed diet pattern. 21 (47%) study samples are home makers. 24(53%) are had 1 year and above of Knee joint pain. 24(53%) of the Elders are had normal weight. 45(100%) of the Elderly people are not taking any treatment for joint pain. 23(51%) had high (more than 30 Min/day) physical activities. and 34(76%) had absence of comorbid illness.

In Control group showed that majority 18(40%) of the Elderly people who residing in selected Community area are age of 60-65years. 26(58%) of the Elders are female .45(100%) of the Elders are not had any formal education. 45(100%) Elderly people are belonging to Hindu religion. 23(51%) study sample are married .45(100%)of Elders are had belongs to below poverty level. 37(82%) Elders are belonging to nuclear family.45(100%) of Elders are in mixed diet pattern. 20 (45%) study samples are home makers. 19(53%) are had knee joint pain since1 year and above. 25(56%) of the elders are had normal weight. 45(100%) of the Elderly people are not taking any treatment for joint pain. 26(58%) had Low (less than 20 Min/day) physical activities. And 37(82%) had absence of comorbid illness.

SECTION B: Pre and posttest score level of knee joint pain among the elderly people .

The findings reveals that the Knee joint pain score level in the pretest showed that the majority of participants **(62%)** study samples have **moderate pain level**, while 36% had mild pain. Followed by the post-test, there is a marked improvement after the intervention. **78%** of participants reported **satisfactory pain levels**, 22% had mild pain, and there was no moderate or severe pain in the post-test in Experimental group.

Control Group: In the pre-test, the majority of samples **(67%) had moderate pain**, and 33% of samples had a mild pain level. In the post-test, **49% continued to expressed moderate pain**, 27% had mild pain, and 24% of samples had severe pain.

And there was no satisfactory pain.

SECTION C: Evaluate the Effectiveness of Epsom salt hot water application on elderly people.

To check the Effectiveness within the group paired 't' test and between the group Unpaired ' t' test has been carried out.

paired 't' test is The pretest and posttest enhancement of mean and standard deviation of Experimental group is 9.8. with regards to Control group 2.1, and the paired t test values with comparison of mean Experimental group scores showed that 11.346 and 1.684 for Control group respectively and in Experimental group found to be statistically significant at $p<0.05$ with degree of freedom at 44. Thus, the stated research hypothesis H_1 is accepted . Which states that there is a significant difference on Knee joint pain scores among Elderly people before and after Epsom salt hot water application.

Unpaired 't' test results shows that, comparison of mean value between Experimental group and Control group, regarding the posttest mean score of Experimental group was 36.2 with SD 4.26 , in Control group mean score is 25.5 with SD 8.01 with MD of 10.7 , the unpaired t test value is 7.610 with p value of .000 which lesser 0.005 ($p>0.005$) indicating that Epsom salt hot water application is effective in reducing of Knee joint pain among the Elderly in Experimental group compared to Control group.

SECTION D: Association between posttest Knee joint pain score with Selected Socio demographic variables.

In Experimental group: The obtained x^2 value in Experimental group of age was 4.822, df (1) and x^2 value of gender (4.01) df (1), *c* previous occupation 6.13 df (2), x^2 value of Nutritional status 6.81 df (2), **statistically significant at p<0.05.** However, the other socio-demographic variables, such as x^2 value of Marital status , x^2 value .952 df (1), Type of family x^2value .621, df (1), Duration of pain x^2 value 5.204, df (2), Nutritional status x^2 value 6.81 df (2) , physical activities x^2 value .573, df (2), history of comorbid illness x^2 value 363, df (1) were **Not statistically significant** with the posttest level of knee joint pain scores because the computed chi-square value was less than P value at<0.05. Thus, the Research hypothesis (H_2) is accepted , which states that was a significant association between level of Knee joint pain and selected Socio-demographic variables**.**

In control group: The obtained chi-square value in Control group , 8.72 df(1) was **statistically significant** , However the other Socio-demographic variables such as Gender x^2 value 1.067 , df (1), Marital status x^2vaule .551 df (1), Type of family x^2value .089 df (1) , Previous occupation x^2value 2.690 df (2), Duration of pain x^2value .188 df (2), Nutritional status x^2 .018 df (2), Physical activities x^2 .606 df (1), History of comorbid illness x^2 value 0.005 df (1) were **Not significant associated** with the post-test level Knee pain score because the computed Chi-square value was less than the p value at < 0.05.

SUMMARY

This chapter explains summary which consist of objectives , hypothesis, major findings of the study.

CHAPTER-X

BIBLIOGRAPHY

CHAPTER-X

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ANNAXURE

ANNAXURE -A

INSTUTIONAL ETHICS COMMITTEE CERTIFICATE

SRI DEVARAJ URS COLLEGE OF NURSING
Tamaka, Kolar-563 103, Karnataka.
(Affiliated to RGUHS, Bangalore and Recognized by KNC, Bangalore & INC, New Delhi)
ISO 9001:2015 Certified& NAAC Accredited
Phone: 9480880802 E-mail: sduconson@yahoo.com, Website: sducon.ac.in

Ref,:No. SDUCON/IEC/ PG-140/ 2023-2024 **Date: 09-05-2024**

From,
The Institutional Ethics Committee
Sri Devaraj Urs College of Nursing,
Tamaka, Kolar-563103

To,
Ms. Bindu Shree
M.Sc Nursing Student,
Community Health Nursing,
SDUCON Tamaka Kolar 563103

This is to certify that the Institutional Ethics Committee of Sri Devaraj Urs College of Nursing, Tamaka, Kolar has examined and unanimously approved M.Sc. (N) Topic: **Effectiveness of Epsom Salt hot water application on Knee Joint Pain among Elderly people at selected Community areas, Kolar** of **Ms Bindu Shree**, M.Sc. (N) under the guidance of **Mrs Vani R,** Assistant Professor, Dept. of Community Health Nursing, Sri Devaraj Urs College of Nursing, Kolar -563103

Member Secretary
MEMBER SECRETARY
ETHICS COMMITTEE
SRI DEVARAJ URS COLLEGE OF NURSING
TAMAKA KOLAR - 563103.

Chairperson
CHAIR PERSON
ETHICS COMMITTEE
SRI DEVARAJ URS COLLEGE OF NURSING
TAMAKA KOLAR - 563103.

ANNAXURE -B

SYNOPSIS REGISTERED CERTIFICATE

Rajiv Gandhi University of Health Sciences, Karnataka
4th 'T' Block, Jayanagar, Bangalore - 560 041

Academic Year: 2023-24

College: Sri Devaraj Urs College of Nursing, Kolar

Status: Registered

Sri Devaraj Urs College of Nursing No. 040 Date. 26/8/25 Tamaka, Kolar 563101

College wise reviewed report

Sl.No	Course Name	Registration Number	Student Name	Title	Guide Name, Designation	Observation of Reviewer	Remarks	Status
1	MSc Nursing in Community Health Nursing	05_N023_00072	BINDUSHREE B	"EFFECTIVENESS OF EPSOM SALT HOT WATER APPLICATION ON KNEE JOINT PAIN AMONG ELDERLY PEOPLE AT SELECTED COMMUNITY AREAS, KOLAR."	VANI.R, ASST.PROF	study is appropriate	Grammatical corrections .	Registered
2	MSc Nursing in Community Health Nursing	05_N023_00069	AJAY KUMAR M	A STUDY TO EVALUATE THE EFFECTIVENESS OF PROTEIN BALL ON NUTRITIONAL STATUS AMONG ANGANAWADI CHILDREN OF SELECTED VILLAGES, DEVARAYA SAMUDRA PHC, KOLAR DISTRICT, KARNATAKA	MALATHI K V, LECTURER	No modification	the study was made related to the topic	Registered

ASSISTANT REGISTRAR

Digitally signed by DR SHANMUKHAPPA
Date: 25-08-2025 16:22:07

DIRECTOR

Principal
Sri Devaraj Urs College of Nursing
Tamaka, Kolar-563103

Downloaded on: 19/08/2025 17:21

Page 1 of 1

ANNAXURE -C

EXPERT OPINONS AND SUGGESTIONS FOR CONTENT

VALIDITY OF RESEARCH TOOL

Name and signature of the Candidate	Ms. BINDUSHREE B
Remarks of the Guide	Need based study
Name and Designation of Guide	Mrs. Vani R Assistant professor Department of CHN S.D.U.C.O.N TAMAKA, KOLAR.
Signature	
Subject Expert Name and Designation	DR. ASHWEEN BILAGI ASSISTANT PROFESSOR AND INCHARGE H.O.D (S.D.U.A.E.R) INTEGRATIVE MEDICINE. Tamaka Kolar
Signature	Head Department of Integrative Medicine Sri Devaraj Urs Academy of Higher Education and Research Tamaka, Kolar-563101, Karnataka, India
Head of the Department	DR. MALATHI.K HOD, Community Health Nursing S.D.U.C.O.N TAMAKA, KOLAR
Signature	Malathi
Remarks of the Principal	Need based Study.
Signature	Principal Sri Devaraj Urs College of Nursing Tamaka, Kolar-563103

ANNAXURE -D

LETTER REQUESTING PERMISIION FOR CONDUCTING RESEARCH STUDY

PERMISSION TO CONDUCT STUDY

Date:- 04/07/2024
Place:- Kolar

From,

Bindu Shree B
I[st] MSc (Nursing)
Sri Devaraj Urs College of Nursing,
Tamaka, Kolar.

TO,

Medical officer
Primary health center
Devarayasamudra , Kolar

TO

Through guide and principal, SDUCON

Respected Madam / Sir,

Subject: Requesting permission to conduct the Pilot study – reg.

With reference to the above as a part of our RGUHS curriculum partial fulfillment of the requirement, I selected mentioned topic for research project. **"Effectiveness of Epsom salt hot water application on knee joint pain among elderly people at selected community areas, Kolar."**

OBJECTIVES OF THE STUDY:

1. To assess level of knee joint pain among elderly in both the experimental and control group using standardized Oxford knee score scale.
2. To determine the effectiveness of Epsom salt hot water application on knee joint pain among elderly by comparing pretest and posttest scores of experimental & control group.
3. To find the association between the levels of knee joint pain and selected demographic variables.

Further I request your good self to permit to gather data from elderly people and to implement the interventions of selected villages under Devarayasamudra, PHC. The information collected from elderly will be kept confidential hence I request you good self Kindly consider and do the needful.

Thanking You,

Yours Faithfully,
Bindushree B

Enclosed:

1. **Ethical clearance letter**
2. **Tools**
   - **A. Sociodemographic Performa**
   - **B. Standardized oxford knee score scale**

Forwarded for the needful approval
04/07/24

Forwarded to Medical officer, PHC, Devarayasamudra, Kolar
To request to permit one student to collect data from elderly residing at villages
06/07/24

ANNAXURE -E

SOCIO-DEMOGRAPHIC VARIBLES & TOOL

DATA COLLECTION TOOL

Instructions to the participant's: kindly answer to all the questions. Give response to the option Which you prefer. Don't leave any questions unanswered. Your answers will be kept confidential. The information Collect will be only for study purpose.

