

**EFFECTIVENESS OF CAMPHOR OIL APPLICATION ON
REDUCTION OF JOINT PAIN AMONG MENOPAUSAL
WOMEN AT SELECTED RURAL AREAS,
COIMBATORE**

By

Reg. No: 301226004

**A DISSERTATION SUBMITTED TO THE TAMIL NADU
Dr. M. G. R. MEDICAL UNIVERSITY, CHENNAI IN
PARTIAL FULFILLMENT OF REQUIREMENT
FOR THE DEGREE OF MASTER OF
SCIENCE IN NURSING**

APRIL 2014

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Approved by

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APPROVED BY THE DISSERTATION COMMITTEE ON NOVEMBER 2012

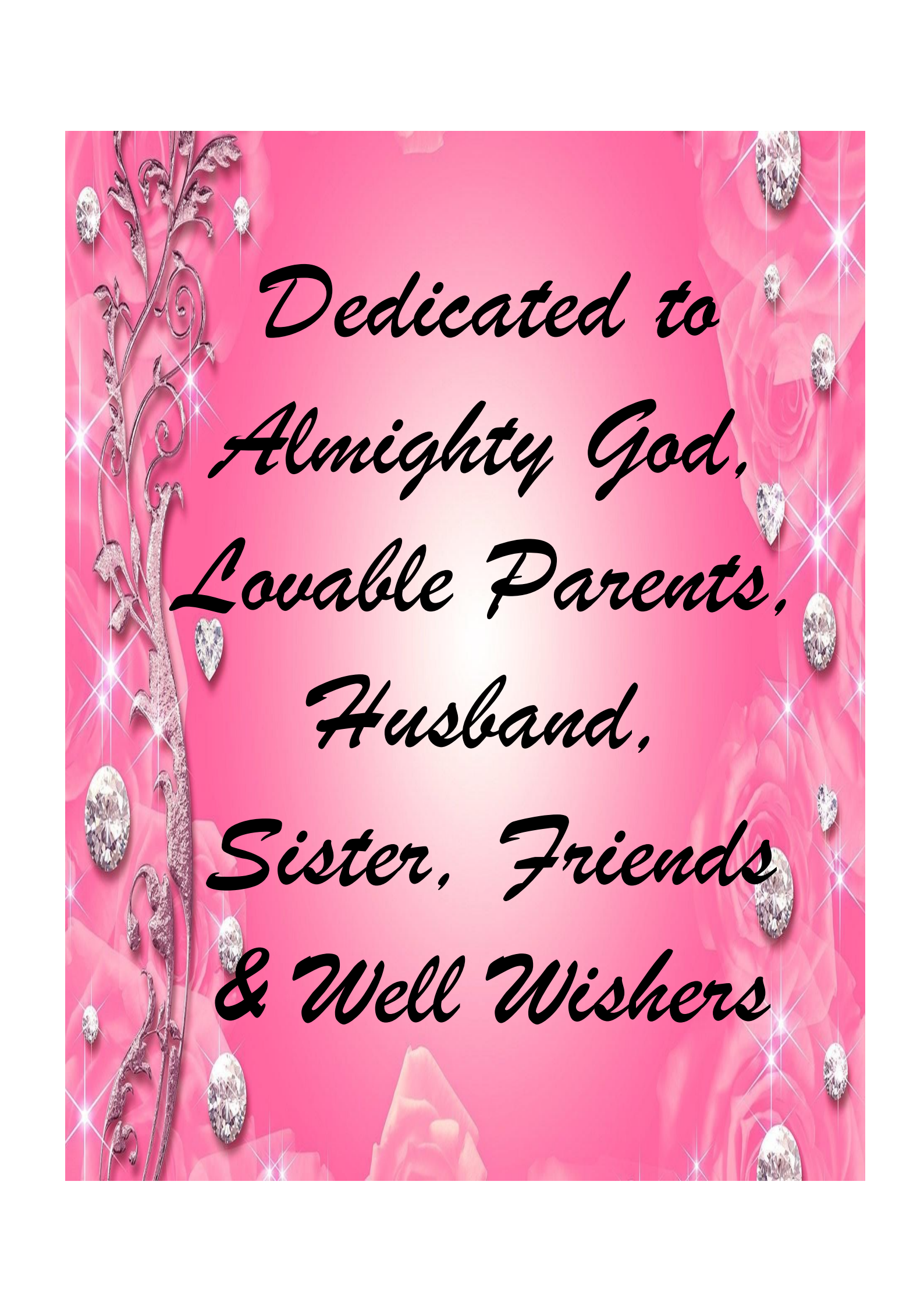
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The background is a vibrant pink color. It features a pattern of soft, light-colored roses. Scattered throughout are several sparkling diamonds of various shapes and sizes. On the left side, there is a vertical, ornate silver vine with intricate scrollwork and small leaves. The text is written in a black, elegant cursive font, centered on the page.

*Dedicated to
Almighty God,
Lovable Parents,
Husband,
Sister, Friends
& Well Wishers*

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CHAPTER - I

Introduction

Behind every beautiful thing, there's some of pain

- Bob Dylan

According to world health organization (1948), Health is a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity and ability to lead a socially and economically productive life.

Good health is a prerequisite to human productivity and development process. Health is vital for ethical, artistic, material and spiritual development of man. Good health is a basic right and produces civic consciousness.

According to world health organization (2010), pain has been defined as “an unpleasant sensory or emotional experience associated with actual or potential tissue damage, or described in terms of such damage”.

Menopause means permanent cessation of menstruation at the end of reproductive life due to ovarian follicular inactivity.

Robert F. Casper (2013) said that menopause is a normal part of the aging process. It occurs naturally after a woman's ovaries stop producing eggs and the production of hormones. As menopause involves biological and psychosocial changes that may significantly impair quality of life. In reality, each woman experiences menopause differently. It is not always possible to tell these changes are related to

aging, menopause or both. The hormone oestrogen has an important role in maintaining joint and bone health. After the menopause the oestrogen level in the body begin to drop, this leads to joint pain among women. So there is a need of reducing joint pain among menopausal women by introducing home remedies without any side effect.

According to statistics of the Indian Rheumatology Association (2010), India stands second in the world in terms of citizen suffering from joint pain and among the 61 million people living in Karnataka 28.4 % over the age of 50 suffer from severe joint pain. Among these, 15 percent of the population have some degree of limitation of movement, and 6 percent cannot perform daily activities.

Mayo Clinic (2013) explained that joint pain is discomfort that arises from any joint (the point where two or more bones meet). Joint pain is sometimes called Arthritis or Arthralgia. Joint pain can be mild, causing some soreness each time you move your joint or joint pain can be severe, making it impossible to use your joint. Women are the persons who are most affected by joint pain than men due to menopause, so their daily living activity are altered. Most of the joint pain can be successfully managed at home itself through various ways.

According to Sharan Shivraj Patil (2011), Joint pain associated with weakening of the bones caused by the loss of bone density. In women, it's mostly caused by a drop in bone strengthening estrogen after menopause. Around the age of 35 both males and females start losing calcium, but women loose more during the menopausal years and are therefore more affected than men. In general, several of

pain involves in human life which affect the daily living activities of the people. One of the leading problems for women after the menopause is joint pain.

Palacios, et al. (2010) reported that muscle and joint ache was the most commonly reported symptom were 52.6% in Singapore in a mixed population of Chinese, Malay and Indian women. Among peri and postmenopausal women in northern India, the most prevalent symptom was muscle and joint pains (55.8%).

Shuvankar Mukherjee, et al. (2012) conducted a cross sectional survey at the sector clinics of urban health centre of All India Institute of Hygiene and Public Health, Kolkata to determine the magnitude of the problem of psychological distress in relation to menopausal status. The sample size was 189, women aged 40-55 years were enrolled in this study. The data was collected through general health questionnaire. The result revealed that most common menopausal symptoms were body and joint pain (60.3%), followed by hot flush (36.5%). Around 28.6% of the study subjects had evidence of psychological distress, which was more common among peri-menopausal women.

Maglingo. M (2010) described that Arthralgia is experienced by more than half of the women around the time of menopause. The causes of joint pain in postmenopausal women can be difficult to determine as the period of menopause coincides with rising incidence of chronic rheumatic conditions such as osteoarthritis. Nevertheless, prevalence of arthralgia does appear to increase in women with menopausal transition and is thought to result from reduction in oestrogen levels.

Nigel Arden (2011) states that knee pain of some kind is a common complaint in middle aged and mature women, with varying possible causes leading to varying types of pain. A new study on knee-pain patterns assessed periodically over 12 years in a representative UK population finds that nearly two-thirds (63%) of women aged 50 years and over experience knee pain at least once, persistently, or intermittently over such a period.

Egypt Soc Parasitol (2002) explained that Camphor based oils are known to relieve pains related to joints, Arthritis, sciatica, sprain, backache etc. These oils are potent and have a higher efficacy to give relief in painful muscular-skeletal condition like lumbago, muscle trauma, sciatica, sprain, stiffness, swelling, pain and inflammation of joints. So, it is effective in treating the arthritis and Rheumatism.

Jan Sheehan (2011) have reported arthritis or chronic joint pain affect nearly 70 million Americans (41 million of whom are women, 24 of them are men). Women are more than men to have conditions that cause joint pain, experience hormone fluctuations that affect their vulnerability, and may not be physiologically equipped to deal with pain.

Priya Sharmaeal (2013) conducted a study on assessment of knowledge on perimenopause, symptoms experienced and practices of perimenopausal women in northern Indian. The symptoms which always present were frequent urination (65.40%), back pain (54.80%), weight gain (49%), night sweats (49.2%), tiredness(47.1%), joint pains (44.20%), mood swings (41.30%), irritability (40.40%), feel tingling in hands and feet (40.40%), difficulty in concentrating(39.40%), poor

memory (36.48%), difficulty in falling asleep (36.48%), feel depressed (33.60%) and sudden sensation of heat with flushing (45.12%)

CNN'S Elizabeth Cohen (2013) stated that two-thirds of post 50 years women experience knee pain according to the American College of Rheumatology. In United States, about 20 million people seek medical care for knee pain each year. The condition can develop suddenly (acute knee pain) or gradually over time (chronic knee pain). In people over the age of 50 years, joint pain is the most common cause of pain in the knees.

Nicole Brown (2010) stated that camphor is an herb that can be extracted from the wood and root of the camphor tree. Although camphor oil can have potentially harmful effects if ingested, benefits can be observed when the oil is used topically. Camphor oil may also be used as a liniment to relieve pain in muscles or joints. Be aware that some individuals may be sensitive to camphor and experience skin irritation. Liniments and creams containing camphor should not be applied to areas of the skin that have open wounds or have been severely burned.

Need for the Study

The Hindu News Paper (August 30, 2013) has published an article which states that the Coimbatore Corporation Council initiated to set up an ayurveda bone and joint clinic without side effects. The subject tabled in this regard said that in the expanded city that had a population of 16 lakhs, 50 percent of the people aged over 45 invariably suffered from bone and joint pain.

According to the North American Menopause Society (2010), women are asked about the symptoms they attribute to menopause. However, in some midlife population surveys, more women reported aches and joint pain than any other symptom. And, for as many as 41% of women approaching menopause and 57% of women 2 years past menopause, those symptoms were described as significant.

Siseles. N (2010) described that among Chinese peri menopausal women, musculoskeletal conditions were the top complaints reported by the respondents, followed by headaches and psychological symptoms. In another study, Climacteric symptom was muscle and joint pain which was reported in 56.6% of 978 peri menopausal women. The studies have shown that the strongest association with menopausal status, and considered to be the most common and most severe, was muscle and joint pains.

Kim Breske (2011) revealed that a women who reaches the age of around 45-50 invariably undergoes some hormonal changes due to the onset of menopause. During this period, many women may often experience joint pain due to some hormonal imbalances frequently.

Peat. G (2001) conducted a study to assess the prevalence of knee pain in north of England. The data were collected through health assessment questionnaires. 12.5% of adults aged over 55 years had knee pain and any degree of disability. The result revealed that about one quarter of people over the age of 55 years will report a significant episode of knee pain in the past year. Painful, severely disabling radiographic knee pain affects about 1.5% of adults over the age of 55 years. This

proportion is higher in the older age categories. Knee pain associated with mild to moderate disability affects up to 10% of adults aged over 55 years.

Julie Solomon (2010) stated that muscle and Joint pains are very common in the world and there are natural alternatives available that can give relief and lessen the suffering. One of these techniques is application of pain relief Camphor oil externally. It works as a great muscle pain reliever.

Thaqafi (2013) stated that in tropical regions of Asia, camphor oil has been extracted from the camphor tree (a member of the laurel family) for centuries if not thousands of years. Camphor oil is normally extracted from wood chips. There is a whole plethora of uses for camphor from cooking (Indian cuisine) to medicines to perfumes to insect repellents. It is used to relieve joint pain in arthritis and osteoarthritis sufferers.

Veena Deo (2012) stated that camphor oil can be used topically for pain relief. Camphor oil can be used externally to relieve arthritis, joint pain, backaches, sprains etc. Camphor is a waxy, white or transparent solid substance with a strong aromatic smell. Camphor oil is readily absorbed through skin and produces a feeling of cooling similar to that of menthol. Major pains such as joint pain, Backaches, Neuralgia and Rheumatic pain can be treated with Camphor externally. It is an herbal counter-irritant and most often used as an analgesic in topical treatment. Camphor oil can act as an analgesic too.

Sheela Rani Chunkath (2012) revealed that camphorated oil relieves joint pain. In the Ayurvedic pharmacopeia, one of the popular tailams is Karpuradi Tailam

which is a blend of camphor or karpooram and oil. The camphor oil extremely effective for joint and muscle pains. Nothing is very effective against a disease or joint pain which is decades old. At best, it can prevent further deterioration or alleviate the disease a little. Camphor has anti-inflammatory and analgesic properties.

The present study aims to reduce joint pain among menopausal women by introducing the home remedies, thereby reducing the side effects, to promote the daily living activities of the people and to improve the quality of life. The easy availability of camphor, its medicinal properties to relieve pain and its low cost with no side effects in topical application makes camphor as an adjuvant therapy in reduction of joint pain among menopausal women.

Most of the menopausal women aged between 45-60 years are suffering from joint pain caused by a drop in bone strengthening estrogen, it occurs after menopause. The researcher wishes to search for an alternative route of treatment (topical) which can be non - invasive, safe and effective. Through this study, the researcher aims to assess the effectiveness of camphor oil application on joint pain among menopausal women.

Statement of the Problem

Effectiveness of camphor oil application on reduction of joint pain among menopausal women at selected rural areas, Coimbatore.

Objectives

- To assess the severity of joint pain among menopausal women.
- To apply camphor oil on the joint among menopausal women.

- To reassess the severity of joint pain among menopausal women.
- To associate the findings with demographic variables of menopausal women.

Hypothesis

There is a significant effect on severity of joint pain among menopausal women after the application of Camphor oil.

Operational Definitions

Assess

It is the measurement of effectiveness of camphor oil application on reduction of joint pain.

Effectiveness

It refers to the outcome of application of camphor oil to which extent it reduces the severity of joint pain among menopausal women.

Camphor Oil

It refers to the mixture of 375 grams of camphor in 1500 ml of coconut oil that is applied on the painful joints of menopausal women 10-15 minutes twice a day.

Menopausal Women

It refers to women who attained menopause.

Joint Pain

It refers to the pain on the joint.

Rural Area

It refers to a country side area, which located outside the cities and towns.

Assumptions

- Menopausal Women whose age 46 years and above will have joint pain.
- Menopausal Women with joint pain will not be able to do their activities of daily living.
- Camphor oil application will be effective in reducing joint pain and improving activities of daily living.

CHAPTER - II

Review of Literature

According to Polit and Hungler (1999) literature review refers to an extensive, exhaustive and systematic examination of publications relevant to the research project. An extensive review of the research and non research literature was done to gain the maximum information.

A literature review is an evaluative report of information found in the literature related to selected area of study. An extensive review of literature was done to gain insight in to the selected problem to have a logical sequence and easy understanding.

For the present study, the related literature is reviewed and organized under the following headings.

- Literature related to prevalence of joint pain among menopausal women.
- Literature related to effectiveness of camphor oil on joint pain.

Literature Related to Prevalence of Joint Pain Among Menopausal Women

Paul Owajiony Dienye, et al. (2013) conducted a cross sectional descriptive study on Frequency of Symptoms and Health Seeking Behaviours of Menopausal Women in an Out-Patient Clinic in Port Harcourt, Nigeria. The sample size was 385. Modified menopause rating scales were used to collect the data. The result revealed that most prevalent menopausal symptoms were muscle pain (87.53%), joint pain (85.45%) and tiredness (80.26%). Urinary symptoms had the least prevalence

(7.79%). Results on the severity of menopausal symptoms showed that 28.25%, 49.84% and 21.9% were experiencing severe, moderate and mild menopausal symptoms, respectively. Loss of libido (79.21 %) was the most severe symptom followed by urinary symptoms (40%). The patent drug dealers were the most consulted (51.4%) followed by health workers (44.7%). The traditional healers were consulted by a small percentage (3.8%).

Ulrich Thiem, et al. (2013) performed a cross-sectional study on prevalence of self-reported pain, joint complaints and knee or hip complaints in adults aged ≥ 40 years in Herne, Germany. The sample size was 2221 participants and the samples were collected by random sampling technique. Pain was assessed by using self complete postal questionnaires. The result revealed that current pain: 59.7%, pain within the past four weeks: 74.5%, current joint pain: 49.3%, joint complaints within the past four weeks and twelve month: 62.8% and 67.4%, respectively, knee as the site predominantly affected: 30.9%, knee bilateral: 9.7%, hip: 15.2%, hip bilateral: 3.5%, knee and hip: 5.5%. Pain and musculoskeletal complaints were significantly more often reported by women.

Martínez (2013) carried out a cross-sectional descriptive study on Urban-rural differences in Spanish menopausal women. The sample size was 10 514. The samples were selected by random-sampling technique of women aged 45-65 years. The results revealed that urban women had a higher prevalence of cardiovascular and osteoporosis risk factors than rural women, although this was not statistically significant. There was a greater frequency of menopausal symptoms in urban women although rural women experienced more hot flushes, depression, joint pain and tingling. In rural women menopausal symptoms were less severe.

Poomalar and Bupathy Arounassalame (2013) conducted a cross-sectional study on the quality of life during and after menopause among rural women at Sri Manakula Vinayagar Medical College and Hospital, Puducherry, from January 2012 to April 2012. 500 women in the age group of 40-65 years were included in the study. The data were collected by menopause specific quality of life questionnaire. The result has shown that mean menopausal age in the study group was 45 years. The most common symptom within study subjects were low back ache (79%) and muscle-joint pain (77.2%). The least frequent symptoms were increase in facial hair (15%) and feeling of dryness during intimacy (10.8%). The researcher concluded that the menopause related symptoms had a negative effect on the quality of life of the perimenopausal and the postmenopausal women.

Elina Hemminki, et al. (2012) conducted a study on high prevalence of vasomotor symptoms among middle-aged women. The researcher stated that, according to the National Institutes of Health 51% of premenopausal and 30–80% of peri- and postmenopausal women reported hot flashes and night sweats. Sleep disturbances are common among all menopausal women (occurring in 16–42% of premenopausal, 39–47% of perimenopausal and 60% of postmenopausal women). However the result revealed 28% of women aged 45–64 years, reported hot flushes, 27% of women reported joint pain, and 38% reported tiredness.

Ruma Dutta, et al. (2012) carried out a cross sectional study on the Menopausal Symptoms in a Rural Area of poonamallee block, Tamil Nadu. The Sample Size was 780 post menopausal women. The cluster sampling method was adopted and 30 clusters were randomly selected by the probability proportionate to

size method. A structured questionnaire was used to collect the information regarding background characteristics. The results revealed that overall prevalence of any one symptom during the post-menopausal period was 88.1%. Among the post-menopausal symptoms, the most frequently reported ones were vasomotor symptoms (60.9%), followed by sleep related symptoms (40.1%), the symptoms of joint pain were reported by 20% of the post-menopausal women and anxiety (35.4%).

Suwarna Madhukumar, Vaishali Gaikwad and Sudeepa (2012) carried out a cross sectional study on a community based study on perceptions about menopausal symptoms and quality of life of post menopausal women in Bangalore rural. 189 postmenopausal women were included in the study. Pretested questionnaires were used to collect the data. The result revealed that mean age at menopause was 49.7 years. 56.92% of the menopausal women felt firmly that they were affected by menopause in negative manner. Most frequent menopausal symptoms were aching in muscle and joints, feeling tired, poor memory, lower backache and difficulty in sleeping. The vasomotor and sexual domains were less frequently complained when compared to physical and psychological domains.

Sweed. H. S, et al. (2012) conducted a cross-sectional study to assess the prevalence of post menopausal symptoms among 400 Egyptian women. Menopausal Rating Scale was applied to all participants in the Arabic language. The results revealed that most prevalent post menopausal symptoms were joint pain (90.3%), followed by sleep problems (84.0%) and physical and mental exhaustion (80.0%). The study concluded that joint pain was commonly seen in menopausal women.

Adedapo. B. Ande, et al. (2011) performed a descriptive cross-sectional study on Features and perceptions of menopausal women in Benin City, Nigeria. In this study 648 women were selected by random sampling technique. The data was collected by using a structured questionnaire. The result shows that the ages of the women studied ranged between 47 and 78 years; mean 57.4 ± 6.3 years. 346 (64.9%) were no longer sexually active. Joint pains (287; 53.8%), hot flushes (272; 51%) and night sweats (22; 42%) were the most common symptoms believed to be related to menopause. The result showed that 302 women (56.7%) actually suffered at least one of the menopause symptoms. Joint pains (52.9%), hot flushes (43.3%) and night sweats (29.8%) were the commonest symptoms experienced. Freedom from monthly bleeding (50.7%) was the most commonly reported advantage of menopause

Bartoces. M, et al. (2011) conducted a cross sectional study on Natural history of menopause symptoms in primary care patients in African American women women aged 40 to 55 years. The sample size was 251. Self-report survey was done. The result revealed that the most commonly reported symptoms were joint/muscle pain and headache, which did not vary by menopausal status. As many as 28.6% of the women with regular menstruation reported hot flashes, and 18.8% had night sweats; although both symptoms were strongly associated with changes in menopausal status

Stanley J. Swierzewski (2011) conducted a prospective population study based on joint pain among women aged from 44 to 57 years in UK. The study includes more than 1,000 women. The cohort is described as representative of women in general in terms of height, weight, and smoking status. The participants completed questionnaires about their knee pain. From their responses the researchers classed the

489 participants who were still in the study at the end into one of four groups, depending on their pain characteristics. The study reveals that 44% of women reported experiencing any days of pain and 23% reported experiencing pain on most days of the previous month. Of those experiencing any pain, 9% had persistent pain, 24% had incident pain, and 29% had intermittent pain. Of those experiencing pain on most days, these figures were 2%, 16% and 18% respectively. The researcher concluded that the results show a significant variability in patterns of knee pain over time in this representative population, with few participants consistently reporting knee pain at each time point.

Yang, D, et al. (2010) conducted a cross-sectional population-based study to explore the prevalence of menopausal symptoms in Chinese women aged 40-65 years living in Guangdong province in southern China. A total of 9939 women were selected by multistage cluster sampling. Women were interviewed by prepared questionnaire about symptoms experienced in the 2 months preceding the survey. The result revealed that the mean age of natural menopause was 48.9 years. The prevalence and severity of menopausal symptoms were low. The three most prevalent symptoms were insomnia, joint and muscle pain, and dizziness (in 37.2%, 35.7%, and 31.5% of the sample, respectively). Hot flushes were experienced by 17.5% of women.

Syed Alwi Syed Abdul Rahman (2010) conducted a cross sectional study to determine the commonly reported menopausal symptoms. The sample size was 356 Sarawakian women aged 40-65 years. The data were collected through modified Menopause Rating Scale. The result revealed that mean age of menopause was 51.3

years (range 47 - 56 years). The most prevalent symptoms reported were joint and muscular discomfort (80.1%); physical and mental exhaustion (67.1%); and sleeping problems (52.2%). Followed by symptoms of hot flushes and sweating (41.6%); irritability (37.9%); dryness of vagina (37.9%); anxiety (36.5%); depressive mood (32.6%). Other complaints noted were sexual problem (30.9%); bladder problem (13.8%) and heart discomfort (18.3%).

Bardel. A, et al. (2009) carried out a cross sectional study on Age-specific symptom prevalence in women 35-64 years old in Swedish, through random sample techniques. The sample size was 4200 women. Data was collected by Gothenburg quality of life instrument. The result revealed that only five symptoms (insomnia, leg pain, joint pain, eye problems and impaired hearing) increased significantly with age. Eleven symptoms (general fatigue, headache, irritability, melancholy, backache, exhaustion, feels cold, cries easily, abdominal pain, dizziness, and nausea) decreased significantly with age. Two symptoms (sweating and impaired concentration) had a biphasic course with a significant increase followed by a significant decrease. The remaining twelve symptoms (difficulty in relaxing, restlessness, overweight, coughing, breathlessness, diarrhoea, chest pain, constipation, nervousness, poor appetite, weight loss, and difficulty in urinating) had stable prevalence with age.

Olaolorun and Lawoyin (2009) conducted a cross sectional community based study on experience of menopausal symptoms by women in an urban community in Ibadan, Nigeria. The sample size was 1,189 women with a age of 40-60 years. The sampling was used by multistage sampling technique. Quantitative data were collected by using a structured questionnaire that included a standardized Menopause

Rating Scale (MRS). Eleven symptom groups were scored for each respondent on a scale of 0-4, with increasing severity for each score and a maximal total score of 44. The result revealed that joint pain and muscular discomfort was the most common reported symptom among all women in this study (59.0%), followed by physical and mental exhaustion (43.0%), sexual problems (40.4%), and hot flashes (39.0%).

Szoeke, et al. (2009) conducted a prospective longitudinal study to investigate the relationship between symptom reporting and radiological arthritis in postmenopausal women through random-effects time-series regression models and questionnaires in Australia. 438 Australian-born women, aged 45-55 years and menstruating at baseline; they were interviewed annually over 8 years. The results revealed that aches and stiff joints were the most commonly reported symptom and reporting increased over time. It concluded that variables significantly associated with reporting bothersome aches and stiff joints were high body mass index (BMI), high negative mood, not being employed, and experiencing the menopausal transitions.