SECTION –A SOCIO-DEMOGRAPHIC VARIABLES

1. **Age (in years) _____**
2. **Gender**
   - **a.** Male
   - b. Female
3. **Educational status/Qualification**
   - a. Formal education
   - b. No formal education
4. **Religion**
   - a. Hindu
   - b. Muslim
   - c. Christian
   - d. Any other specify
5. **Marital status**
   - a. Married
   - b. Unmarried
   - c. Divorce
   - d. Widowed
6. **Socioeconomic status**
   - a. APL
   - b. BPL
7. **Type of Family**
   - a. Nuclear family
   - b. Joint family
   - c. Extended family

d. Any other Specify _____

8. **Diet**
    a. Vegetarian
    b. Non vegetarian
    c. Mixed diet
9. **Previous Occupation**
    a. Homemaker
    b. Private employee
    c. Government employee
    d. Others
10. **Duration of pain**
    a. 1-6 Month
    b. 7-12 mo nth
    c. >1 year and above
11. **Nutritional status**
    a. Under weight
    b. Normal weight
    c. Overweight/Obese
12. **Treatment for joint pain**
    a. Yes , if yes please specify_____
    b. No
13. **Physical activities performed per day**
    a. Not involved
    b. Low (less than 20 min/day)
    c. High (more than 30min/day)
14. **History of Comorbid Illness**
    a. Present
    b. Absent

ದತ್ತಾಂಶ ಸಂಗ್ರಹ ಸಾಧನ

ಭಾಗವಹಿಸುವವರಿಗೆ ಸೂಚನೆಗಳು:

ದಯವಿಟ್ಟು ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. ನೀವು ಆದ್ಯತೆ ನೀಡುವ ಆಯ್ಕೆಗೆ ಪ್ರತಿಕ್ರಿಯಿಸಿ. ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳನ್ನು ಉತ್ತರಿಸದೆ ಬಿಡಬೇಡಿ. ನಿಮ್ಮ ಉತ್ತರಗಳನ್ನು ಗೌಪ್ಯವಾಗಿಡಲಾಗುವುದು. ಮಾಹಿತಿ ಸಂಗ್ರಹವು ಅಧ್ಯಯನದ ಉದ್ದೇಶಕ್ಕಾಗಿ ಮಾತ್ರ ಇರುತ್ತದೆ.

1. ವಯಸ್ಸು. (ವರ್ಷಗಳಲ್ಲಿ) _ _ _ _ _ _ _ _ _ _ _ _ _ _

2. ಲಿಂಗಭೇದ

ಎ. ಪುರುಷ

ಬಿ. ಮಹಿಳೆ.

3. ಶೈಕ್ಷಣಿಕ ಸ್ಥಾನಮಾನ/ಅರ್ಹತೆ

ಎ. ಔಪಚಾರಿಕ ಶಿಕ್ಷಣ

ಬಿ. ಔಪಚಾರಿಕ ಶಿಕ್ಷಣವಿಲ್ಲ.

4. ಧರ್ಮ

ಎ. ಹಿಂದೂ

ಬಿ. ಮುಸ್ಲಿಂ

ಸಿ. ಕ್ರಿಶ್ಚಿಯನ್

ಡಿ. ಇತರರು

5. ವೈವಾಹಿಕ ಸ್ಥಿತಿ

ಎ. ವಿವಾಹಿತ

ಬಿ. ಅವಿವಾಹಿತ

ಸಿ. ವಿಚ್ಛೇದನ

ಡಿ. ವಿಧವೆ

6. ಸಾಮಾಜಿಕ ಆರ್ಥಿಕ ಸ್ಥಿತಿ

ಎ. ಎಪಿಎಲ್

ಬಿ. ಬಿಪಿಎಲ್

7. ಕುಟುಂಬದ ಪ್ರಕಾರ

ಎ. ವಿಭಕ್ತ ಕುಟುಂಬ

ಬಿ. ಅವಿಭಕ್ತ ಕುಟುಂಬ

ಸಿ. ವಿಸ್ತರಿಸಿದ ಕುಟುಂಬ

ಡಿ. ಯಾವುದೇ ಇತರ ಕುಟುಂಬ ನಿರ್ದಿಷ್ಟಪಡಿಸಿ _ _ _ _ _ _ _ _ _ _ _ _ _ _

8. ಆಹಾರ ಕ್ರಮ

ಎ. ಸಸ್ಯಾಹಾರಿ

ಬಿ. ಸಸ್ಯಾಹಾರಿ

ಸಿ. ಮಿಶ್ರ ಆಹಾರ

9. ಉದ್ಯೋಗ.

ಎ. ಗೃಹಿಣಿ

ಬಿ. ಖಾಸಗಿ ಉದ್ಯೋಗಿ

ಸಿ. ಸರ್ಕಾರಿ ಉದ್ಯೋಗಿ

ಡಿ. ಇತರರು

10. ನೋವಿನ ಅವಧಿ

ಎ. 1-6 ತಿಂಗಳ

ಬಿ. 7-12 ತಿಂಗಳು

ಸಿ. 1 ವರ್ಷ ಮತ್ತು ಮೇಲ್ಪಟ್ಟು

11. ಪೌಷ್ಟಿಕಾಂಶದ ಸ್ಥಿತಿ

ಎ. ಕಡಿಮೆ ತೂಕದ

ಬಿ. ಸಾಮಾನ್ಯ ತೂಕ

ಸಿ. ಅತಿಯಾದ ತೂಕ/ಬೊಜ್ಜು

12. ಕೀಲು ನೋವಿನ ಚಿಕಿತ್ಸೆ ಪಡೆಯುತಿರುವಿರ

ಎ. ಹೌದು, ಹೌದು ಎಂದಾದರೆ ದಯವಿಟ್ಟು ಅನ್ನು ಸೂಚಿಸಿ _ _ _ _ _ _ _ _

ಬಿ .ಇಲ್ಲ

13. ದಿನನಿತ್ಯದ ದೈಹಿಕ ಚಟುವಟಿಕೆಗಳನ್ನು ನಡೆಸಲಾಗುತ್ತದ?

ಎ. ಒಳಗೊಂಡಿಲ್ಲ

ಬಿ. ಕಡಿಮೆ (ದಿನಕ್ಕೆ 20 ನಿಮಿಷಗಳಿಗಿಂತ ಕಡಿಮೆ)

ಸಿ. ಹೆಚ್ಚು (ದಿನಕ್ಕೆ 30 ನಿಮಿಷಗಳಿಗಿಂತ ಹೆಚ್ಚು)

14. ದೀರ್ಘಕಾಲದ ಅನಾರೋಗ್ಯ ಸಮಸ್ಯ?

ಎ. ಹೌದು

ಬಿ. ಇಲ್ಲ

SECTION –B OXFORD KNEE SCORE QUESTIONNAIRE

Dear participants,

Please answer the following 12 questions. Choose only one answer per question. The value for each answer is indicated to the right of the answer. Total up all of your answers to obtain a total score out of 48 points. Please only consider how you have been getting on during the past four weeks

Name	
Date	
Left or Right Knee	

1. How would you describe the pain you have usually from your knee? Score

None -4
Very mild -3
Mild -2
Mild moderate -1
Severe -0

2. Have you had any trouble with washing and drying yourself all over because of your knee?

No trouble at all -4
Very little trouble -3
Moderate trouble -2
Extreme difficulty -1
Impossible to do -0

3. Have you had any trouble getting in and out of a car or using public transport because of your knee?

No trouble at all-4
Very little trouble-3
Moderate trouble-2
Extreme difficulty-1
Impossible to do-0

4. If you were to kneel down, could you stand up afterwards?

Yes, easily -4
With little difficulty -3
With moderate difficulty -2
With extreme difficulty -1
No, impossible -0

5. Have you been limping when walking because of your knee?

Rarely/never -4
Sometimes or just at first -3
Often, not just at first -2
Most of the time -1
All of the time -0

6. Have you felt that your knee might suddenly give way or let you down?

Rarely/never-4
Sometimes or just at first-3
Often, not just at first-2
Most of the time-1
All of the time-0

7. Have you been able to do your own household shopping on your own?

Yes, easily -4
With little difficulty -3
With moderate difficulty -2
With extreme difficulty -1
No, impossible -0

8. For how long have you been able to walk before the pain from your knee became severe (with or without a stick)?

No pain, even after more than 30 minutes-4
16-30 minutes-3
5-15 minutes-2
Around the house only-1
Unable to walk at all-0

9. Have you been able to walk down a flight of stairs?

Yes, easily -4
With little difficulty -3
With moderate difficulty -2
With extreme difficulty -1
No, impossible -0

10. After a meal (sat at a table) how painful has it been for you to stand up from a chair because of your knee?

Not at all painful -4
Slightly painful -3
Moderately painful -2
Very painful -1
Unbearable -0

11. How much pain from your knee interfered with your usual work (including housework)?

Not at all-4
A little bit-3
Moderately-2
Greatly-1
Totally-0

12. Have you been troubled by pain from your knee in bed at night?

No nights-4
Only 1 or 2 nights-3
Some nights-2
Most nights-1
Every night-0

Score Total Score……...../48

Grading for the oxford knee score	
Score 0 to 19	Poor
Score 20 to 29	Moderate
Score 30 to 39	Good
Score 40 to 48	Excellent

ಆಕ್ಸ್‌ಫರ್ಡ್ ಮೊಣಕಾಲು ನೋವಿನ ಅಂಕಗಳ ಪ್ರಶ್ನಾವಳಿ

ದಯವಿಟ್ಟು ಕೆಳಗಿನ 12 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದೇ ಉತ್ತರವನ್ನು ಆಯ್ಕೆಮಾಡಿ. ಪ್ರತಿ ಉತ್ತರದ ಮೌಲ್ಯವನ್ನು ಉತ್ತರದ ಬಲಕ್ಕೆ ಸೂಚಿಸಲಾಗುತ್ತದೆ. 48 ಅಂಕಗಳಲ್ಲಿ ಒಟ್ಟು ಸ್ಕೋರ್ ಪಡೆಯಲು ನಿಮ್ಮ ಎಲ್ಲಾ ಉತ್ತರಗಳನ್ನು ಒಟ್ಟುಗೂಡಿಸಿ. ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ ನೀವು ಹೇಗೆ ಕಾರ್ಯನಿರ್ವಹಿಸುತ್ತಿದ್ದೀರಿ ಎಂಬುದನ್ನು ಮಾತ್ರ ಪರಿಗಣಿಸಿ

ಹೆಸರು	
ದಿನಾಂಕ	
ಎಡ ಅಥವಾ ಬಲ ಮೊಣಕಾಲು	

1. ನಿಮ್ಮ ಮೊಣಕಾಲಿನ ನೋವನ್ನು ನೀವು ಸಾಮಾನ್ಯವಾಗಿ ಹೇಗೆ ವಿವರಿಸುತ್ತೀರಿ?
ಅಂಕಗಳು

ಯಾವುದೂ ಇಲ್ಲ -4
ತುಂಬಾ ಸೌಮ್ಯ -3
ಸೌಮ್ಯ -2
ಸೌಮ್ಯ ಮಧ್ಯಮ -1
ತೀವ್ರ -0

2.ನಿಮ್ಮ ಮೊಣಕಾಲಿನ ಕಾರಣದಿಂದ ನಿಮ್ಮನ್ನು ತೊಳೆಯಲು ಮತ್ತು ಒಣಗಿಸಲು ನಿಮಗೆ ಏನಾದರೂ ತೊಂದರೆ ಇದೆಯೇ?