Literature Related to Effectiveness of Camphor Oil on Joint Pain

The National Library of Medicine's (2014) described that Camphor is a rubefacient / counter-irritant medication. Origin of the substance: Camphor may be natural or synthetic. It occurs naturally in the wood of the camphor tree (*Cinnamomum camphora*) and is extracted by steam distillation and crystallization. When camphor is applied on the skin, it is analgesic. Camphor is used exclusively because of its local effects. When rubbed on the skin, it acts as a rubefacient and causes localized vasodilatation (mediated by way of an axon reflex), which gives feelings of comfort and warmth. As an anti-pruritic agent, when applied gently on the skin, it may create a

feeling of coolness, and a mild, local anaesthetic effect, which may be followed by numbness.

Victoria Ann Diaz (2013) conducted a study on Natural analgesic benefits of Camphor and menthol for Muscle Pain. The researcher stated that aromatherapy are used to relieve stress, aches and pains, inflammation, enhance mood with beautiful aromas, and even boost immunity. There are many combinations used for variety treatments. One combination is very effective for chronic muscle and joint pain is camphor and menthol. Camphor is extracted from the wood of an evergreen tree called the camphor laurel. Camphor has a variety of unique uses from plastics, insect repellents, cooking (not all types suitable for ingestion), anti inflammatory, decongestant, sedative, analgesic, and anti microbial. Camphor can be vaporized or absorbed through the skin, it can stimulate the circulatory system and relieve swelling and inflammation, it relaxes the body and the mind, and it can relieve muscle spasms and cramps.

Gilcy George (2011) conducted a study to assess the effectiveness of camphor oil on joint pain among elderly in a selected old age home. 30 samples were selected by Quasi Experimental Research Design (One group pre test – post test design). The level of joint pain assessed by visual analogue scale. The result revealed that statistically significant reduction in the level of pain following topical application of camphor oil among elderly.

Topp. R (2011) conducted a study on the effect of either topical camphor or a placebo on functioning and knee pain among patients with knee Osteoarthritis (OA).

The sample size was 20 individuals with knee OA. The data collected by the performance of functional tasks and self-reporting knee pain by using Visual Analogue Scale. The result revealed that the camphor intervention resulted in significant reductions in pain during the tasks. The placebo condition did not result in any significant changes in pain during the functional tasks. There were no differences detected in functional tasks or pain following the placebo and camphor conditions. It concluded that the findings provide partial support regarding the efficacy of camphor oil to improve functioning and reduce pain among knee OA patients.

Pergolizzi, et al. (2010) conducted double-blind placebo-controlled study on Preliminary observations of novel topical oil with analgesic properties for treatment of acute and chronic pain syndromes. The sample size was 455. The result revealed that camphor is used for managing mild to moderate acute and chronic pain. This oil is safe and effective analgesic for a broad range of patients with acute and chronic pain. In that study, 80% of patients reported that their pain decreased by more than 75%.

Cohen, et al. (2009) conducted a study to assess the ability of a topical application of camphor to reduce pain related to osteoarthritis of the knee. The sample size was 63. The samples were selected randomly. The pain was assessed through the visual analogue scale. The result stated that VAS scores indicated a greater mean reduction in pain for camphor preparation group compared to the placebo group after 8 weeks. After 4 weeks the difference between active and placebo groups in their mean reduction from baseline was 1.2 and after 8 weeks was 1.8. The study

concluded that topical application of camphor is effective in relieving the pain from osteoarthritis of the knee and improvement is evident within 4 weeks.

Macpherson. L. J, et al. (2009) described that several temperature-activated transient receptor potential (thermo TRP) ion channels are the molecular receptors of natural compounds that evoke thermal and pain sensations. Camphor was popularly known for its cooling effect. However, human physiological studies demonstrate a paradoxical role of camphor in modulation of warm sensation, and activate heat-activated TRPV3. The further study revealed that camphor inhibits TRPA1, potentially explaining the use of camphor as an analgesic. Similar to camphor, menthol (initially reported to specific activators of TRPV3 and TRPA1, respectively) also modulates other thermo TRPs. The researcher concluded that many "sensory compounds" presumed to be specific have a promiscuous relationship with thermo TRPs.

Conceptual Framework

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

Tolbot (1995) stated that a conceptual framework is a network of inter-related chances that provide a structure for organising and describing the phenomenon of interest. Research studies are based on the theoretical or conceptual framework that facilitates visualizing the problem and places the variables in a logical context.

The conceptual framework of the present study is based on prescriptive theory by Ernestine Wiedenbach (1969).

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

The aim of the present study is to find out the effectiveness of camphor oil application on joint pain among menopausal women.

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

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

Step 1 : Identifying the Need for Help

Identification determines a client need based on the existence of a need and whether the client realize the need. What prevent the client from meeting the need and whether the client cannot meet the need care. Here the community health nurse explores the menopausal women with joint pain. It includes the following components.

a) General Information

This comprises of the demographic variables.

b) Central Purpose

Central purpose is to reduce joint pain among menopausal women.

c) Prescription

It includes nursing intervention prescribed to meet the central purpose that is camphor oil application.

Step 2 : Ministering the Need for Help

It refers to provision of needed help. Here the community health nurse formulates a plan and which the menopausal women accepts and implement the plan. This includes one component called reality is the camphor oil application which has effect on joint pain. This reality has four components.

a) Agent

The community health nurse as an agent to render the needed help.

b) Recipient

The menopausal women who are suffering from joint pain.

c) Goal

The goal is to reduce joint pain among menopausal women.

d) Framework

It refers to the facilities in which nursing care is provided. Here the framework was Kovilpalayam, Coimbatore.

Step 3: Validating Need for Help

Validation refers to collection of evidence that shows clients needs have been met and its functional activity has been restored as a direct results of nurses action. Validation means assessing the outcome of ministering the needed help. This involves the post assessment of severity of joint pain among menopausal women.

This approach thereby provides convincing of comfort or capacity experienced by the menopausal women and thus enables the researcher to make suitable decision and recommendation to continue or withdrawal or modify nursing intervention proposed for reducing the severity of joint pain among menopausal women.

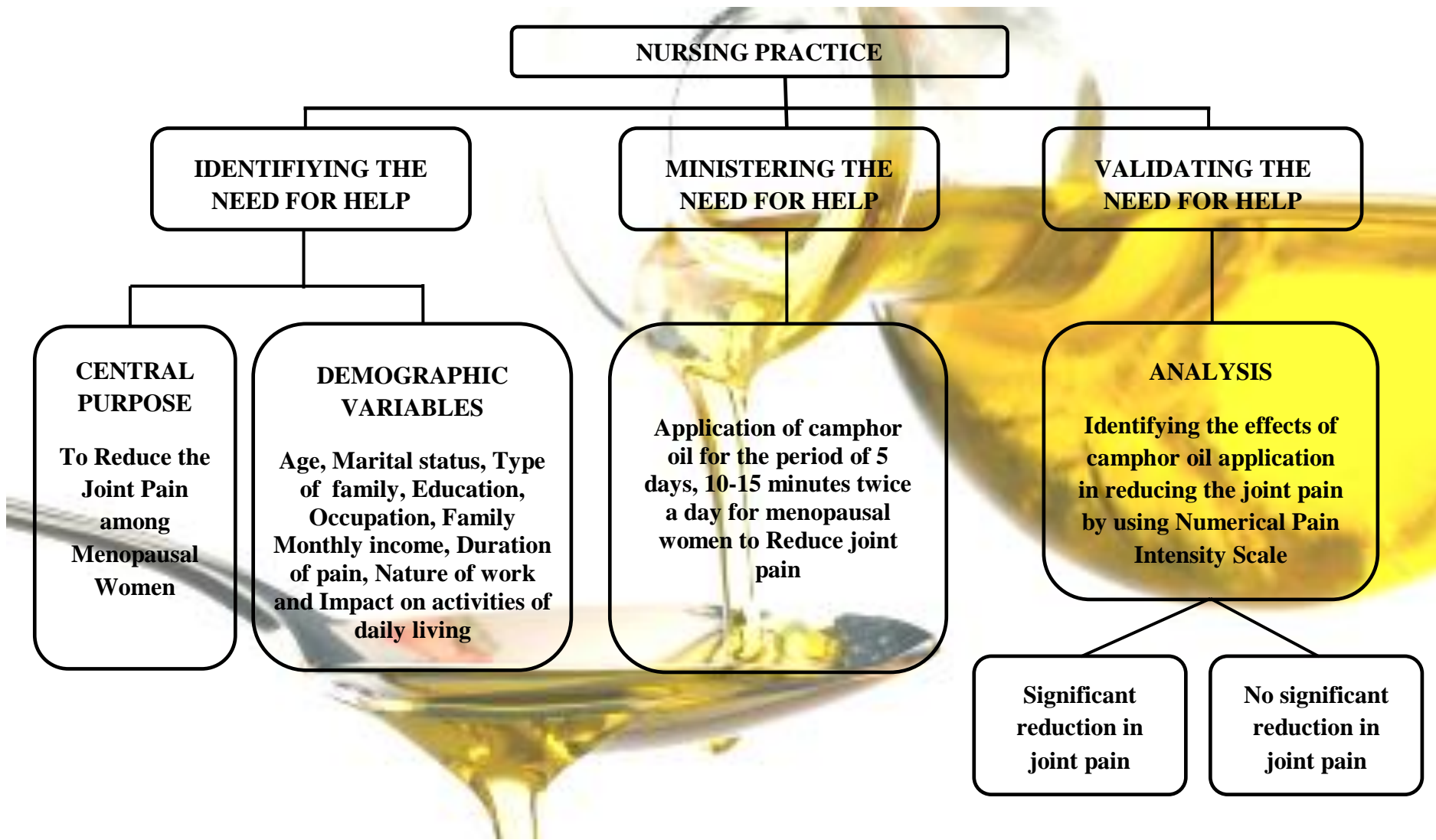


Figure. 1 Modified Conceptual Framework Based on Wiedenbach’s Theory of Helping Art of Clinical Nursing (1964)

CHAPTER - III

Methodology

Methodology is a part of any study which enables the researcher to project out the research undertaken. Research methodology is a way to systematically solve the research problem. It is a science of study how research is done scientifically.

In this section, the researcher discusses the research approach, research design, setting of study, variables, population, sample size, sampling technique, criteria for selection of sample, description of tool, testing of tool, pilot study, data collection procedure and plan for data analysis.

Research Approach

Quantitative approach was used for the present study.

Research Design

The research design provides an overall plan for conducting the study. One group pre test post test pre experimental research design was adopted for the present study. O_1 is the pre test assessment, O_2 is the post test assessment and X is the intervention.

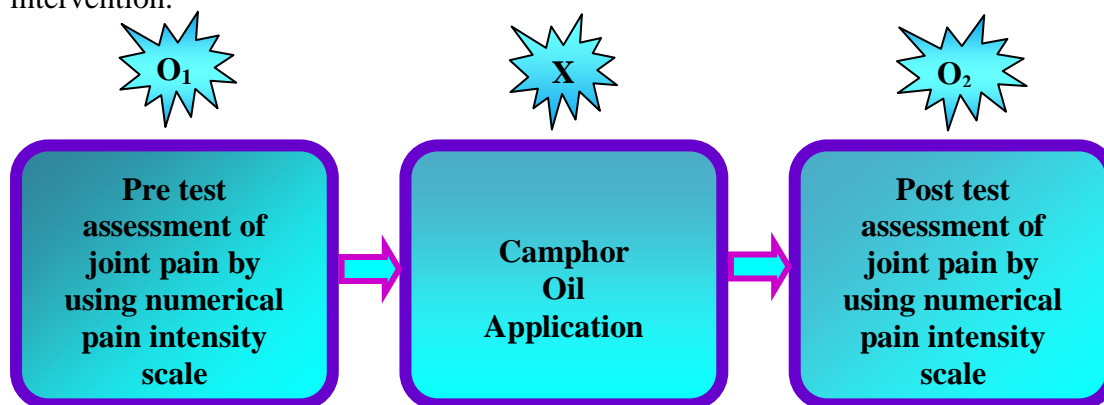


Figure. 2 The Schematic Representation of the Research Design

Setting of the Study

The study was conducted in Kovilpalayam, Coimbatore which is situated 2 kms away from PPG College of Nursing.

Variables

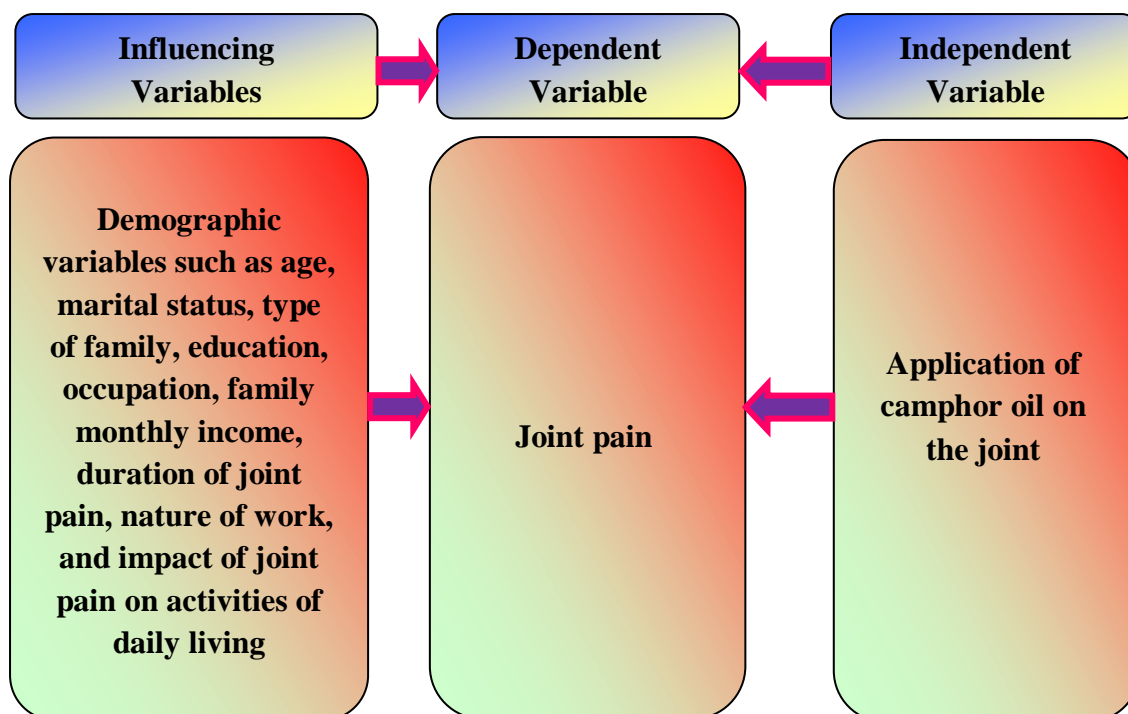


Figure. 3 The Schematic Representation of the Variables

Population

The accessible population includes the Menopausal Women who are suffering from joint pain residing at Kovilpalayam, Coimbatore.

Sample Size

The sample size for the present study was 50 Menopausal Women with joint pain residing in Kovilpalayam, Coimbatore.

Sampling Technique

The samples were selected by using non probability convenience sampling technique.

Criteria for Sample Selection

Inclusion Criteria

- Menopausal Women with joint pain.
- Menopausal Women of 46-60 years.
- Menopausal Women who were willing to participate in this study.
- Menopausal Women who were able to speak and understand Tamil.
- Menopausal Women who were able to follow instruction.

Exclusion Criteria

- Menopausal Women who were taking regular analgesics.
- Menopausal Women who were allergic to camphor oil.
- Menopausal Women who were practicing hot and cold application.
- Menopausal Women who were on any other alternative system of medicine.
- Menopausal Women who were not available at the time of data collection.
- Menopausal Women with seizure disorder.
- Menopausal Women with skin infection.

Description of the Tool

The tool used for data collection procedure was Numerical Pain Intensity Scale to assess the severity of joint pain among Menopausal Women. The tool consists of two sections

Section - A Demographic Variables

Demographic variables include age, marital status, type of family, education, occupation, family monthly income, duration of joint pain, nature of work, and impact of joint pain on activities of daily living.

Section - B Numerical Pain Intensity Scale

Numerical rating scale was a standard tool invented by Mc Caffery (1999) measured from 0-10 equal divisions.

Interpretation of the Tool

It consists of 10 points to assess the level of joint pain on Menopausal women. The level of pain scored based on Numerical Pain Intensity Scale. The maximum score is 10 and the minimum score is 0.

- 0 - No pain
- 1-3 - Mild pain
- 4-6 - Moderate pain
- 7-10 - Severe pain

Testing of the Tool

Content Validity

The tool was given to 6 experts in the field of nursing and medicine for content validity. All comments and suggestions given by the experts were duly considered and corrections were made after discussion with research guide.

Reliability of the Instrument

The tool is highly reliable because the scale used was standard. The reliability of the tool was obtained by spearman split half technique. The reliability of numerical pain intensity scale was 0.84. Hence the reliability of the tool was satisfactory.

Pilot Study

In order to test the relevance and practicability of the study, a pilot study was conducted among 5 samples residing in Kurumbapalayam, Coimbatore. The result showed that the tool was appropriate and feasible to conduct the study.

Data Collection Procedure

Formal permission was obtained from the medical officer of Kovilpalayam Primary Health Centre and village head to conduct the study in Kovilpalayam. The purpose, nature of the study and duration of the study were explained and their consent was obtained.

The study was conducted for a period of 30 days from 1.7.2013 to 31.7.2013. The samples were selected by using non probability convenience sampling technique. In pretest, the investigator assessed the severity of joint pain by using Numerical Pain Intensity Scale and then applied 3ml of camphor oil on the joint and check for any allergic reaction. If allergic reaction is found, then the joint was washed with soap and water, otherwise it is continued for 5 consecutive days from 1st day onwards for 10-15 minutes, preferably morning and evening. In Post test, the investigator assessed the severity of joint pain on the 6th day of intervention by using the same scale to find out the effectiveness of camphor oil application in reducing joint pain.

Plan for Data Analysis

The investigator adopted descriptive and inferential statistics to analyze the data. The demographic variables were analyzed by using frequency and percentage. The effectiveness of camphor oil application to reduce the severity of joint pain and association between demographic variables and the pretest score were analyzed by using paired 't' test and chi-square test (χ^2) respectively.

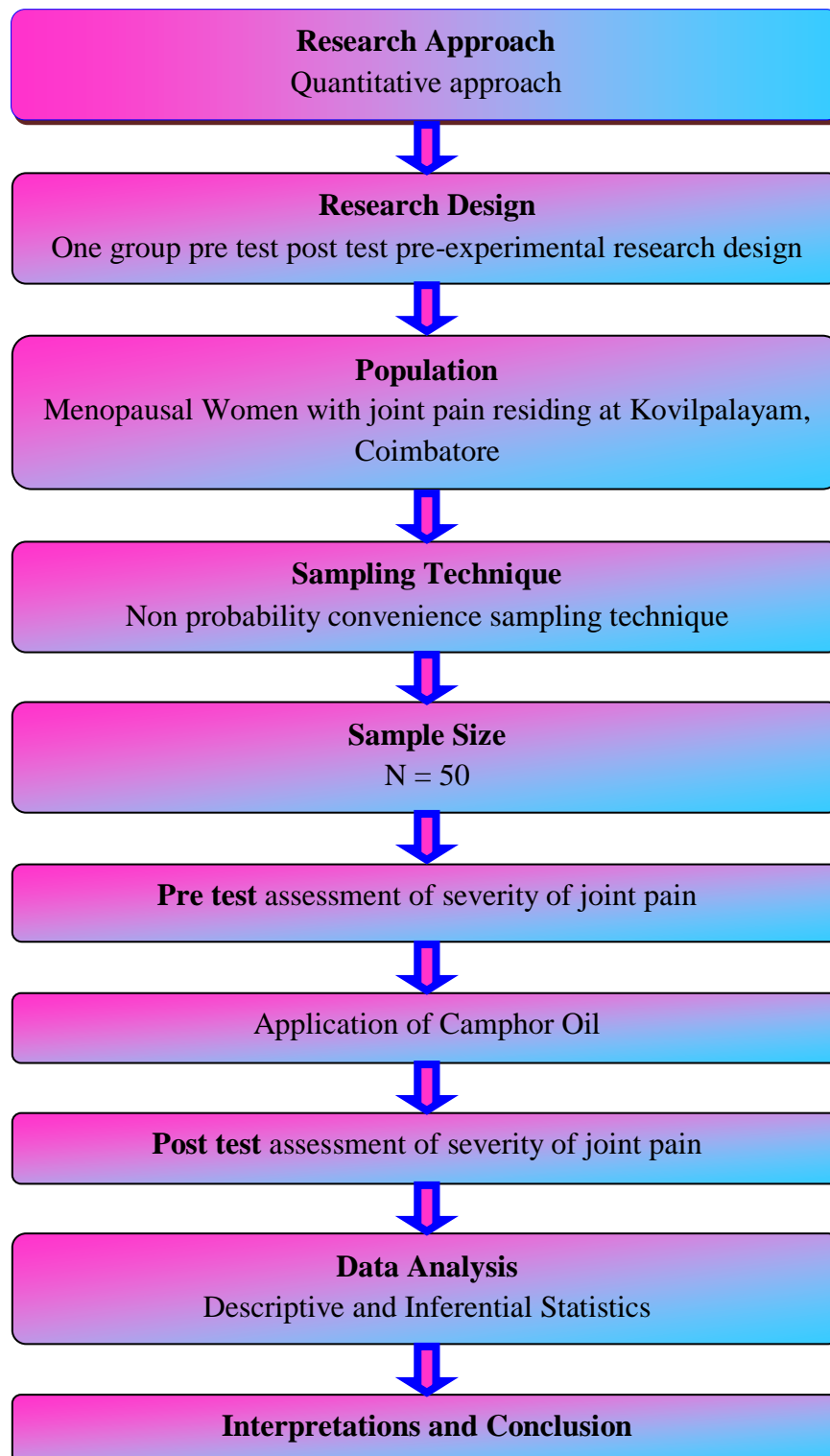


Figure. 4 The Overall View of Research Methodology

CHAPTER - IV

Data Analysis and Interpretation

Suresh K. Sharma states that, Analysis is the process of organizing and synthesizing the data so as to answer the research questions and test the hypothesis. Analysis and interpretation of the data is the most important phase of the research process, which involves the computation of the certain measures along with searching for patterns of relationship that exists among data group.

This chapter deals with analysis and interpretation of the data collected from menopausal women with joint pain at Kovilpalayam, Coimbatore to assess the effectiveness of camphor oil application on joint pain among Menopausal Women. The study findings based on the descriptive and inferential statistical analysis are presented as follows.

Section - I : Distribution of demographic variables of menopausal women with joint pain.

Section - II : Distribution of severity of joint pain in pretest and post test among menopausal women

Section - III : Comparison of mean pretest and post test score of severity of joint pain among menopausal women.

Section - IV : Association between demographic variables with pre test score of joint pain among menopausal women.

SECTION - I

Table. 1 Description of Demographic Variables of Menopausal Women with Joint Pain

(N = 50)

S.No.	Demographic Variables	Frequency (f)	Percentage (%)
1.	Age a) 46 - 50 years b) 51 - 55 years c) 56 - 60 years	18 15 17	36 % 30 % 34 %
2.	Marital status a) Married b) Unmarried	50 0	100 % 0 %
3.	Type of family a) Nuclear b) Joint pain c) Extended	20 18 12	40 % 36 % 24 %
4.	Education a) Illiterate b) Primary school c) Secondary school d) Higher secondary school e) Graduate	23 14 11 2 0	46 % 28 % 22 % 4 % 0 %

(Table 1 continues)

(Table 1 continued)

S.No.	Demographic Variables	Frequency (f)	Percentage (%)
5.	Occupation a) Housewife b) Self employee c) Private employee d) Daily wages e) Government employee	11 15 9 8 7	22 % 30 % 18 % 16 % 14 %
6.	Family monthly income a) ≤ ₹. 4000 b) ₹. 4001-5000 c) ₹. 5001-6000 d) ≥ ₹. 6001	8 18 12 12	16 % 36 % 24 % 24 %
7.	Duration of pain a) 0-1 year b) 2-3 years c) 4-5 years	18 21 11	36 % 42 % 22 %
8.	Nature of work a) Sedentary work b) Moderate work c) Heavy work	14 27 9	28 % 54 % 18 %
9.	Impact on activities of daily living a) Interfering little with activities of daily living b) Interfering significantly with activities of daily living c) Unable to perform activities of daily living	20 22 8	40 % 44 % 16 %

Table 1 shows the description of Demographic Variables of Menopausal Women with joint pain

- Among the respondents, 18(36%) were between the age group of 46-50years, 15(30%) were between the age group of 51-55 years, 17(34%) were between the age group of 55-60years.
- Regarding the marital status, 50 (100%) were married.
- Regarding the family type 20(40%) of them belong to nuclear family, 18 (36%) of them belong to joint family, 12(24%) of them belong to extended family
- Regarding the education 23 (46%) of them were illiterate, 14 (28%) of them were primary educated, 11 (22%) of them were belong to secondary educated, 2(4%) of them were higher secondary educated.
- Regarding the occupation 11(22%) of them were house wife, 15(30%) of them were self-employers, 9(18%) of them were private employee, 8(16%) of them were daily wages, 7(14%) them were government employee.
- Regarding the monthly income 8(16%) of them were receiving \leq ₹.4000, 18(36%) of them were receiving between ₹.4001-5000, 12(24%) of them were receiving between ₹.5001-6000, 12(24%) of them were receiving \geq ₹. 6001.
- Regarding duration of joint pain 18(36%) of them were experienced for 0-1 year, 21(42%) of them were experienced for 2-3 years, 11 (22%) of them were experienced for 4-5 years.

- Based on nature of work 14(28%) of them were sedentary work, 27(54%) of them were moderate work, 9(18%) of them were heavy work.

- Regarding impact on activities of daily living 20 (40%) of them were interfering little, 22(44%) of them were interfering significantly, 8(16%) of them were unable to perform activities.