ಯಾವುದೇ ತೊಂದರೆ ಇಲ್ಲ -4
ಬಹಳ ಕಡಿಮೆ ತೊಂದರೆ -3
ಮಧ್ಯಮ ತೊಂದರೆ -2
ತೀವ್ರ ತೊಂದರೆ -1
ಮಾಡುವುದು ಅಸಾಧ್ಯ-0

3.ನಿಮ್ಮ ಮೊಣಕಾಲಿನ ಕಾರಣದಿಂದಾಗಿ ನೀವು ಕಾರಿನಲ್ಲಿ ಮತ್ತು ಹೊರಹೋಗಲು ಅಥವಾ ಸಾರ್ವಜನಿಕ ಸಾರಿಗೆಯನ್ನು ಬಳಸುವಲ್ಲಿಯಾವುದೇ ತೊಂದರೆಯನ್ನು ಎದುರಿಸಿದ್ದೀರಾ?

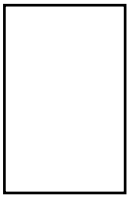
ಯಾವುದೇ ತೊಂದರೆ ಇಲ್ಲ-4
ಬಹಳ ಕಡಿಮೆ ತೊಂದರೆ-3
ಮಧ್ಯಮ ತೊಂದರೆ-2
ತೀವ್ರ ತೊಂದರೆ-1
ಮಾಡಲು ಅಸಾಧ್ಯ -0

4.ನೀವು ಮೊಣಕಾಲು ಹಾಕಿದರೆ ನೀವು ನಂತರ ಎದ್ದು ನಿಲ್ಲಬಹುದೇ?

ಹೌದು, ಸುಲಭವಾಗಿ -4
ಸ್ವಲ್ಪ ಕಷ್ಟದಿಂದ -3
ಮಧ್ಯಮ ತೊಂದರೆಯೊಂದಿಗೆ -2
ತೀವ್ರ ಕಷ್ಟದಿಂದ -1
ಇಲ್ಲ, ಅಸಾಧ್ಯ -0

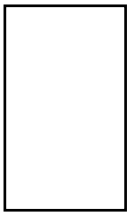
5.ನಿಮ್ಮ ಮೊಣಕಾಲಿನ ಕಾರಣ ನಡೆಯುವಾಗ ನೀವು ಕುಂಟುತ್ತಾ ಇದ್ದೀರಾ?

ಅಪರೂಪವಾಗಿ/ಎಂದಿಗೂ -4
ಕೆಲವೊಮ್ಮೆ ಅಥವಾ ಮೊದಲಿಗೆ -3
ಸಾಮಾನ್ಯವಾಗಿ,ಕೇವಲ ಮೊದಲ ಅಲ್ಲ -2
ಹೆಚ್ಚಿನ ಸಮಯ -1
ಎಲ್ಲಾ ಸಮಯ -0



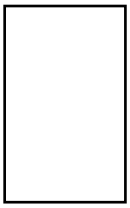
6.ನಿಮ್ಮ ಮೊಣಕಾಲು ಇದ್ದಕ್ಕಿದ್ದಂತೆ ದಾರಿ ಮಾಡಿಕೊಡಬಹುದು ಅಥವಾ ನಿಮ್ಮನ್ನು ನಿರಾಸೆಗೊಳಿಸಬಹುದು ಎಂದು ನೀವು ಭಾವಿಸಿದ್ದೀರಾ?

ವಿರಳವಾಗಿ / ಎಂದಿಗೂ-4
ಕೆಲವೊಮ್ಮೆ ಅಥವಾ ಮೊದಲಿಗೆ-3
ಸಾಮಾನ್ಯವಾಗಿ, ಮೊದಲಿಗೆ ಮಾತ್ರವಲ್ಲ-2
ಹೆಚ್ಚಿನ ಸಮಯ -1
ಎಲ್ಲಾ ಸಮಯದಲ್ಲೂ-0



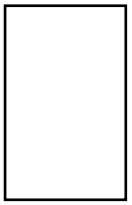
7. ನಿಮ್ಮ ಸ್ವಂತ ಮನೆಯ ಶಾಪಿಂಗ್ ಅನ್ನು ನೀವೇ ಮಾಡಲು ನಿಮಗೆ ಸಾಧ್ಯವಾಗಿದೆಯೇ?

ಹೌದು, ಸುಲಭವಾಗಿ -4
ಸ್ವಲ್ಪ ಕಷ್ಟದಿಂದ -3
ಮಧ್ಯಮ ತೊಂದರೆಯೊಂದಿಗೆ -2
ತೀವ್ರ ಕಷ್ಟದಿಂದ -1
ಇಲ್ಲ, ಅಸಾಧ್ಯ -0



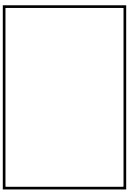
8. ನಿಮ್ಮ ಮೊಣಕಾಲಿನ ನೋವು ತೀವ್ರಗೊಳ್ಳುವ ಮೊದಲು ನೀವು ಎಷ್ಟು ಸಮಯದವರೆಗೆ ನಡೆಯಲು ಸಾಧ್ಯವಾಯಿತು (ಕೋಲಿನೊಂದಿಗೆ ಅಥವಾ ಇಲ್ಲದೆ)?

30 ನಿಮಿಷಗಳಿಗಿಂತ ಹೆಚ್ಚು ಸಮಯದ ನಂತರವೂ ನೋವು ಇಲ್ಲ -4
16-30 ನಿಮಿಷಗಳು -3
5-15 ನಿಮಿಷಗಳು -2
ಮನೆಯ ಸುತ್ತಲೂ ಮಾತ್ರ -1
ನಡೆಯಲು ಸಾಧ್ಯವೇ ಇಲ್ಲ-0



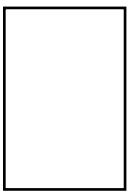
9. ನೀವು ಮೆಟ್ಟಿಲುಗಳ ಕೆಳಗೆ ನಡೆಯಲು ಸಾಧ್ಯವಾಯಿತು?

ಹೌದು, ಸುಲಭವಾಗಿ -4
ಸ್ವಲ್ಪ ಕಷ್ಟದಿಂದ -3
ಮಧ್ಯಮ ತೊಂದರೆಯೊಂದಿಗೆ -2
ತೀವ್ರ ಕಷ್ಟದಿಂದ -1
ಇಲ್ಲ, ಅಸಾಧ್ಯ -0



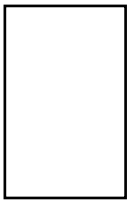
10.ಊಟದ ನಂತರ (ಮೇಜಿನ ಬಳಿ ಕುಳಿತು) ನಿಮ್ಮ ಮೊಣಕಾಲಿನ ಕಾರಣದಿಂದಾಗಿ ನೀವು ಕುರ್ಚಿಯಿಂದ ಎದ್ದು ನಿಲ್ಲುವುದು ಎಷ್ಟು ನೋವಿನಿಂದ ಕೂಡಿದೆ?

ನೋವು ಇಲ್ಲ -4
ಸ್ವಲ್ಪ ನೋವಿನಿಂದ ಕೂಡಿದೆ -3
ಮಧ್ಯಮ ನೋವಿನಿಂದ ಕೂಡಿದೆ -2
ತುಂಬಾ ನೋವಿನಿಂದ ಕೂಡಿದೆ -1
ಅಸಹನೀಯ -0



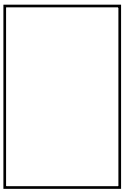
11. ನಿಮ್ಮ ಮೊಣಕಾಲಿನ ನೋವು ನಿಮ್ಮ ಸಾಮಾನ್ಯ ಕೆಲಸಕ್ಕೆ (ಮನೆಕೆಲಸ ಸೇರಿದಂತೆ) ಎಷ್ಟು ಅಡ್ಡಿಪಡಿಸಿದೆ?

ಇಲ್ಲವೇ ಇಲ್ಲ -4
ಸ್ವಲ್ಪ -3
ಮಧ್ಯಮವಾಗಿ -2
ಮಹತ್ತರವಾಗಿ -1
ಸಂಪೂರ್ಣವಾಗಿ -0



12. ರಾತ್ರಿ ಹಾಸಿಗೆಯಲ್ಲಿ ನಿಮ್ಮ ಮೊಣಕಾಲಿನ ನೋವಿನಿಂದ ನೀವು ತೊಂದರೆಗೊಳಗಾಗಿದ್ದೀರಾ?

ರಾತ್ರಿಗಳಿಲ್ಲ -4
ಕೇವಲ 1 ಅಥವಾ 2 ರಾತ್ರಿಗಳು-3
ಕೆಲವು ರಾತ್ರಿಗಳು-2
ಹೆಚ್ಚಿನ ರಾತ್ರಿಗಳು-1
ಪ್ರತಿ ರಾತ್ರಿ-0



ಒಟ್ಟು ಅಂಕಗಳು :……../48

ಆಕ್ಸ್‌ಫರ್ಡ್ ಮೊಣಕಾಲು ನೋವಿನ ಅಂಕಗಳ ಗ್ರೇಡಿಂಗ್	
ಅಂಕಗಳು 0 to 19	ಕಡಿಮೆ
ಅಂಕಗಳು 20 to 29	ಮಧ್ಯಮ.
ಅಂಕಗಳು 30 to 39	ಉತ್ತಮ
ಅಂಕಗಳು 40 to 48	ಅತ್ಯುತ್ತಮ

ANNEXURE-F

CONSULT FORM

A. PARTICIPANT INFORMATION SHEET

Title:

"Effectiveness of Epsom Salt hot Water application on Knee Joint Pain among Elderly people at Selected Community Areas, Kolar."

Elderly clients are invited to take part in a research study. Before you decide to participate in this study, it is important for you to understand why this research is being carried out and your role in the project. Please take time to read the following information carefully and discuss it with your friends and relatives if you wish before you decide to participate or not in this study. Don't hesitate to ask us if there is anything that is not clear here or for more information. Take as much as time you need to decide to participate in this study.

What is the purpose of the study?

This is purely a research study and your participation may not bring any direct benefit to you.

The present study aims to conduct to evaluate the effectiveness of Epsom salt hot water application among elderly – ***Do No Harm***.

Do participants have to take part in the study?

The investigator invites you to participate in the study and will be given a copy of this information sheet and adequate time to read through this, think, and ask any questions before making a decision. If you decide to enrol in the study, you will be asked to sign/thumb impression on a consent form. You are free to withdraw from the study at any time without giving any reason. A decision not to take part or later withdraw from the study whenever you choose will not affect your right or your profession.

What is your role in this project?

After your sign/thumb impression in the informed consent, the investigator shall ask questions on the basic details of the age, gender, education, occupation, area of residence and will be screened for knee joint pain using standardised oxford knee score scale and who have identified with knee pain referred to nearest primary health care followed by the intervention Epsom salt hot water application will be applied for over knee among elderly people (experimental group) for 15 minutes. Post-test will be assessed after 15 days of Intervention using the same scale.

What are the benefits of participating in the study?

Intervention strategy consisting Epsom salt hot water application shall bring a change in the presence and severity of knee joint pain and will enhance health outcomes among elderly clients. You are not entitled to any monetary or other benefits for participating in the study.

Are there any risks involved in participating in the study?

The study involves the Epsom salt hot water application applied topically over the skin for 15 days among elderly clients with therapeutic benefits after obtaining experts' opinions to conduct this intervention. There are no risks or inconveniences in

participating in this study.

Confidentiality of information

The data collected will be coded using unique code numbers which will be known only to the investigating team. Only this code will be indicated in all assessment sheets. Your name will not be disclosed outside or appear on any reports or publications resulting from the study. The data generated from this research will be anonymous, with no indication of the identity of the individuals involved. The results of the Intervention carried out, however, will be revealed and explained to you.

What will happen to the samples (data) you have given?

The data obtained will be analysed for scientific purposes. The results obtained from this study may be published in national and international scientific journals. Results may also be presented at scientific conferences /seminars. We will publish the results in scientific journals so that other interested people may learn from our research. However, we assure you that your identity will not be revealed anywhere, in any form, and to anybody. If you withdraw from the study after the samples have been collected, then your data will not be used for this study. Such data will be in safe custody till the completion of the project and will be deleted from records thereafter.

Who is organizing/ conducting the study?

The research is being conducted under the guidance of Subject experts and Research guide, Dr. Vani R Associate professor Dept. of CHN, SDUCON, Tamaka, Kolar.

Who has reviewed this study?

The study has been approved by the Institutional Ethics Committee, Sri Devaraj Urs College of Nursing for ethical aspects/standards.

If you need more information about this study, please contact the following at any time of the study.

Dr. Vani R
Associate professor
SDUCON
Mb: 9620213112
Email- vanivanir1988@gmail.com

Ms. BinduShree B
MSc (N) student
Phone no: 9742559198
Email-bindugowda361@gmail.com

Thank you for taking time to read this information. If you decide to consider taking part in this study, you will be given a copy of this leaflet for your information.

Signature of the investigator_____

Acknowledgement: Copy of this document received

Signature/Thumb impression of Participant:_____

ಸಹಭಾಗಿ ಮಾಹಿತಿ ಪತ್ರ

ಶೀರ್ಷಿಕೆ:

"ಕೋಲಾರದ ಆಯ್ದ ಸಮುದಾಯ ಪ್ರದೇಶಗಳಲ್ಲಿ ವೃದ್ಧರಲ್ಲಿ ಮಂಡಿ ನೋವಿನ ಮೇಲೆ ಎಪ್ಸಮ್ ಉಪ್ಪಿನ ಬಿಸಿ ನೀರಿನ ಅನ್ವಯದ ಪರಿಣಾಮ".

ಹಿರಿಯ ಗ್ರಾಹಕರನ್ನು ಸಂಶೋಧನಾ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಆಹ್ವಾನಿಸಲಾಗುತ್ತದೆ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನೀವು ನಿರ್ಧರಿಸುವ ಮೊದಲು, ಈ ಸಂಶೋಧನೆಯನ್ನು ಏಕೆ ನಡೆಸಲಾಗುತ್ತಿದೆ ಮತ್ತು ಯೋಜನೆಯಲ್ಲಿ ನಿಮ್ಮ ಪಾತ್ರವನ್ನು ನೀವು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವುದು ಮುಖ್ಯವಾಗಿದೆ. ದಯವಿಟ್ಟು ಈ ಕೆಳಗಿನ ಮಾಹಿತಿಯನ್ನು ಎಚ್ಚರಿಕೆಯಿಂದ ಓದಲು ಸಮಯ ತೆಗೆದುಕೊಳ್ಳಿ ಮತ್ತು ನೀವು ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನಿರ್ಧರಿಸುವ ಮೊದಲು ನಿಮ್ಮ ಸ್ನೇಹಿತರು ಮತ್ತು ಸಂಬಂಧಿಕರೊಂದಿಗೆ ಚರ್ಚಿಸಿ. ಇಲ್ಲಿ ಏನಾದರೂ ಸ್ಪಷ್ಟವಾಗಿಲ್ಲವೇ ಅಥವಾ ಹೆಚ್ಚಿನ ಮಾಹಿತಿಗಾಗಿ ನಮ್ಮನ್ನು ಕೇಳಲು ಹಿಂಜರಿಯಬೇಡಿ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನೀವು ನಿರ್ಧರಿಸಲು ಅಗತ್ಯವಿರುವಷ್ಟು ಸಮಯವನ್ನು ತೆಗೆದುಕೊಳ್ಳಿ.
ಅಧ್ಯಯನದ ಉದ್ದೇಶವೇನು?

ಇದು ಸಂಪೂರ್ಣವಾಗಿ ಸಂಶೋಧನಾ ಅಧ್ಯಯನವಾಗಿದೆ ಮತ್ತು ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆಯು ನಿಮಗೆ ಯಾವುದೇ ನೇರ ಪ್ರಯೋಜನವನ್ನು ತರದಿರಬಹುದು.

ಪ್ರಸ್ತುತ ಅಧ್ಯಯನವು ವಯಸ್ಸಾದವರಲ್ಲಿ ಎಪ್ಸಮ್ ಉಪ್ಪಿನ ಬಿಸಿ ನೀರಿನ ಅನ್ವಯದ ಪರಿಣಾಮಕಾರಿತ್ವವನ್ನು ಮೌಲ್ಯಮಾಪನ ಮಾಡುವ ಗುರಿಯನ್ನು ಹೊಂದಿದೆ- ಯಾವುದೇ ಹಾನಿ ಇಲ್ಲ ಭಾಗವಹಿಸುವವರು ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಬೇಕೇ?

ತನಿಖಾಧಿಕಾರಿಯು ನಿಮ್ಮನ್ನು ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಆಹ್ವಾನಿಸುತ್ತಾನೆ ಮತ್ತು ಈ ಮಾಹಿತಿ ಹಾಳೆಯ ಪ್ರತಿಯನ್ನು ಮತ್ತು ನಿರ್ಧಾರ ತೆಗೆದುಕೊಳ್ಳುವ ಮೊದಲು ಇದನ್ನು ಓದಲು, ಯೋಚಿಸಲು ಮತ್ತು ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲು ಸಾಕಷ್ಟು ಸಮಯವನ್ನು ನೀಡಲಾಗುತ್ತದೆ. ನೀವು ಅಧ್ಯಯನಕ್ಕೆ ದಾಖಲಾಗಲು ನಿರ್ಧರಿಸಿದರೆ, ಒಪ್ಪಿಗೆ ಅರ್ಜಿಯ ಮೇಲೆ ಸಹಿ/ಹೆಬ್ಬೆರಳಿನ ಗುರುತು ಹಾಕಲು ನಿಮ್ಮನ್ನು ಕೇಳಲಾಗುತ್ತದೆ. ಯಾವುದೇ ಕಾರಣವನ್ನು ನೀಡದೆ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಲು ನಿಮಗೆ ಸ್ವಾತಂತ್ರ್ಯವಿದೆ. ನೀವು ಆಯ್ಕೆ ಮಾಡಿದಾಗಲೆಲ್ಲಾ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸದಿರಲು ಅಥವಾ ನಂತರ ಹಿಂತೆಗೆದುಕೊಳ್ಳುವ ನಿರ್ಧಾರವು ನಿಮ್ಮ ಹಕ್ಕು ಅಥವಾ ನಿಮ್ಮ ವೃತ್ತಿಯ ಮೇಲೆ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ.
ಈ ಯೋಜನೆಯಲ್ಲಿ ನಿಮ್ಮ ಪಾತ್ರವೇನು?

ಮಾಹಿತಿಯುಕ್ತ ಒಪ್ಪಿಗೆಯಲ್ಲಿ ನಿಮ್ಮ ಚಿಹ್ನೆ/ಹೆಬ್ಬೆರಳಿನ ಗುರುತು ಹಾಕಿದ ನಂತರ, ತನಿಖಾಧಿಕಾರಿಯು ವಯಸ್ಸು, ಲಿಂಗ, ಶಿಕ್ಷಣ, ಉದ್ಯೋಗ, ವಾಸದ ಪ್ರದೇಶದ ಮೂಲಭೂತ ವಿವರಗಳ ಬಗ್ಗೆ, ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಬೇಕು ಮತ್ತು ಪ್ರಮಾಣಿತ ಆಕ್ಸ್ಫರ್ಡ್ ಮೊಣಕಾಲು ಸ್ಕೋರ್ ಸ್ಕೇಲ್ ಅನ್ನು ಬಳಸಿಕೊಂಡು ಮೊಣಕಾಲು ನೋವಿನಿಂದ ಬಳಲುತ್ತಿರುವವರನ್ನು ಪರೀಕ್ಷಿಸಲಾಗುತ್ತದೆ. ವಯಸ್ಸಾದವರಲ್ಲಿ (ಪ್ರಾಯೋಗಿಕ ಗುಂಪು) ಮೊಣಕಾಲಿನ ಮೇಲೆ ಎಪ್ಸಮ್ ಉಪ್ಪಿನ ಬಿಸಿ ನೀರಿನ ಅನ್ವಯವನ್ನು 15 ನಿಮಿಷಗಳ ಕಾಲ ಅನ್ವಯಿಸಲಾಗುತ್ತದೆ. ಮಧ್ಯಪ್ರವೇಶದ 15 ದಿನಗಳ ನಂತರ ಅದೇ ಪ್ರಮಾಣವನ್ನು ಬಳಸಿಕೊಂಡು ಪರೀಕ್ಷೆಯ ನಂತರದ ಮೌಲ್ಯಮಾಪನವನ್ನು ಮಾಡಲಾಗುತ್ತದೆ.

ಈ ಯೋಜನೆಯಲ್ಲಿ ನಿಮ್ಮ ಪಾತ್ರವೇನು?