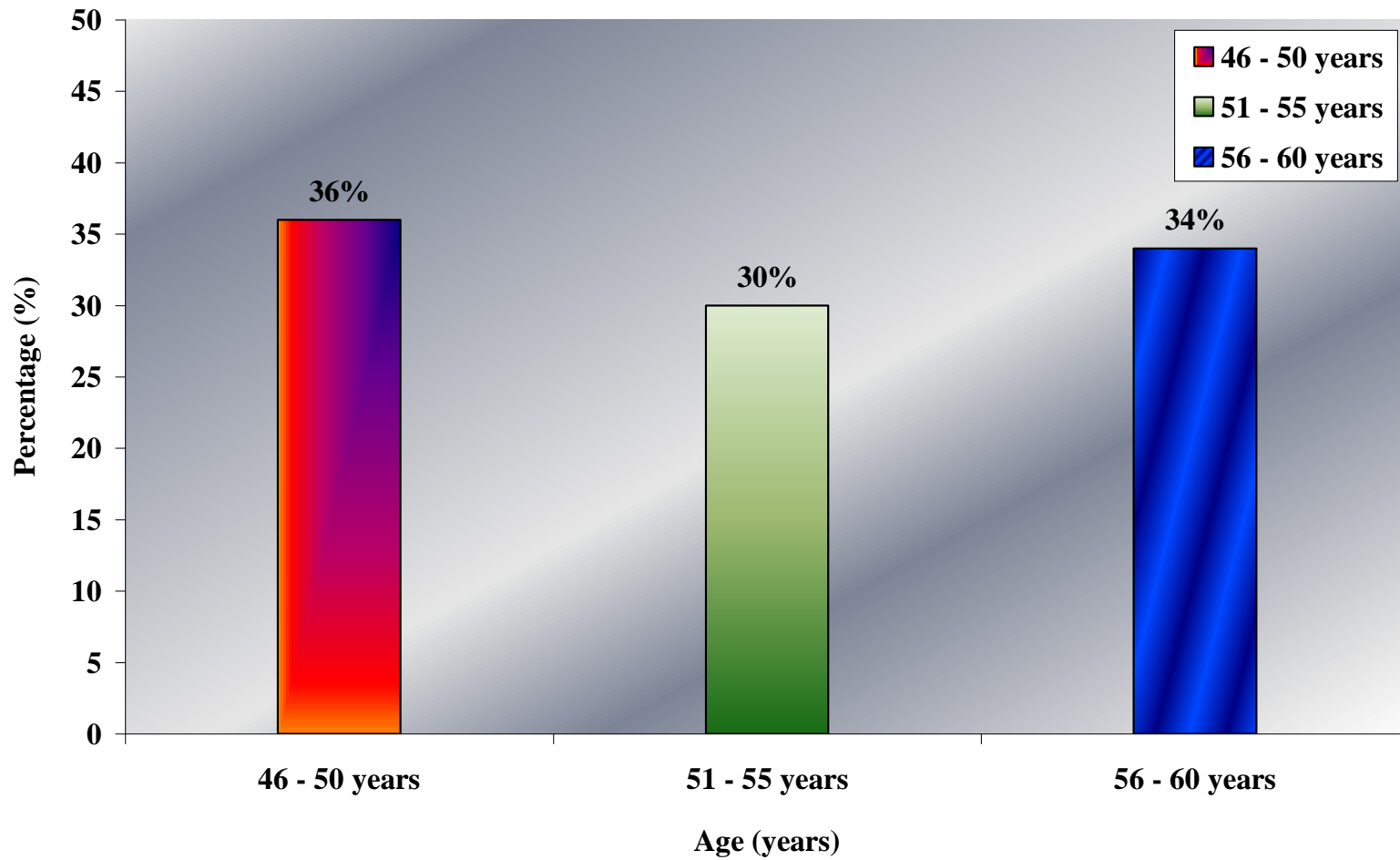


Figure. 5 Distribution of Demographic Variables According to Age

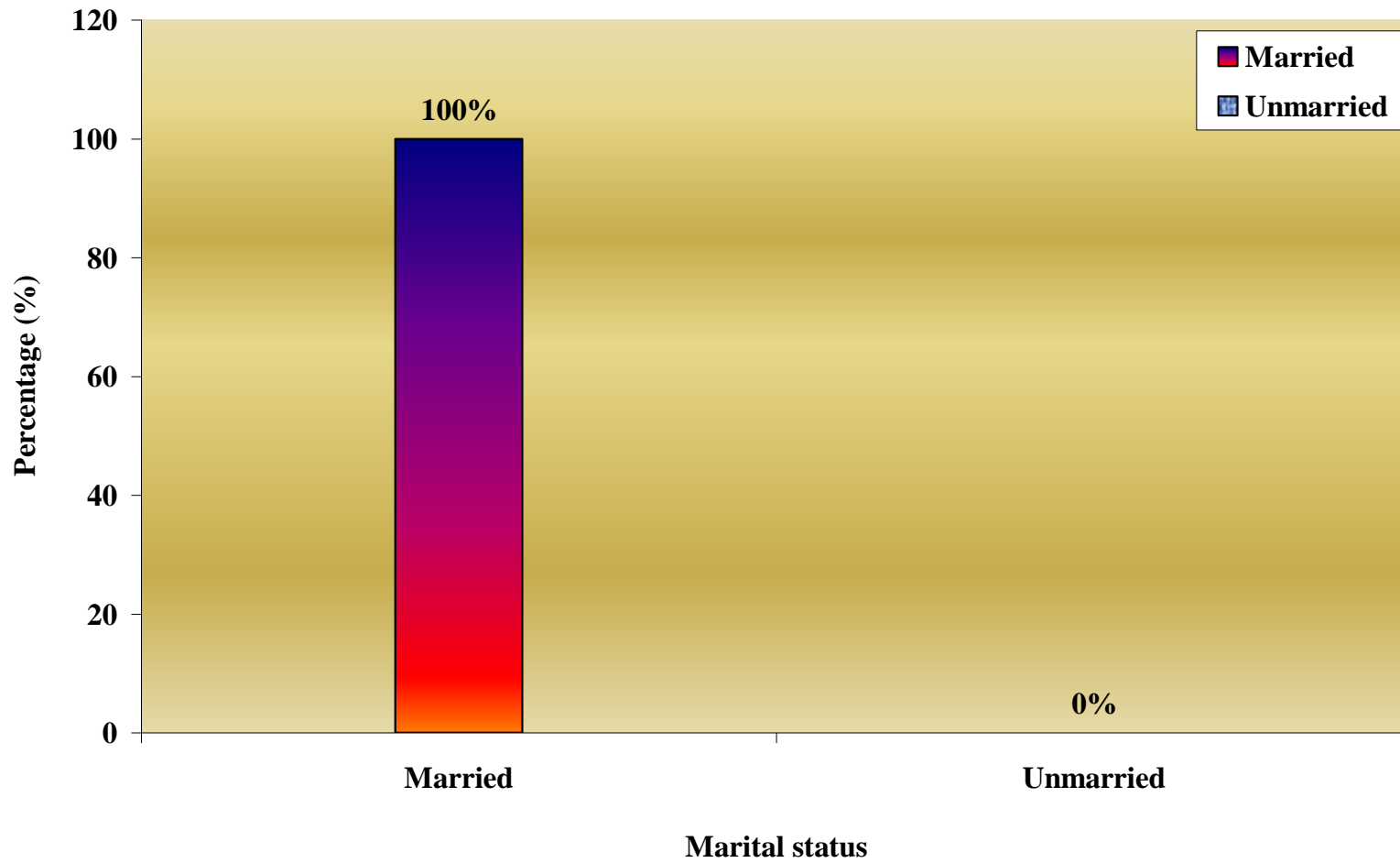


Figure. 6 Distribution of Demographic Variables According to Marital Status

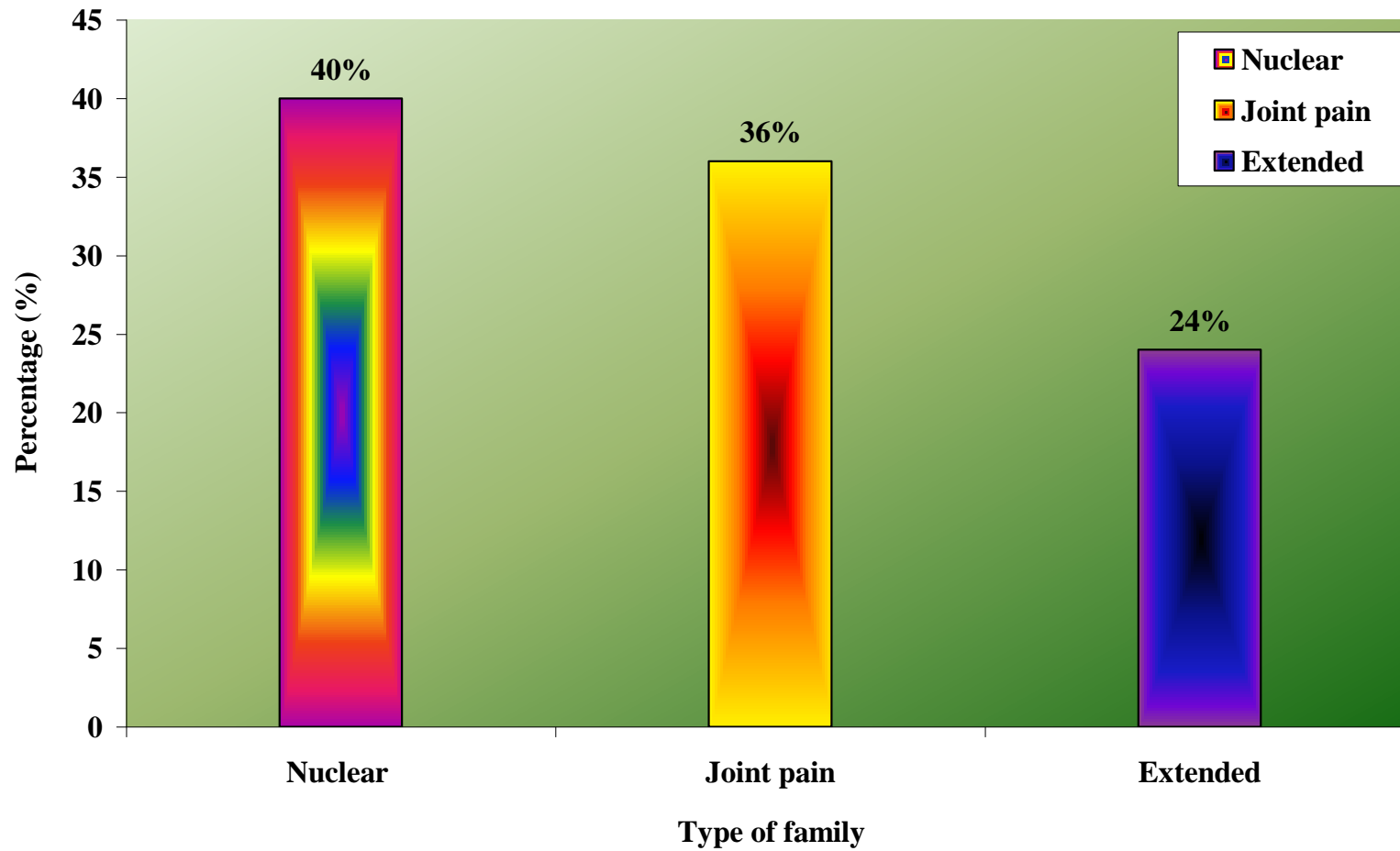


Figure. 7 Distribution of Demographic Variables According to Type of Family