ಮಾಹಿತಿಯುಕ್ತ ಒಪ್ಪಿಗೆಯಲ್ಲಿ ನಿಮ್ಮ ಚಿಹ್ನೆ/ಹೆಬ್ಬೆರಳಿನ ಗುರುತಿನ ನಂತರ, ತನಿಖಾಧಿಕಾರಿಯು ವಯಸ್ಸು, ಲಿಂಗ, ಶಿಕ್ಷಣ, ಉದ್ಯೋಗ, ವಾಸದ ಪ್ರದೇಶದ ಮೂಲಭೂತ ವಿವರಗಳ ಬಗ್ಗೆ, ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳುತ್ತಾರೆ ಮತ್ತು ಪ್ರಮಾಣಿತ ಆಕ್ಸ್ಫರ್ಡ್ ಮೊಣಕಾಲು ಸ್ಕೋರ್ ಸ್ಕೇಲ್ ಅನ್ನು ಬಳಸಿಕೊಂಡು ಮೊಣಕಾಲು ನೋವನ್ನು ಪರೀಕ್ಷಿಸಲಾಗುತ್ತದೆ. ವಯಸ್ಸಾದವರಲ್ಲಿ (ಪ್ರಾಯೋಗಿಕ ಗುಂಪು) ಮೊಣಕಾಲಿನ ಮೇಲೆ ಎಪ್ಸಮ್ ಉಪ್ಪಿನ ಬಿಸಿ ನೀರಿನ ಅನ್ವಯವನ್ನು 15 ನಿಮಿಷಗಳ ಕಾಲ ಅನ್ವಯಿಸಲಾಗುತ್ತದೆ. ಮಧ್ಯಪ್ರವೇಶದ 15 ದಿನಗಳ ನಂತರ ಅದೇ ಪ್ರಮಾಣವನ್ನು ಬಳಸಿಕೊಂಡು ಪರೀಕ್ಷೆಯ ನಂತರದ ಮೌಲ್ಯಮಾಪನವನ್ನು ಮಾಡಲಾಗುತ್ತದೆ.

ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವುದರಿಂದ ಯಾವುದೇ ಅಪಾಯಗಳಿವೆಯೇ?

ಈ ಹಸ್ತಕ್ಷೇಪವನ್ನು ನಡೆಸಲು ತಜ್ಞರ ಅಭಿಪ್ರಾಯಗಳನ್ನು ಪಡೆದ ನಂತರ ಚಿಕಿತ್ಸಕ ಪ್ರಯೋಜನಗಳನ್ನು ಹೊಂದಿರುವ ವಯಸ್ಸಾದ ಗ್ರಾಹಕರಲ್ಲಿ 15 ದಿನಗಳ ಕಾಲ ಚರ್ಮದ ಮೇಲೆ ಎಪ್ಸಮ್ ಉಪ್ಪಿನ ಬಿಸಿ ನೀರಿನ ಅನ್ವಯವನ್ನು ಅನ್ವಯಿಸುವುದನ್ನು ಅಧ್ಯಯನವು ಒಳಗೊಂಡಿರುತ್ತದೆ.

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವುದರಿಂದ ಯಾವುದೇ ಅಪಾಯಗಳು ಅಥವಾ ಅನಾನುಕೂಲತೆಗಳಿಲ್ಲ.

ಮಾಹಿತಿಯ ಗೌಪ್ಯತೆಸಂಗ್ರಹಿಸಿದ ದತ್ತಾಂಶವನ್ನು ?

ತನಿಖಾ ತಂಡಕ್ಕೆ ಮಾತ್ರ ತಿಳಿದಿರುವ ವಿಶಿಷ್ಟ ಕೋಡ್ ಸಂಖ್ಯೆಗಳನ್ನು ಬಳಸಿ ಕೋಡ್ ಮಾಡಲಾಗುತ್ತದೆ. ಈ ಕೋಡ್ ಅನ್ನು ಮಾತ್ರ ಎಲ್ಲಾ ಮೌಲ್ಯಮಾಪನ ಹಾಳೆಗಳಲ್ಲಿ ಸೂಚಿಸಲಾಗುತ್ತದೆ. ನಿಮ್ಮ ಹೆಸರನ್ನು ಹೊರಗೆ ಬಹಿರಂಗಪಡಿಸಲಾಗುವುದಿಲ್ಲ ಅಥವಾ ಅಧ್ಯಯನದ ಪರಿಣಾಮವಾಗಿ ಯಾವುದೇ ವರದಿಗಳು ಅಥವಾ ಪ್ರಕಟಣೆಗಳಲ್ಲಿ ಕಾಣಿಸುವುದಿಲ್ಲ. ಈ ಸಂಶೋಧನೆಯಿಂದ ಉತ್ಪತ್ತಿಯಾಗುವ ದತ್ತಾಂಶವು ಅನಾಮಧೇಯವಾಗಿರುತ್ತದೆ, ಇದರಲ್ಲಿ ಭಾಗಿಯಾಗಿರುವ ವ್ಯಕ್ತಿಗಳ ಗುರುತಿನ ಯಾವುದೇ ಸೂಚನೆಯಿಲ್ಲ. ಆದಾಗ್ಯೂ, ನಡೆಸಿದ ಹಸ್ತಕ್ಷೇಪದ ಫಲಿತಾಂಶಗಳನ್ನು ನಿಮಗೆ ಬಹಿರಂಗಪಡಿಸಲಾಗುತ್ತದೆ ಮತ್ತು ವಿವರಿಸಲಾಗುತ್ತದೆ.

ನೀವು ನೀಡಿದ ಮಾದರಿಗಳಿಗೆ (ದತ್ತಾಂಶ) ಏನಾಗುತ್ತದೆ?

ಪಡೆದ ದತ್ತಾಂಶವನ್ನು ವೈಜ್ಞಾನಿಕ ಉದ್ದೇಶಗಳಿಗಾಗಿ ವಿಶ್ಲೇಷಿಸಲಾಗುತ್ತದೆ. ಈ ಅಧ್ಯಯನದಿಂದ ಪಡೆದ ಫಲಿತಾಂಶಗಳನ್ನು ರಾಷ್ಟ್ರೀಯ ಮತ್ತು ಅಂತಾರಾಷ್ಟ್ರೀಯ ವೈಜ್ಞಾನಿಕ ನಿಯತಕಾಲಿಕಗಳಲ್ಲಿ ಪ್ರಕಟಿಸಬಹುದು. ಫಲಿತಾಂಶಗಳನ್ನು ವೈಜ್ಞಾನಿಕ ಸಮಾವೇಶಗಳು/ವಿಚಾರಗೋಷ್ಠಿಗಳಲ್ಲಿಯೂ ಪ್ರಸ್ತುತಪಡಿಸಬಹುದು. ಇತರ ಆಸಕ್ತ ಜನರು ನಮ್ಮ ಸಂಶೋಧನೆಯಿಂದ ಕಲಿಯುವಂತೆ ನಾವು ಫಲಿತಾಂಶಗಳನ್ನು ವೈಜ್ಞಾನಿಕ ನಿಯತಕಾಲಿಕಗಳಲ್ಲಿ ಪ್ರಕಟಿಸುತ್ತೇವೆ. ಆದಾಗ್ಯೂ, ನಿಮ್ಮ ಗುರುತನ್ನು ಎಲ್ಲಿಯೂ, ಯಾವುದೇ ರೂಪದಲ್ಲಿ ಮತ್ತು ಯಾರಿಗೂ ಬಹಿರಂಗಪಡಿಸಲಾಗುವುದಿಲ್ಲ ಎಂದು ನಾವು ನಿಮಗೆ ಭರವಸೆ ನೀಡುತ್ತೇವೆ. ಮಾದರಿಗಳನ್ನು ಸಂಗ್ರಹಿಸಿದ ನಂತರ ನೀವು ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿದರೆ, ನಿಮ್ಮ ದತ್ತಾಂಶವನ್ನು ಈ ಅಧ್ಯಯನಕ್ಕೆ ಬಳಸಲಾಗುವುದಿಲ್ಲ. ಅಂತಹ ದತ್ತಾಂಶವು ಯೋಜನೆ ಪೂರ್ಣಗೊಳ್ಳುವವರೆಗೆ ಸುರಕ್ಷಿತ ವಶದಲ್ಲಿರುತ್ತದೆ ಮತ್ತು ನಂತರ ದಾಖಲೆಗಳಿಂದ ಅಳಿಸಲಾಗುತ್ತದೆ.

ಅಧ್ಯಯನವನ್ನು ಯಾರು ಆಯೋಜಿಸುತ್ತಿದ್ದಾರೆ/ನಡೆಸುತ್ತಿದ್ದಾರೆ?

ವಿಷಯ ತಜ್ಞರು ಮತ್ತು ಸಂಶೋಧನಾ ಮಾರ್ಗದರ್ಶಿ ಶ್ರೀಮತಿ. ವಾಣಿ ಆರ್ ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರ ಮಾರ್ಗದರ್ಶನದಲ್ಲಿ ಈ ಸಂಶೋಧನೆಯನ್ನು ನಡೆಸಲಾಗುತ್ತಿದೆ. ಸಿ. ಎಚ್. ಎನ್., ಎಸ್. ಡಿ. ಯು. ಸಿ. ಓ. ಎನ್., ತಮಕ, ಕೋಲಾರ.

ಈ ಅಧ್ಯಯನವನ್ನು ಯಾರು ಪರಿಶೀಲಿಸಿದ್ದಾರೆ?

ನೈತಿಕ ಅಂಶಗಳು/ಮಾನದಂಡಗಳಿಗಾಗಿ ಶ್ರೀ ದೇವರಾಜ್ ಅರಸ್ ನರ್ಸಿಂಗ್ ಕಾಲೇಜಿನ ಸಾಂಸ್ಥಿಕ ನೈತಿಕ ಸಮಿತಿಯು ಈ ಅಧ್ಯಯನವನ್ನು ಅನುಮೋದಿಸಿದೆ.

ಈ ಅಧ್ಯಯನದ ಬಗ್ಗೆ ನಿಮಗೆ ಹೆಚ್ಚಿನ ಮಾಹಿತಿ ಬೇಕಾದರೆ, ದಯವಿಟ್ಟು ಅಧ್ಯಯನದ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಈ ಕೆಳಗಿನವರನ್ನು ಸಂಪರ್ಕಿಸಿ.

ಶ್ರೀಮತಿ ವಾಣಿ ಆರ್
ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕಿ
ಎಸ್. ಡಿ. ಯು. ಸಿ. ಓ. ಎನ್. ಎಂ. ಬಿಃ
ದೂರವಾಣಿ ಸಂಖ್ಯೆಃ 9620213112
Email-vanivanir1988@gmail.com

ಶ್ರೀಮತಿ ಬಿಂದುಶ್ರೀ ಬಿ.
ಎಂಎಸ್ಸಿ (ಎನ್) ವಿದ್ಯಾರ್ಥಿನಿ
ದೂರವಾಣಿ ಸಂಖ್ಯೆಃ 9742559198
Email-bindugowda361@gmail.com

ಈ ಮಾಹಿತಿಯನ್ನು ಓದಲು ಸಮಯ ತೆಗೆದುಕೊಂಡಿದ್ದಕ್ಕಾಗಿ ಧನ್ಯವಾದಗಳು. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನೀವು ನಿರ್ಧರಿಸಿದರೆ, ನಿಮ್ಮ ಮಾಹಿತಿಗಾಗಿ ಈ ಕರಪತ್ರದ ಪ್ರತಿಯನ್ನು ನಿಮಗೆ ನೀಡಲಾಗುವುದು.

*ತನಿಖಾಧಿಕಾರಿಯ ಸಹಿ*_____

ಅಂಗೀಕಾರಃ- ಈ ದಾಖಲೆಯ ಪ್ರತಿಯನ್ನು ಸ್ವೀಕರಿಸಲಾಗಿದೆ

ಭಾಗವಹಿಸುವವರ ಸಹಿ/ಹೆಬ್ಬೆರಳಿನ ಮುದ್ರೆಃ- _____

B. Written Informed Consent Form

Study Title:

"Effectiveness of Epsom Salt hot Water application on Knee Joint Pain among Elderly people at Selected Community Areas, Kolar."

Code Number:

I confirm that I have read and understood the information given to me about this study and my role in it. I had opportunities to ask questions and my questions have been answered to my satisfaction.

Or

I confirm that all information about this study and my role in it has been read / explained to me by a member of the investigating team in a language that I understand. I had opportunities to ask questions and my questions have been answered to my satisfaction.

b) I understand that my participation in this study is voluntary and that I am free to withdraw from the study at any time, without giving any reason and legal rights being affected.

c) I understand that my identity will not be revealed in any document or publication.

d) I agree not to restrict the use/publication of any data or results that arise from this study provided such use is only for scientific purposes.

e) I am aware that by agreeing to my participation in this investigation, I will have to give more time for training and assessments by the investigating team and that these assessments will not interfere with the benefits that I am entitled to or my daily routine.

f) I give my consent, voluntarily to take part in this study. I also agree for the investigator to record the observation/interview sessions whenever they are held.

Signature (or thumb impression) of the study participants /Legally Acceptable Representative:

Study participant signature/Thumb impression:_____

Signature/Thumb impression of Witnesses:_____

Study Investigator's Signature: _____

ಲಿಖಿತ ಮಾಹಿತಿಯುಕ್ತ ಸಮ್ಮತಿ ನಮೂನೆ ಅಧ್ಯಯನ

ಶೀರ್ಷಿಕೆ:

"ಕೋಲಾರದ ಆಯ್ದ ಸಮುದಾಯ ಪ್ರದೇಶಗಳಲ್ಲಿ ವೃದ್ಧರಲ್ಲಿ ಮಂಡಿ ನೋವಿನ ಮೇಲೆ ಎಪ್ಸಮ್ ಉಪ್ಪಿನ ಬಿಸಿ ನೀರಿನ ಅನ್ವಯದ ಪರಿಣಾಮಕಾರಿತ್ವ".

ಕೋಡ್ ಸಂಖ್ಯೆ:

ಈ ಅಧ್ಯಯನ ಮತ್ತು ಅದರಲ್ಲಿ ನನ್ನ ಪಾತ್ರದ ಬಗ್ಗೆ ನನಗೆ ನೀಡಲಾದ ಮಾಹಿತಿಯನ್ನು ನಾನು ಓದಿದ್ದೇನೆ ಮತ್ತು ಅರ್ಥಮಾಡಿಕೊಂಡಿದ್ದೇನೆ ಎಂದು ನಾನು ದೃಢೀಕರಿಸುತ್ತೇನೆ. ನನಗೆ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳುವ ಅವಕಾಶಗಳು ದೊರೆತಿದ್ದವು ಮತ್ತು ನನ್ನ ಪ್ರಶ್ನೆಗಳಿಗೆ ನನ್ನ ತೃಪ್ತಿಯಂತೆ ಉತ್ತರಿಸಲಾಗಿದೆ. ಅಥವಾ ಈ ಅಧ್ಯಯನದ ಬಗ್ಗೆ, ಮತ್ತು ಅದರಲ್ಲಿ ನನ್ನ ಪಾತ್ರದ ಬಗ್ಗೆ ಎಲ್ಲಾ ಮಾಹಿತಿಯನ್ನು ತನಿಖಾ ತಂಡದ ಸದಸ್ಯರೊಬ್ಬರು ನನಗೆ ಅರ್ಥವಾಗುವ ಭಾಷೆಯಲ್ಲಿ ಓದಿದ್ದಾರೆ/ವಿವರಿಸಿದ್ದಾರೆ ಎಂದು ನಾನು ದೃಢೀಕರಿಸುತ್ತೇನೆ. ನನಗೆ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳುವ ಅವಕಾಶಗಳು ದೊರೆತಿದ್ದವು ಮತ್ತು ನನ್ನ ಪ್ರಶ್ನೆಗಳಿಗೆ ನನ್ನ ತೃಪ್ತಿಯಂತೆ ಉತ್ತರಿಸಲಾಗಿದೆ.

ಬಿ) ಈ ಅಧ್ಯಯನದಲ್ಲಿ ನನ್ನ ಭಾಗವಹಿಸುವಿಕೆಯು ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿದೆ ಮತ್ತು ಯಾವುದೇ ಕಾರಣವನ್ನು ನೀಡದೆ ಮತ್ತು ಕಾನೂನು ಹಕ್ಕುಗಳ ಮೇಲೆ ಪರಿಣಾಮ ಬೀರದೆ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಲು ನಾನು ಸ್ವತಂತ್ರನಾಗಿದ್ದೇನೆ ಎಂದು ನಾನು ಅರ್ಥಮಾಡಿಕೊಂಡಿದ್ದೇನೆ.

ಸಿ) ನನ್ನ ಗುರುತನ್ನು ಯಾವುದೇ ದಾಖಲೆ ಅಥವಾ ಪ್ರಕಟಣೆಯಲ್ಲಿ ಬಹಿರಂಗಪಡಿಸಲಾಗುವುದಿಲ್ಲ ಎಂದು ನಾನು ಅರ್ಥಮಾಡಿಕೊಂಡಿದ್ದೇನೆ.

ಡಿ) ಈ ಅಧ್ಯಯನದಿಂದ ಉಂಟಾಗುವ ಯಾವುದೇ ಡೇಟಾ ಅಥವಾ ಫಲಿತಾಂಶಗಳ ಬಳಕೆ/ಪ್ರಕಟಣೆಯನ್ನು ನಿರ್ಬಂಧಿಸದಿರಲು ನಾನು ಒಪ್ಪುತ್ತೇನೆ, ಅಂತಹ ಬಳಕೆಯು ವೈಜ್ಞಾನಿಕ ಉದ್ದೇಶಗಳಿಗಾಗಿ ಮಾತ್ರ.

ಇ) ಈ ತನಿಖೆಯಲ್ಲಿ ನನ್ನ ಭಾಗವಹಿಸುವಿಕೆಯನ್ನು ಒಪ್ಪಿಕೊಳ್ಳುವ ಮೂಲಕ, ತನಿಖಾ ತಂಡದ ತರಬೇತಿ ಮತ್ತು ಮೌಲ್ಯಮಾಪನಗಳಿಗೆ ನಾನು ಹೆಚ್ಚಿನ ಸಮಯವನ್ನು ನೀಡಬೇಕಾಗುತ್ತದೆ ಮತ್ತು ಈ ಮೌಲ್ಯಮಾಪನಗಳು ನನಗೆ ಅರ್ಹವಾದ ಪ್ರಯೋಜನಗಳಿಗೆ ಅಥವಾ ನನ್ನ ದೈನಂದಿನ ದಿನಚರಿಯಲ್ಲಿ ಹಸ್ತಕ್ಷೇಪ ಮಾಡುವುದಿಲ್ಲ ಎಂದು ನನಗೆ ತಿಳಿದಿದೆ.

ಎಫ್) ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನಾನು ಸ್ವಯಂಪ್ರೇರಣೆಯಿಂದ ನನ್ನ ಒಪ್ಪಿಗೆಯನ್ನು ನೀಡುತ್ತೇನೆ. ವೀಕ್ಷಣೆ/ಸಂದರ್ಶನಗಳು ನಡೆದಾಗಲೆಲ್ಲಾ ಅವುಗಳನ್ನು ದಾಖಲಿಸಲು ತನಿಖಾಧಿಕಾರಿಗೆ ನಾನು ಒಪ್ಪುತ್ತೇನೆ.

ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವವರ ಸಹಿ (ಅಥವಾ ಹೆಬ್ಬೆರಳಿನ ಗುರುತು)/ಕಾನೂನುಬದ್ಧವಾಗಿ ಸ್ವೀಕಾರಾರ್ಹ ಪ್ರತಿನಿಧಿ:

ಅಧ್ಯಯನ ಭಾಗವಹಿಸುವವರ ಸಹಿ/ ಹೆಬ್ಬೆರಳಿನ ಮುದ್ರೆ: _____

ಸಾಕ್ಷಿಗಳ ಸಹಿ/ಹೆಬ್ಬೆರಳಿನ ಮುದ್ರೆ: _____

ಅಧ್ಯಯನ ತನಿಖಾಧಿಕಾರಿಯ ಸಹಿ: _____

ANNAXURE -G

CERTIFICATE FROM STATISTICIAN

CERTIFICATE FROM STATISTICS

I hereby certify that I have provided statistical guidance in analysis to Miss. Bindushree B, II[nd] Year M.Sc. Nursing student, for her research study titled as "Effectiveness of Epsom salt hot water application on knee joint pain among elderly people at selected community areas, Kolar".

22/5/2025

Signature of the Statistician,

Mr. S. Ravishankar
Asst. Professor, Statistics
Dept. of Community Medicine
SDUMC, Kolar-563103

Name & Designation

Mr. S. RAVISHANKER

Assistant Professor

Dept of Community Health Medicine,

SDUAHER, Tamaka , Kolar.