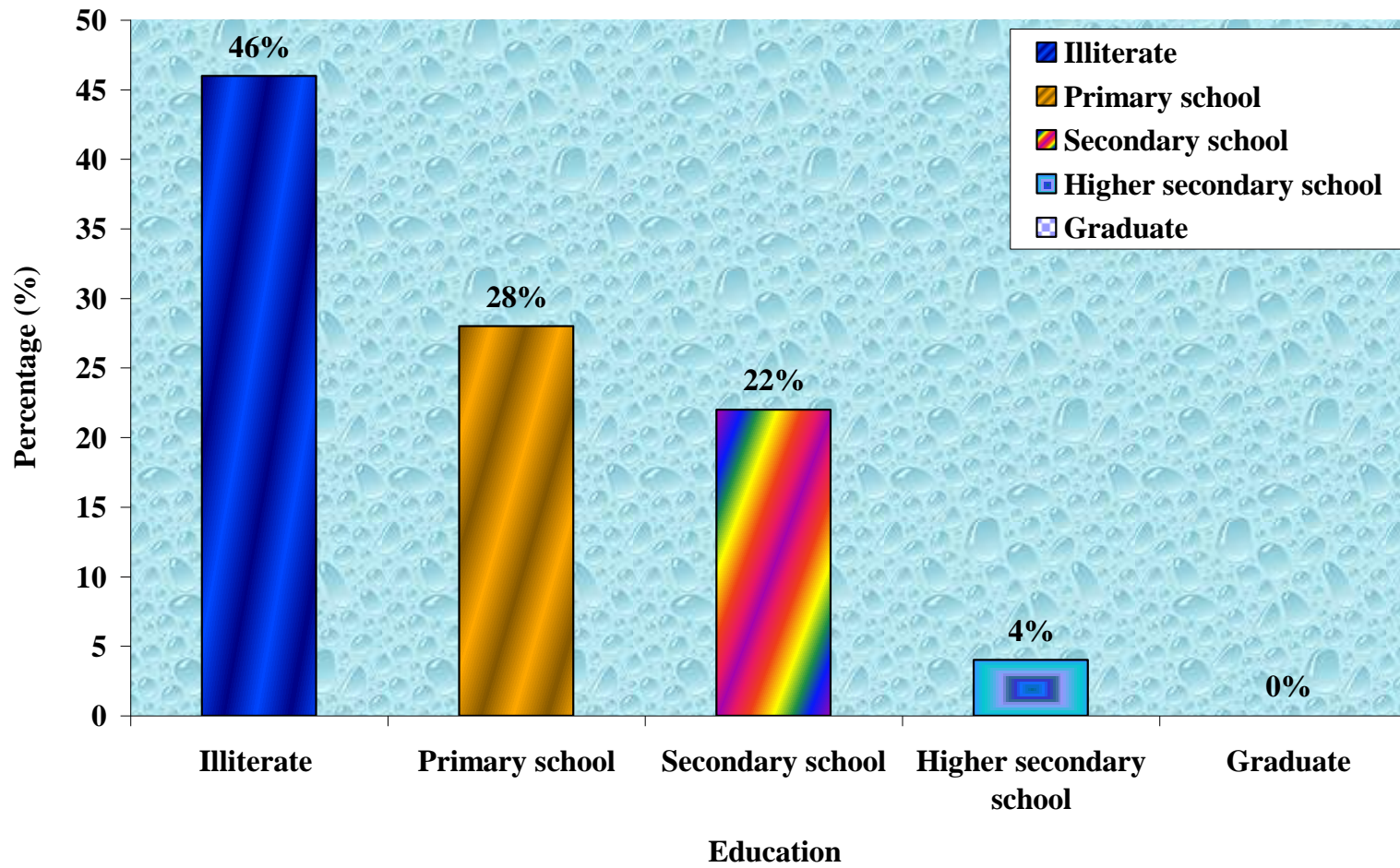


Figure. 8 Distribution of Demographic Variables According to Education

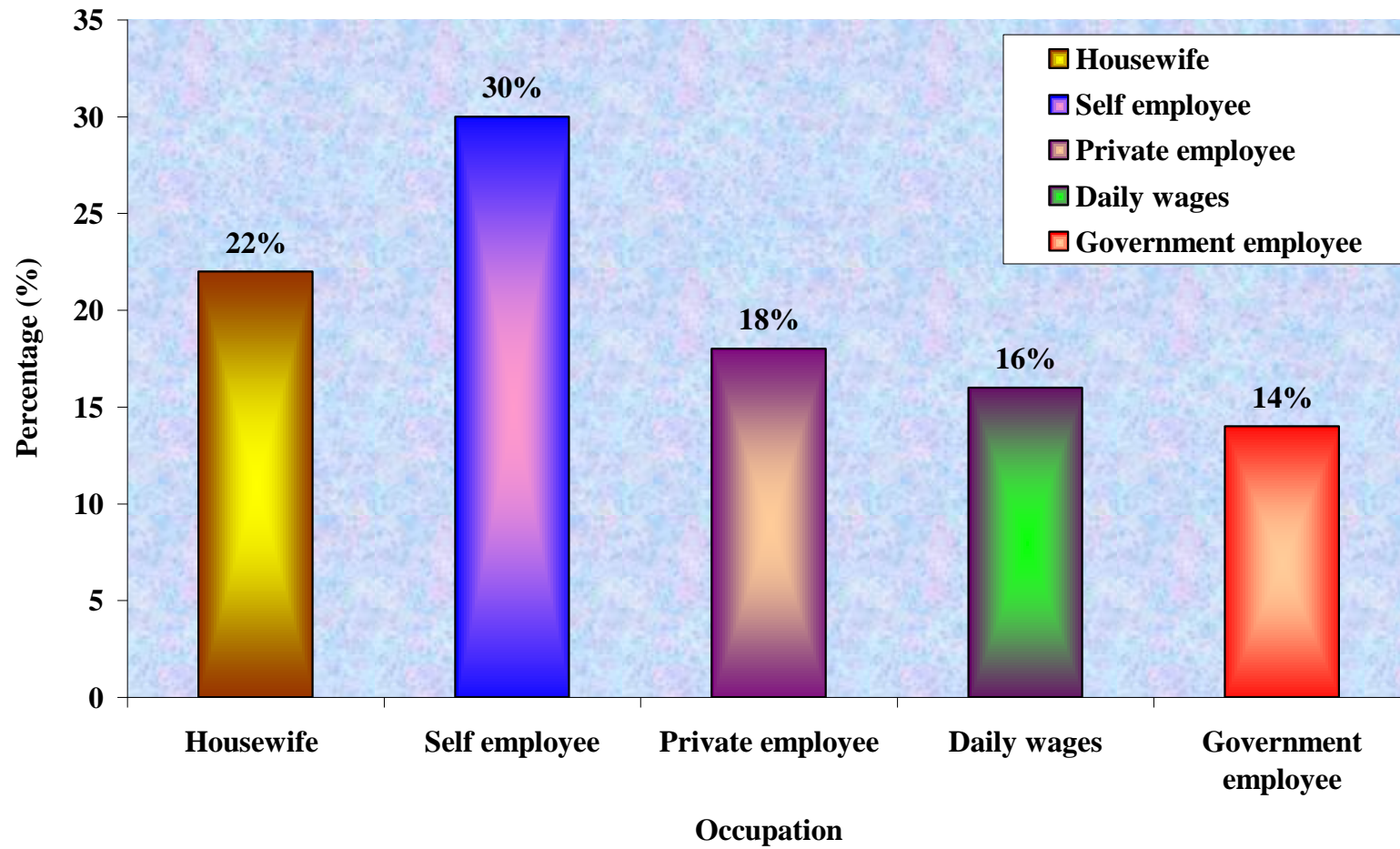


Figure. 9 Distribution of Demographic Variables According to Occupation

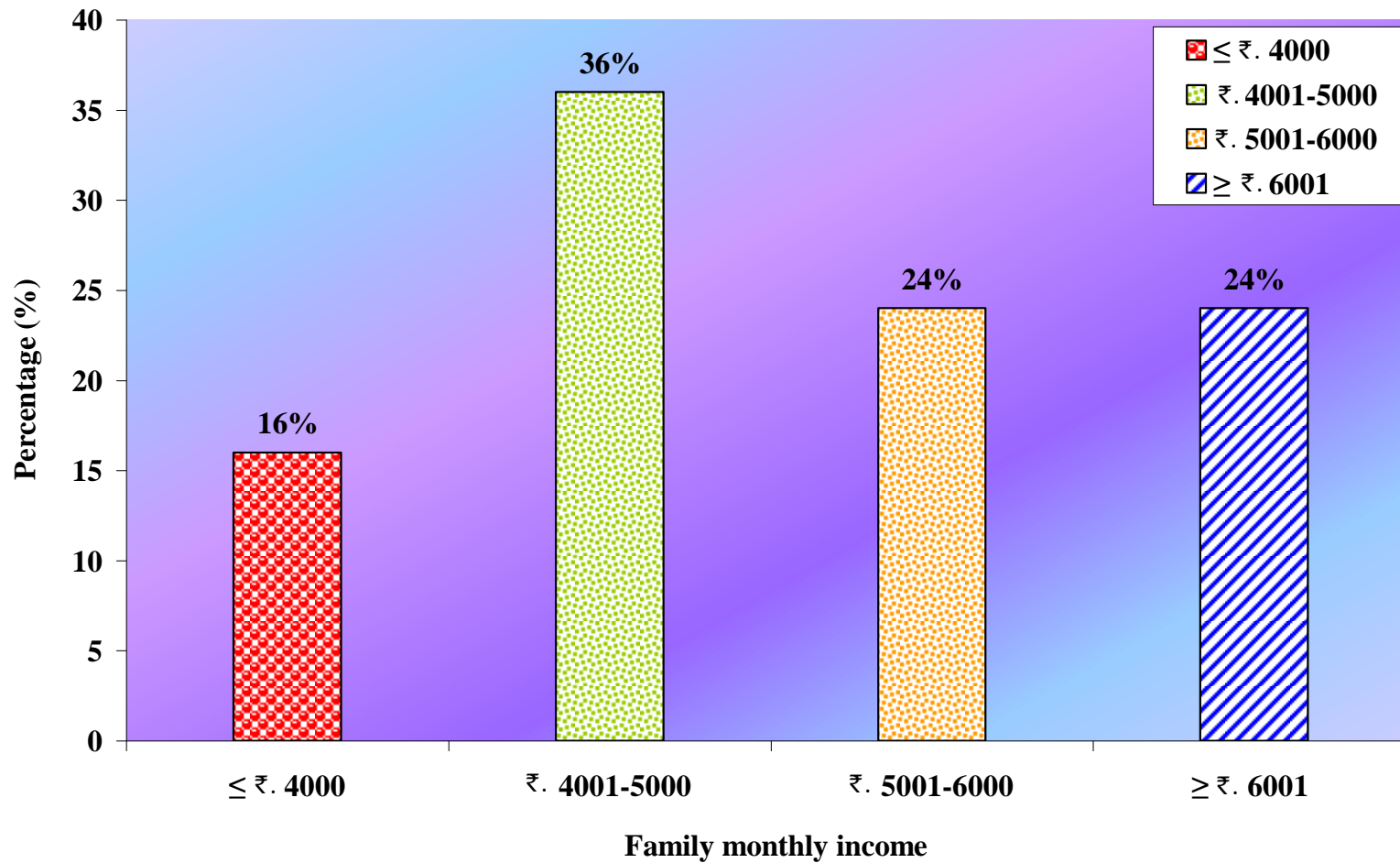


Figure. 10 Distribution of Demographic Variables According to Family Monthly Income

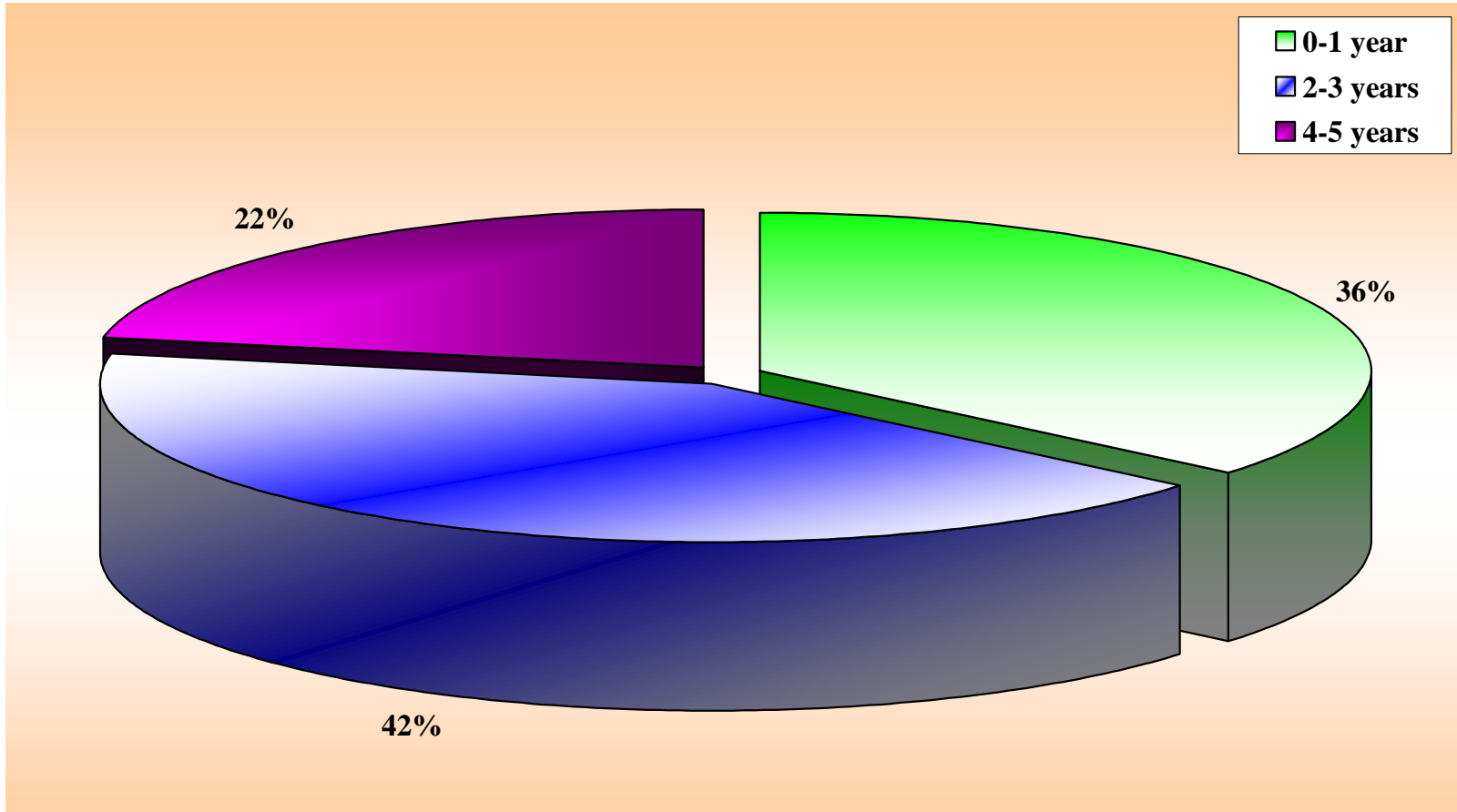


Figure. 11 Distribution of Demographic Variables According to Duration of Pain

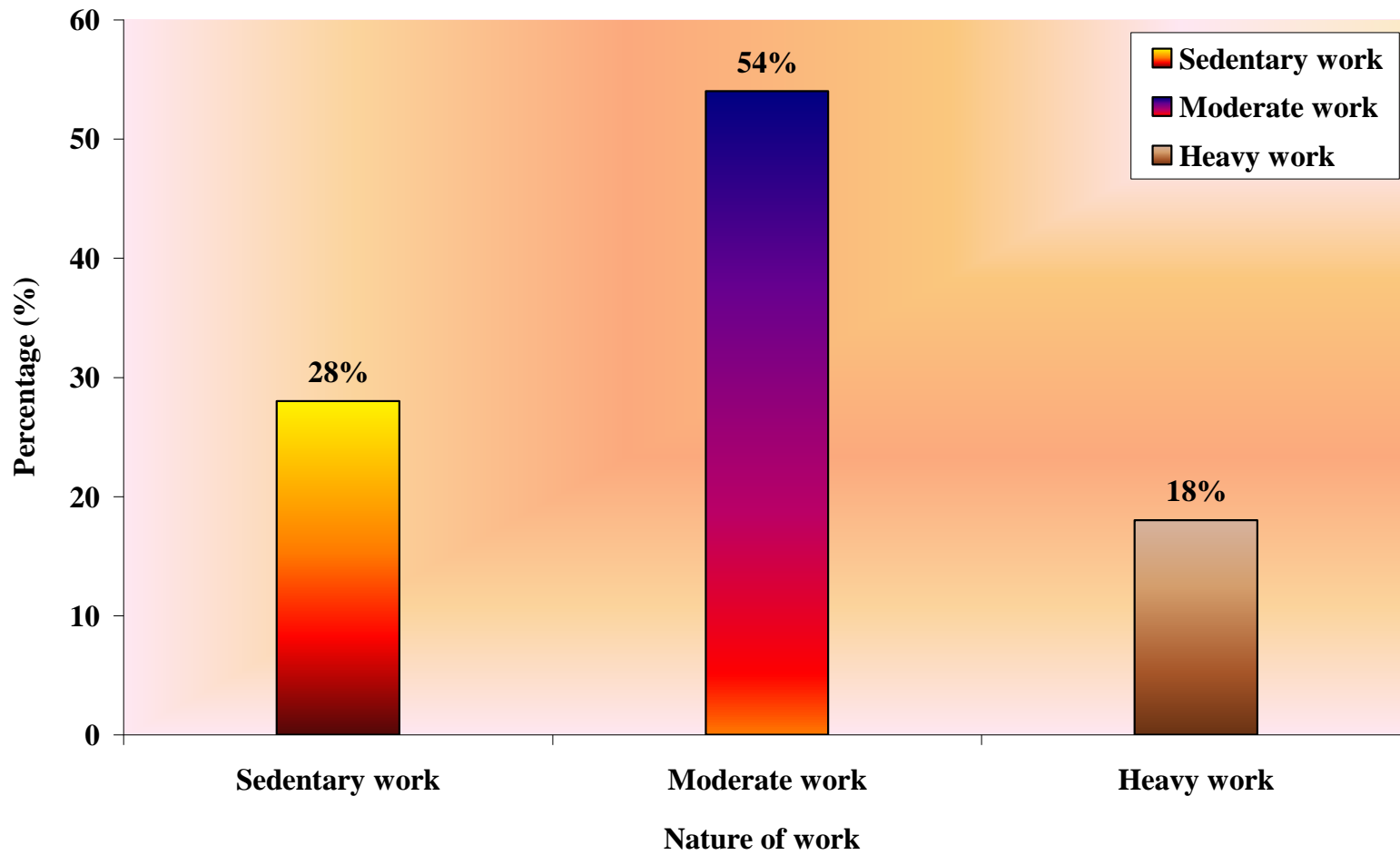


Figure. 12 Distribution of Demographic Variables According to Nature of Work

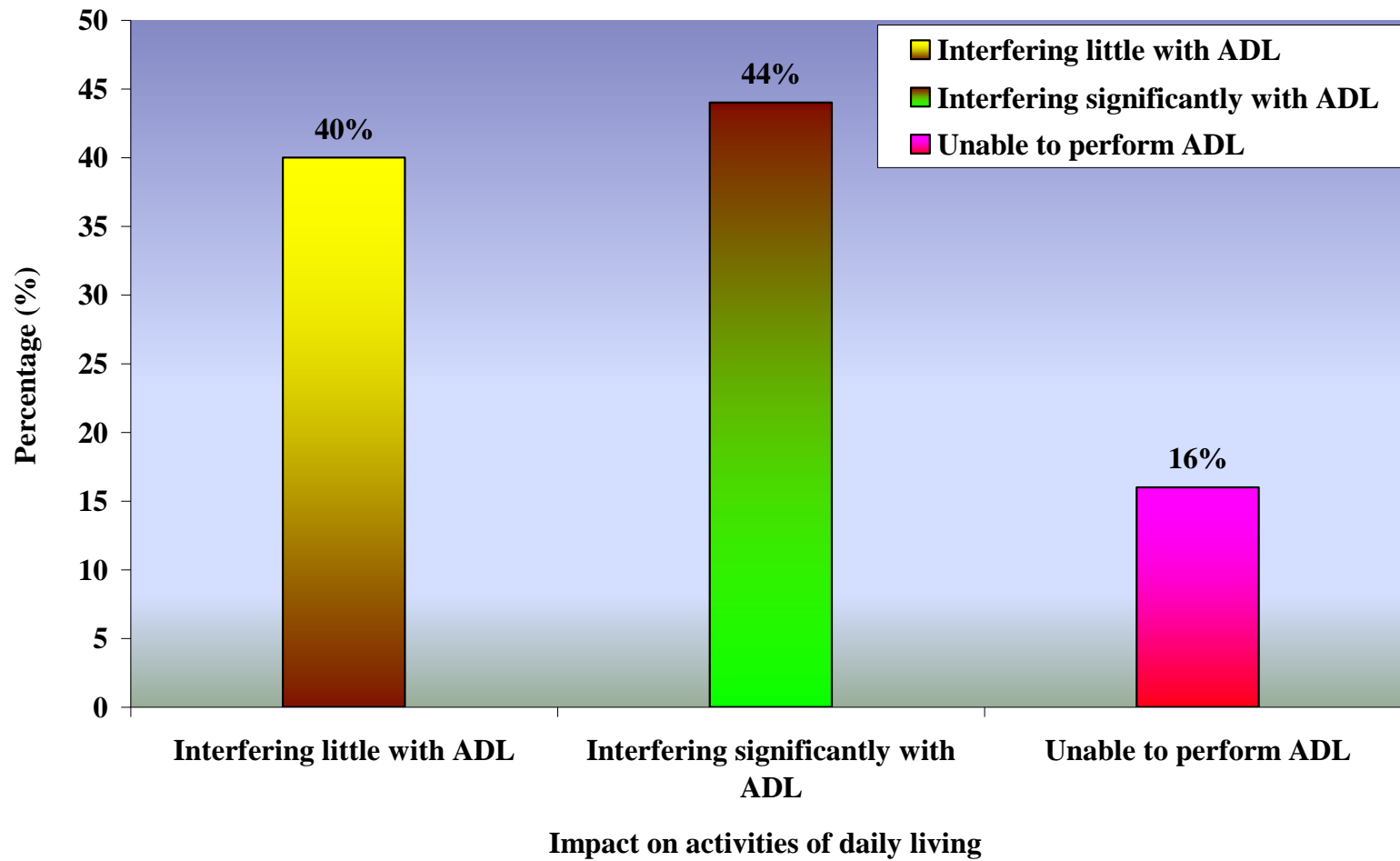


Figure. 13 Distribution of Demographic Variables According to Impact on Activities of Daily Living

SECTION - II

Table. 2 Distribution of Severity of Joint Pain in Pretest and Post Test Among Menopausal Women

(N = 50)

S. No.	Severity of Joint Pain	Pretest		Post Test	
		f	%	f	%
1.	Mild pain	1	2%	22	44%
2.	Moderate pain	21	42%	24	48%
3.	Severe pain	28	56%	4	8%

Table 2 shows the distribution of severity of joint pain before and after application of camphor oil. In pre test 1(2%) menopausal women had mild pain, 21(42%) menopausal women had moderate pain, and 28 (56%) menopausal women had severe pain. During the post test 22(44%) menopausal women had mild pain, 24(48%) menopausal women had moderate pain, and 4 (8%) menopausal women had severe pain.

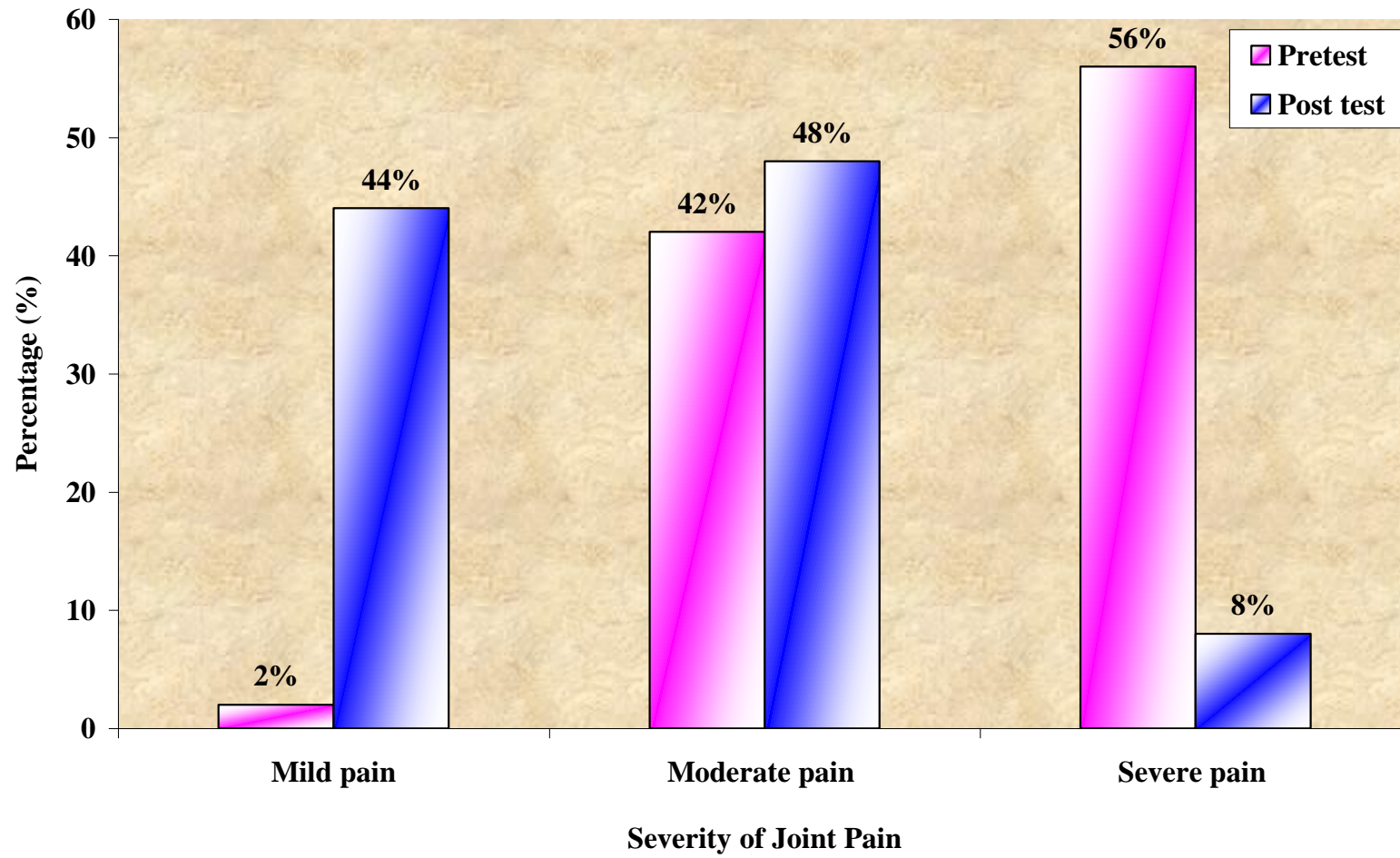


Figure. 14 Distribution of Severity of Joint Pain in Pretest and Post Test Among Menopausal Women

SECTION – III

Table. 3 Comparison of Mean Pretest and Post Test Score of Severity of Joint Pain
Among Menopausal Women

(N = 50)

S. No.	Severity of Joint Pain	Mean	S.D	' t' value
1.	Pretest	6.74	1.54	21.59*
2.	Post test	3.86	1.45	

*significant at 0.05 level

Table 3 shows the mean pretest score on severity of joint pain was 6.74 and that of post test was 3.86. The calculated 't' value was 21.59 at 49 degree of freedom was significant at 0.05 level. It showed that camphor oil application is effective on reduction of joint pain among Menopausal Women.