Date: 22/05/2025

Place: Tamaka, Kolar

ANNAXURE -H

CERTIFICATE OF KANNADA EDITING

CERTIFICATE OF KANNADA EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that, Mis. Bindushree B II[nd] Year MSc Nursing student of Sri Devaraj Urs College of Nursing, Tamaka, Kolar. Has done a dissertation study interest **"Effectiveness of Epsom Salt hot Water application on Knee Joint Pain among Elderly people at Selected Community Areas, Kolar."**

This Study was edited for Kannada language appropriateness by:

Date: 22/05/2025

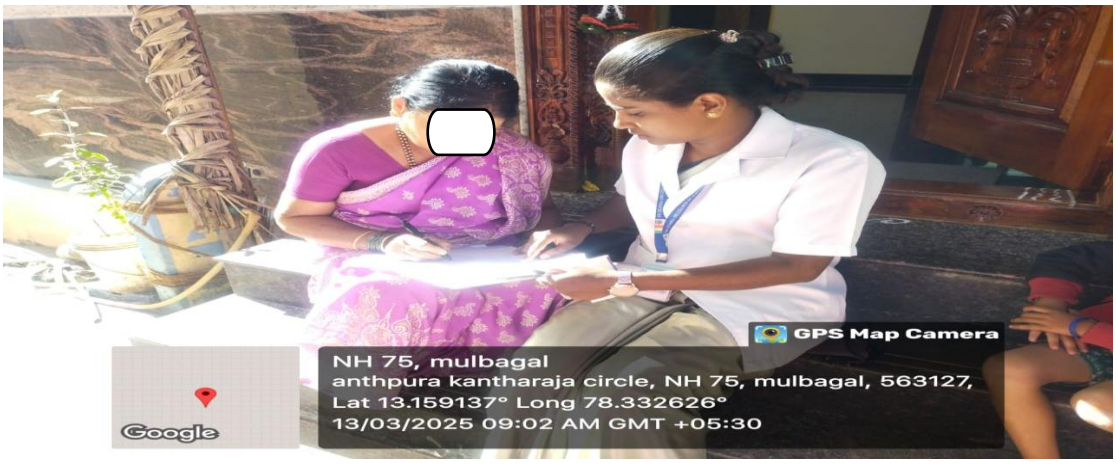
Place: Tamaka, Kolar

Signature with designation

ANNAXURE -I

PHOTO GALLERY

PRE-TEST - EXPERIMETAL GROUP



CONTROL GROUP

ADMINISTRATION OF INTERVENTION FOR EXPERIMETAL GROUP

POST TEST

EXPERIMETAL GROUP

CONTROL GROUP.

ANNEXURE- J

MASTER SHEET

A. MASTER SHEETS OF EXPERIMENTAL GROUP:-

a. sheet of socio demographic variables of experimental group.

Sl. no	Age	Gender	Qualifi Cation	Religion	Marital status	Socio Economic status	Type of family	Diet	Previous Occupation	Duration of pain	Nutritional status	Treatment for joint pain	Physical activities performed per day	History of comorbid Illness	
1	60	b	b	a	a	b	a	c	a	a	c	b	c	b	
2	71	b	b	a	d	b	a	c	a	c	b	b	b	b	
3	62	a	b	a	a	b	a	c	d	b	b	b	c	b	
4	60	a	b	a	a	b	b	c	b	a	a	b	c	a	DM
5	63	b	b	a	d	b	a	c	a	c	b	b	b	b	
6	67	b	b	a	d	b	a	c	a	c	c	b	b	b	
7	66	b	b	a	a	b	a	c	a	a	b	b	c	b	
8	68	a	b	a	a	b	a	c	d	c	b	b	b	a	DM
9	68	b	b	a	d	b	a	c	b	c	a	b	c	b	
10	61	a	b	a	a	b	b	c	d	b	c	b	b	a	DM
11	69	b	b	a	a	b	a	c	a	b	b	b	c	b	
12	73	b	b	a	a	b	a	c	a	c	c	b	b	b	
13	62	a	b	a	a	b	a	c	d	b	b	b	c	b	
14	67	a	b	a	d	b	b	c	d	c	c	b	b	a	HTN , DM
15	69	b	b	a	d	b	a	c	b	b	b	b	c	b	
16	71	a	b	a	d	b	a	c	d	c	b	b	c	b	
17	62	b	b	a	d	b	a	c	d	a	c	b	b	b	
18	72	a	b	a	d	b	a	c	d	c	a	b	c	b	
19	62	b	b	a	d	b	b	c	a	c	b	b	c	b	
20	60	b	b	a	d	b	a	c	a	b	c	b	c	a	HTN, DM
21	70	b	b	a	d	b	a	c	b	c	b	b	c	b	
22	73	a	b	a	d	b	a	c	b	c	c	b	c	b	
23	67	b	b	a	d	b	b	c	a	b	c	b	b	a	DM

24	68	a	b	a	d	b	a	c	d	c	b	b	b	b	
25	76	b	b	a	d	b	b	c	b	c	b	b	b	a	ASTHAM
26	74	b	b	a	d	b	a	c	a	c	b	b	c	b	
27	78	b	b	a	a	b	a	c	b	c	a	b	b	b	
28	62	b	b	a	a	b	b	c	a	c	b	b	b	b	
29	60	a	b	a	d	b	b	c	d	b	c	b	b	b	
30	62	a	b	a	d	b	a	c	b	b	b	b	c	b	
31	70	a	b	a	d	b	a	c	b	b	b	b	b	a	HTN
32	62	b	b	a	d	b	a	c	b	c	c	b	c	b	
33	78	b	b	a	d	b	b	c	a	c	b	b	b	b	
34	65	b	b	a	d	b	a	c	a	c	c	b	c	a	DM
35	68	b	b	a	a	b	a	c	a	b	b	b	c	b	
36	65	a	b	a	a	b	a	c	b	a	c	b	c	b	
37	65	b	b	a	d	b	b	c	a	c	b	b	b	a	HTN, DM
38	70	b	b	a	d	b	a	c	a	c	c	b	b	b	
39	62	b	b	a	a	b	b	c	b	a	b	b	c	b	
40	60	b	b	a	a	b	a	c	b	b	b	b	c	a	HTN
41	70	b	b	a	a	b	a	c	d	a	c	b	b	b	
42	68	b	b	a	a	b	a	c	a	c	b	b	b	b	
43	63	b	b	a	a	b	a	c	a	b	b	b	b	b	
44	60	b	b	a	d	b	a	c	a	b	c	b	b	b	
45	61	b	b	a	d	b	a	c	a	c	a	b	c	b	

SIGNATURE OF THE RESERCHER

SIGNATURE OF THE GUIDE

b. MASTER SHEET OF TOOL (OXFORD KNEE SCORE SCALE)

	PRE-TEST													POST TEST											
Sl	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total
1	2	2	3	2	3	2	4	2	4	2	3	3	32	3	3	3	2	3	4	4	3	4	3	3	3	38
2	2	2	2	2	3	3	2	3	2	2	3	2	28	2	2	2	2	3	3	2	3	3	2	3	3	30
3	3	2	1	2	3	1	1	2	2	2	1	2	22	3	2	2	2	3	2	3	2	2	3	2	3	29
4	2	3	3	2	3	3	3	3	3	2	3	2	32	2	3	3	4	3	4	4	4	3	4	4	2	40
5	2	1	2	3	2	2	3	2	1	2	3	3	26	3	3	3	3	2	3	2	3	2	3	2	3	32
6	3	2	3	2	2	1	2	2	1	2	2	2	24	2	2	2	3	2	3	1	3	2	2	3	3	28
7	2	3	1	3	3	4	2	3	2	3	3	2	31	3	2	3	3	4	2	3	3	3	3	3	3	35
8	2	3	2	2	4	3	3	2	2	3	4	3	33	3	3	3	3	4	4	4	3	3	4	3	4	41
9	2	3	2	3	2	2	3	2	3	2	4	2	30	2	3	3	4	4	3	4	4	4	4	3	3	41
10	2	2	3	3	2	3	2	2	3	1	2	2	27	2	2	4	3	4	4	4	4	3	4	4	3	41
11	3	2	2	2	3	2	3	3	4	2	3	2	31	2	2	3	4	3	4	3	4	4	2	3	4	38
12	2	3	2	1	3	1	4	3	3	3	2	3	30	2	4	3	4	3	4	4	4	2	4	4	3	41
13	2	2	2	1	2	2	3	4	1	1	2	2	24	3	3	2	3	3	3	4	4	4	3	4	4	40
14	1	3	3	3	3	3	3	2	3	3	4	3	34	2	3	2	4	3	4	3	3	3	3	4	3	37
15	1	2	3	1	3	1	1	2	5	1	1	3	24	3	4	3	2	3	4	3	4	3	4	4	4	41

16	2	3	2	1	1	2	2	2	2	3	1	1	22	2	3	3	4	2	3	3	4	4	3	3	3	37
17	2	2	2	3	2	2	3	3	1	2	1	2	25	3	3	2	3	4	2	2	3	3	4	3	2	34
18	1	2	2	3	2	3	1	1	2	1	2	1	21	4	2	4	3	3	3	3	4	2	3	4	2	37
19	2	2	3	2	1	2	2	2	3	3	1	2	25	2	3	3	3	2	3	2	3	3	2	3	3	32
20	2	2	4	3	3	2	3	3	2	3	3	3	33	2	2	4	3	4	3	4	4	3	4	3	3	39
21	2	2	4	2	3	3	4	2	3	2	2	3	32	2	3	3	4	3	3	4	4	4	3	4	4	41
22	1	2	2	3	4	2	2	2	3	4	3	3	31	3	3	3	4	2	3	4	3	4	3	4	4	40
23	1	2	2	3	2	1	2	2	3	1	2	1	22	3	4	3	4	4	3	4	3	4	3	4	3	42
24	1	2	3	1	2	1	2	2	2	1	2	1	20	4	3	3	4	3	4	2	4	3	4	4	3	41
25	2	3	1	2	3	1	1	1	2	3	2	2	23	2	2	2	2	3	2	3	2	2	2	2	4	28
26	2	3	2	3	2	2	2	3	4	2	3	3	31	3	3	3	2	3	2	3	3	2	3	3	4	34
27	2	1	1	2	2	2	2	2	3	2	1	3	23	2	3	2	2	2	3	3	3	3	3	2	3	31
28	1	2	1	2	1	2	1	2	3	1	2	2	20	3	2	2	2	3	3	2	2	2	3	2	2	28
29	1	3	2	2	3	3	3	3	4	3	2	3	32	3	3	2	2	2	2	2	3	3	3	3	3	31
30	2	1	1	3	2	4	3	1	2	2	1	2	24	2	3	3	4	3	4	3	4	4	3	4	3	40
31	1	1	3	1	4	2	1	2	2	2	2	1	22	3	2	2	2	2	3	3	3	3	2	3	2	30
32	2	2	3	2	3	3	1	4	3	4	3	3	33	3	3	3	4	3	3	4	3	4	4	3	3	40
33	1	3	1	3	2	2	2	1	4	1	3	2	25	2	4	3	3	4	3	4	3	4	4	4	4	42

34	2	3	1	2	2	3	2	3	2	3	4	3	30	2	3	3	3	2	2	2	3	4	3	4	3	34
35	2	3	3	1	4	3	3	2	3	3	3	3	33	3	3	3	3	4	4	4	4	3	2	3	4	40
36	3	1	2	2	1	3	1	2	2	1	3	2	23	2	3	3	3	4	4	3	4	4	4	3	3	40
37	1	2	2	1	4	1	1	1	1	2	2	2	20	2	3	3	4	3	3	3	3	4	3	3	3	37
38	1	3	2	2	3	2	2	1	3	1	2	2	24	2	3	3	1	3	3	4	3	2	3	2	3	32
39	2	1	1	2	4	3	2	3	4	2	2	3	29	2	2	2	2	2	2	2	3	3	2	2	4	28
40	3	2	3	3	3	4	3	1	4	3	3	3	35	3	3	3	3	4	4	3	4	3	4	4	3	41
41	1	2	2	1	3	2	3	2	2	1	2	1	22	3	3	3	4	3	4	3	4	4	4	3	3	41
42	2	1	2	2	1	3	2	3	1	3	2	3	25	2	1	3	4	2	3	4	2	4	3	2	3	33
43	2	2	3	2	2	2	1	3	3	2	2	2	26	2	2	3	4	3	4	3	4	3	4	4	4	40
44	2	2	1	3	1	2	1	1	1	2	2	2	20	3	2	4	4	4	3	4	3	4	3	4	3	41
45	3	2	1	2	2	3	1	2	3	1	2	1	23	2	3	2	3	3	3	3	3	4	4	3	4	37

SIGNATURE OF THE RESERCHER

SIGNATURE OF THE GUIDE

B. MASTER SHEETS OF CONTROL GROUP:-

a. Master sheet of socio demographic variables of Control group

Sl. No	Age	Gender	Qualification	Religion	Marital status	Socio Economic status	Type of family	Diet	Previous Occupation	Duration of pain	Nutritional status	Treatment for joint pain	Physical activities performed per day	History of comorbid Illness	
1	60	b	b	a	a	b	a	c	a	b	b	b	b	b	
2	71	a	b	a	a	b	a	c	d	a	c	b	c	b	
3	62	b	b	a	d	b	a	c	b	b	b	b	c	b	
4	60	a	b	a	a	b	a	c	d	c	b	b	b	b	DM
5	63	a	b	a	d	b	b	c	b	b	b	b	c	b	
6	67	b	b	a	a	b	a	c	a	c	b	b	b	b	
7	66	a	b	a	d	b	a	c	d	c	b	b	b	a	
8	68	b	b	a	d	b	a	c	a	c	c	b	b	b	DM
9	68	b	b	a	d	b	a	c	b	b	b	b	c	b	
10	61	a	b	a	d	b	b	c	b	c	c	b	b	b	DM
11	69	b	b	a	d	b	a	c	a	b	b	b	b	b	
12	73	b	b	a	d	b	a	c	a	c	b	b	b	b	
13	62	b	b	a	a	b	a	c	a	a	b	b	c	a	
14	67	b	b	a	a	b	a	c	b	c	c	b	b	b	HTN , DM
15	69	b	b	a	a	b	a	c	a	c	c	b	b	b	
16	71	a	b	a	a	b	a	c	d	c	b	b	b	b	
17	62	b	b	a	d	b	b	c	a	c	a	b	b	b	
18	72	a	b	a	a	b	b	c	d	b	b	b	c	b	
19	62	b	b	a	a	b	a	c	a	c	b	b	c	b	
20	60	a	b	a	a	b	a	c	d	a	b	b	b	a	HTN, DM
21	70	a	b	a	a	b	b	c	a	a	b	b	c	b	

22	73	b	b	a	d	b	a	c	a	c	b	b	b	b	
23	67	a	b	a	a	b	a	c	d	b	b	b	c	b	DM
24	68	b	b	a	d	b	a	c	b	a	c	b	b	b	
25	76	a	b	a	d	b	a	c	b	b	b	b	c	a	ASTHA MA
26	74	b	b	a	d	b	a	c	b	b	c	b	b	b	
27	78	a	b	a	a	b	a	c	d	a	b	b	c	b	
28	62	b	b	a	d	b	b	c	a	b	c	b	c	a	
29	60	a	b	a	a	b	a	c	d	a	a	b	b	b	
30	62	b	b	a	a	b	a	c	b	b	b	b	c	a	
31	70	a	b	a	a	b	a	c	d	c	c	b	b	b	HTN
32	62	b	b	a	d	b	a	c	a	b	a	b	b	b	
33	78	b	b	a	a	b	a	c	a	c	b	b	b	b	
34	65	a	b	a	d	b	b	c	d	c	c	b	b	b	DM
35	68	a	b	a	a	b	a	c	d	b	c	b	c	a	
36	65	b	b	a	a	b	a	c	a	c	a	b	b	b	
37	65	a	b	a	d	b	a	c	b	a	b	b	b	b	HTN, DM
38	70	b	b	a	a	b	a	c	a	a	a	b	c	a	
39	62	b	b	a	a	b	b	c	a	c	c	b	c	b	
40	60	a	b	a	d	b	a	c	d	b	b	b	b	b	HTN
41	70	b	b	a	d	b	a	c	b	b	a	b	b	b	
42	68	a	b	a	a	b	a	c	d	a	c	b	c	b	
43	63	b	b	a	d	b	b	c	a	c	b	b	c	b	
44	60	b	b	a	d	b	a	c	a	a	c	b	b	b	
45	61	b	b	a	d	b	a	c	a	c	b	b	c	b	

SIGNATURE OF THE RESERCHER **SIGNATURE OF THE GUID**

b. MASTER SHEET OF TOOL (OXFORD KNEE SCORE SCALE)

	PRE-TEST													POST TEST											
Sl. No.	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q10**	**Q11**	**Q12**	**Total**	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q10**	**Q11**	**Q12**	**Total**
1	2	2	2	2	2	1	4	3	2	1	2	2	25	1	2	2	2	2	1	4	3	2	1	2	2	24
2	2	2	3	1	3	3	2	3	2	2	3	2	28	2	2	3	1	3	3	2	3	2	2	3	2	28
3	1	2	2	2	3	1	1	2	2	2	1	2	21	1	2	2	2	3	1	1	2	2	2	1	2	21
4	3	3	4	2	3	3	3	3	3	2	3	2	34	1	3	4	2	3	3	3	3	3	2	3	2	32
5	1	2	2	2	2	1	2	2	1	2	2	2	21	1	1	2	2	1	1	2	2	1	2	2	2	19
6	2	1	2	3	1	2	2	3	2	1	2	3	24	2	1	2	3	1	2	2	3	2	1	2	3	24
7	2	3	2	3	3	4	2	3	2	3	3	2	32	2	3	2	3	3	4	2	3	2	3	3	2	32
8	1	3	3	2	4	3	3	2	2	3	4	3	33	1	3	3	2	4	3	3	2	2	3	4	3	33
9	2	3	1	3	2	2	3	2	3	2	4	2	29	2	3	1	3	2	2	3	2	3	2	4	2	29
10	2	2	2	3	2	3	4	2	4	2	2	2	30	2	2	2	3	2	3	4	2	4	2	2	2	30
11	1	2	3	2	3	2	3	3	4	2	3	2	30	1	2	3	2	3	2	3	3	4	2	3	2	30
12	3	3	2	1	3	3	4	3	3	3	2	3	33	2	3	2	1	3	3	4	3	3	3	2	3	32
13	2	2	1	1	2	2	3	4	2	2	2	2	25	2	2	1	1	2	2	3	4	2	2	2	2	25
14	2	3	3	4	3	1	3	2	4	2	4	3	34	2	3	3	2	3	1	2	2	3	2	4	3	30
15	3	2	2	1	3	1	1	2	5	1	1	3	25	3	2	2	1	3	1	1	2	5	1	1	3	25

16	2	3	1	1	1	2	2	2	2	3	1	1	21	2	3	1	1	1	1	2	2	2	2	1	1	19
17	2	2	3	3	2	2	3	4	3	2	1	2	29	2	2	3	3	2	2	3	4	3	2	1	2	29
18	1	2	2	3	4	3	2	1	2	2	2	1	25	1	2	2	3	4	3	2	1	2	2	2	1	25
19	2	2	3	2	1	2	2	2	3	3	1	2	25	1	2	2	2	1	2	1	2	1	2	1	2	19
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21	1	2	1	2	3	3	4	2	3	2	2	3	28	1	2	1	2	3	3	4	2	3	2	2	3	28
22	2	2	2	3	4	2	3	2	4	4	3	3	34	2	2	2	3	4	2	3	2	4	4	3	3	34
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25	1	3	3	2	3	1	1	1	3	3	2	2	25	1	3	3	2	3	1	1	1	1	3	2	2	23
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27	1	1	2	2	2	2	2	2	3	2	1	3	23	1	1	2	1	2	2	2	1	2	1	1	3	19
28	2	3	3	2	1	2	1	3	3	1	2	2	25	2	3	3	2	1	2	1	3	3	1	2	2	25
29	1	3	2	2	3	3	3	3	4	3	2	3	32	1	3	2	2	3	3	3	3	1	3	2	3	29
30	1	1	2	3	2	4	3	4	2	2	2	3	29	1	1	2	3	2	4	3	4	2	2	2	3	29
31	2	1	2	1	4	2	2	2	2	3	2	1	24	2	1	2	1	2	2	2	1	2	1	1	1	18
32	2	2	2	2	2	2	1	4	2	4	3	3	29	2	2	2	2	2	2	1	4	2	4	3	3	29
33	1	3	2	3	2	2	2	1	4	1	3	2	26	1	3	2	3	2	2	2	1	4	1	3	2	26
34	2	3	3	2	2	3	2	3	2	3	4	3	32	2	2	2	1	2	1	2	1	1	1	2	2	19

35	1	3	3	1	4	3	3	3	4	3	4	3	35	1	3	3	1	4	3	3	3	4	3	4	3	35
36	2	1	2	2	1	3	1	2	2	1	3	2	22	2	1	2	2	1	3	1	2	2	1	3	2	22
37	2	2	2	1	4	1	1	1	1	2	2	2	21	2	1	2	1	3	1	1	1	1	2	2	2	19
38	2	2	2	2	3	1	2	1	3	1	3	2	24	2	2	2	2	1	1	2	1	2	1	1	2	19
39	3	1	1	2	1	3	2	2	3	2	2	3	25	3	1	1	2	1	3	2	2	3	2	2	3	25
40	2	2	3	3	3	4	3	1	4	3	3	3	34	2	2	3	3	3	4	3	1	4	3	1	3	32
41	1	2	2	2	2	4	4	2	2	1	2	1	25	1	2	2	2	2	4	4	2	2	1	2	1	25
42	2	3	3	2	3	1	2	3	3	2	2	2	28	2	3	3	2	3	1	2	3	3	2	2	2	28
43	1	2	3	2	2	3	1	3	4	4	2	2	29	1	2	3	2	2	3	1	3	4	4	2	2	29
44	2	2	2	3	3	2	1	2	2	4	2	4	29	2	2	2	3	3	2	1	2	2	4	2	4	29
45	2	2	1	1	2	3	1	2	3	1	2	1	21	1	2	1	1	2	2	1	2	1	1	2	1	17

SIGNATURE OF THE RESERCHER

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Certificate of Plagiarism Check

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Name of the Student	Bindushree B
Registration Number	23NC289
Name of the Supervisor / Guide	Dr. Vani R
Department	COMMUNITY HEALTH NURSING
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