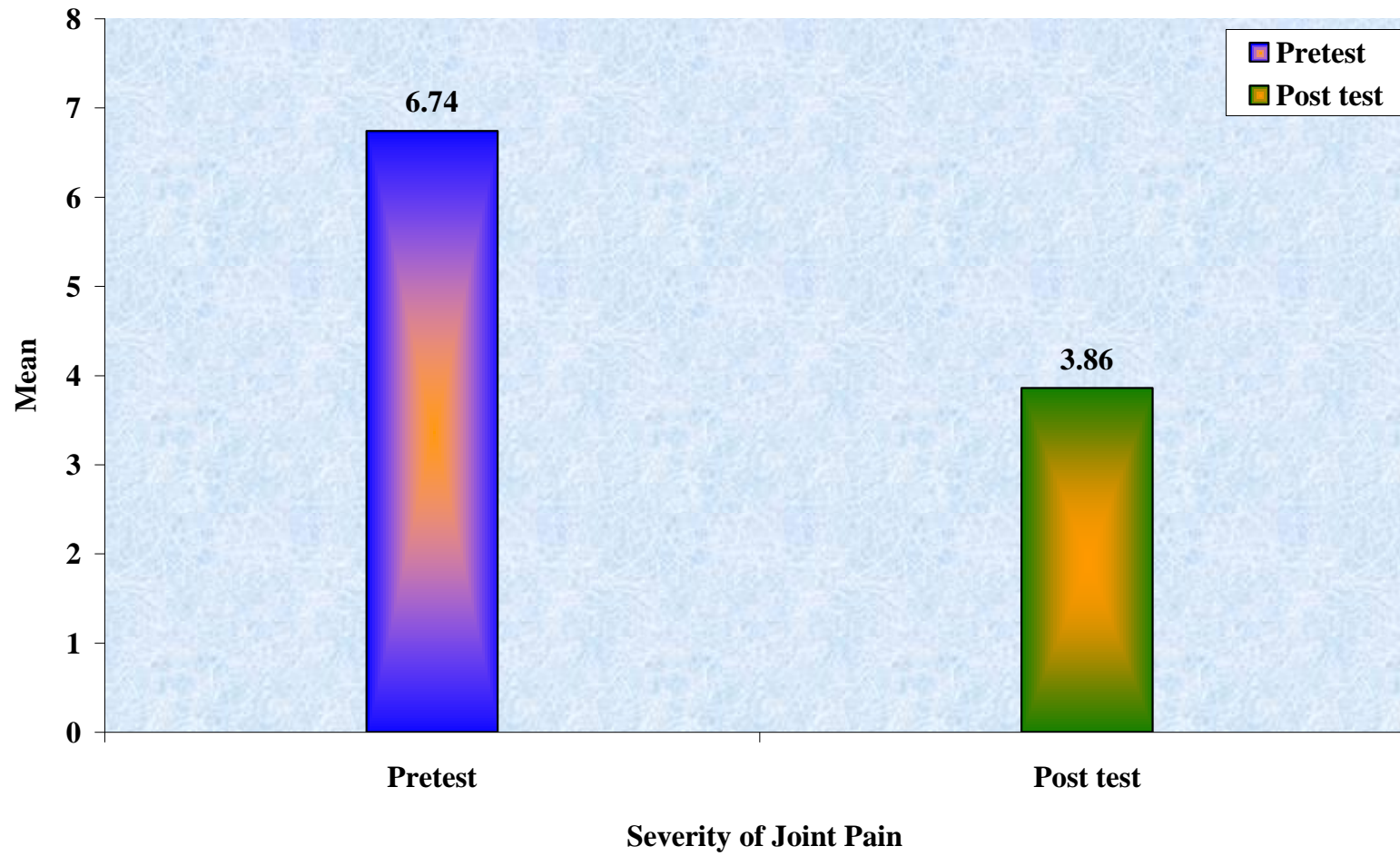


Figure. 15 Comparison of Mean Pretest and Post Test Score of Severity of Joint Pain Among Menopausal Women

SECTION – IV

Table. 4 Association Between Demographic Variables with Pretest Score of Joint Pain Among Menopausal Women

(N = 50)

S.No.	Demographic Variables	Above Mean	Below Mean	Degrees of Freedom	χ^2
1.	Age in years				
	a) 46-50 years	9	9		
	b) 51-55 years	8	7	2	1.68
	c) 56-60 years	12	5		
2.	Marital status				
	a) Married	28	22	1	0
	b) Unmarried	0	0		
3.	Type of family				
	a) Nuclear	14	6		
	b) Joint pain	6	12	2	13.04*
	c) Extended	8	4		
4.	Education				
	a) Illiterate	10	13		
	b) Primary school	8	6		
	c) Secondary school	8	3	4	2.6
	d) Higher secondary school	1	1		
	e) Graduate	0	0		

(Table 4 continues)

(Table 4 continued)

S.No.	Demographic Variables	Above Mean	Below Mean	Degrees of Freedom	χ^2
5.	Occupation				
	a) Housewife	6	5		
	b) Self employee	8	7		
	c) Private employee	5	4	4	1.67
	d) Daily wages	6	2		
	e) Government employee	3	4		
6.	Family monthly income				
	a) \leq ₹.4000	3	5		
	b) ₹. 4001-5000	10	8	3	10*
	c) ₹. 5001-6000	8	4		
	d) \geq ₹. 6001	7	5		
7.	Duration of pain				
	a) 0-1 year	6	12		
	b) 2-3 years	14	7	2	7.49*
	c) 4-5 years	9	2		

(Table 4 continues)

(Table 4 continued)

S.No.	Demographic Variables	Above Mean	Below Mean	Degrees of Freedom	χ^2
8.	Nature of work				
	a) Sedentary work	4	10	2	12.41*
	b) Moderate work	15	12		
	c) Heavy work	9	0		
9.	Impact on activities of daily living				
	a) Interfering little with activities of daily living	4	16		
	b) Interfering significantly with activities of daily living	16	6	2	19.26*
	c) Unable to perform activities of daily living	8	0		

*significant at 0.05 level

Table 4 shows that there was association between type of family, family monthly income, duration of pain, nature of work and impact on activities of daily living with pretest joint pain score of menopausal women and there was no significant association between age, marital status, education, occupation with pretest joint pain score of menopausal women.

CHAPTER - V

Results and Discussion

The study aims to assess the effectiveness of camphor oil application on reduction of joint pain among Menopausal Women at Kovilpalayam, Coimbatore.

The discussion of the study is based on statistical analysis. The effectiveness of camphor oil is assessed by using Paired “t” test. Chi square was used to find out the associate between pretest score of joint pain and demographic variables of menopausal women.

The First Objective of the Study was to Assess the Severity of Joint Pain Among Menopausal Women

The severity of joint pain among menopausal women was assessed by using Numerical pain intensity scale. Pretest mean score for joint pain was 6.74.

Urwin, et al. (1988) conducted a study on estimating the burden of musculoskeletal disorders in the community in UK. The sample size was 6000. The research design was population survey. The modified health assessment questionnaires were used to assess the area of pain like neck, back, shoulder, elbow, hand, hip, knee, and multiple joints. The result revealed that the most common site of pain was back followed by knee pain, and shoulder pain. The majority of subjects who reported pain had pain in more than one site. It was highest in those with multiple joint problems but was also high in those with isolated back or knee pain.

The Second Objective of the Study was to Apply Camphor Oil on the Joint Among Menopausal Women

In pretest, the samples were assessed for severity of joint pain by using Numerical Pain Intensity Scale. On the same day, 3ml of camphor oil was applied on the joint and it was continued for 5 consecutive days from 1st day onwards for 10-15 minutes, preferably morning and evening. The post test was assessed to find out the effectiveness of camphor oil application on reduction of joint pain by using same Numerical Pain Intensity Scale.

Neelesh Wadnap, et al. (2006) conducted a study to validate the efficacy and safety on natural medicine for the management of joints pain at community health centre, wadnap hospital, pune. The sample size was 30. Through visual analog scale, score of the joint pain were assessed. Swelling and joints pain are common complaints presented by adult patients. This study, showed a significantly higher number of elderly and female patients. The result revealed that 13 patients had pain and swelling on knee joints, 6 complained of ankle pain and 3 had shoulder and elbow pain. 2 patients had pain in hip joints. It concluded that the domains of pain, freedom of movement and global assessment, which are the core variables of any study of joints pain and swelling, have all shown significant improvement with the camphor, menthol, turpentine oil which was used as local application to relief joints pain and swelling.

The Third Objective of the Study was to Reassess the Severity of Joint Pain Among Menopausal Women

Pretest mean score and standard deviation of joint pain were 6.74 and 1.54. The post test mean score and standard deviation of joint pain were 3.86 and 1.45

respectively. The calculated 't' value was 21.59. The obtained 't' value was higher than the table value, which implies there is significant difference between the pretest and post test score on severity of joint pain. Hence the application of camphor oil was effective on reduction of joint pain among Menopausal Women.

Mina shahlari (2001) conducted a study to assess the ability of a topical cream containing camphor to reduce pain related to osteoarthritis (OA). The sample size was 40 and the samples were collected by random sampling technique. The level of pain was assessed by visual analogue scale. The study revealed that statistically significant reduction in the level of pain following the topical application of cream containing camphor.

The Fourth Objective of the Study was to Associate the Findings with Demographic Variables of Menopausal Women

The association of demographic variables namely type of family, family monthly income, duration of pain, nature of work and impact on activities of daily living with pretest score of joint pain showed significant association using chi square test. There is no significant association between age, marital status, education, occupation with pretest score of joint pain.

Masoumeh Abedzadeh Kalahroudi, et al. (2012) conducted a cross sectional study on knee joint pain among menopausal women 40-60 years in Kashan, Iran. The sample size was 700 women. The samples selected by cluster sampling technique. The result revealed that there was a significant association between Nature of work and joint pain of menopausal women.

CHAPTER - VI

Summary, Conclusion, Nursing Implications, Limitations and Recommendations

Summary

Joint pain is the most common problem among women than men. Health care providers especially community health nurse are playing a vital role in educating persons about care of joint pain. The joint pain can be reduced by applying camphor oil on joint. Keeping this point in view, a study was conducted to assess the effectiveness of camphor oil application on joint pain among menopausal women at selected rural areas, Coimbatore.

The Following Objectives were Set for the Study

- To assess the severity of joint pain among menopausal women.
- To apply camphor oil on the joint among menopausal women.
- To reassess the severity of joint pain among menopausal women.
- To associate the findings with demographic variables of menopausal women

Hypothesis Set for the Study

There is a significant effect on severity of joint pain among menopausal women after the application of Camphor oil.

Major Findings of the Study were as Follows

- The pretest mean score of joint pain was 6.74.
- The post test mean score of joint pain was 3.86.

- The obtained 't' value was 21.59 at 49 degree of freedom was significant at 0.05 level
- There was an association between score of severity of joint pain with type of family, family monthly income, duration of pain, nature of work and impact on activities of daily living.

Conclusion

The mean post test score of joint pain was lower than the mean pretest score of joint pain. The finding shows that the camphor oil application was effective in reducing the severity of joint pain among menopausal women. So the alternative hypothesis was accepted.

The χ^2 test was used to find out the association between the demographic variables with pretest score of joint pain. The result revealed that the demographic variables like type of family, family monthly income, duration of pain, nature of work and impact on activities of daily living had significant association with the findings.

Nursing Implications

The findings of the study have implications on community health nursing practice, nursing administration, nursing education and nursing research.

Community Health Nursing Practice

- The community health nurse can demonstrate camphor oil application for her clients.

- Encourage nursing students to plan and organize the nursing intervention to manage joint pain effectively with camphor oil as home remedies.
- The findings of the study indicate that the community health nurse should be made aware of camphor oil application for joint pain.
- The present study helps to draw attention of nurse to build up sound knowledge in this area.

Nursing Administration

- The nurse administrators should be able to motivate and initiate the health personnel in organizing and participating in various educational programmes and improve their knowledge and skills.
- The nurse administrative can support the nurses for conducting research on camphor oil application for various uses.
- In-service education programme should be organized for nurses to develop, up to date knowledge regarding joint pain and camphor oil application.

Nursing Education

- The curriculum of nursing education should enable the student nurses to equip themselves with treatment for joint pain.
- In service education can be conducted to update nurse's knowledge and skill on the management of joint pain.
- Periodic conferences, workshops, symposium and seminars can be arranged regarding alternative and complementary therapies to make

nursing professionals competent enough to meet over changing needs of the society.

Nursing Research

- The nursing researcher should be aware of new trends in the existing health care system.
- Emphasis should be laid on research in the area of non pharmacological measures of pain management among clients with joint pain.
- This study will be a valuable reference material for future researchers.

Limitations

- The study included only the menopausal women who were in Kovilpalayam, Coimbatore.
- The size of the sample was small to draw conclusion.
- The study did not use any control group.
- The study was limited to 46-60 years of menopausal women with joint pain.

Recommendations

- Same study can be replicated with large sample size.
- A similar study can be conducted with experimental and control group.
- A similar study can be done by video teaching.
- A similar study can be done by using structured teaching programme.

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ABSTRACT

Statement of the Problem : Effectiveness of camphor oil application on reduction of joint pain among menopausal women at selected rural areas, Coimbatore.

Study Objectives : (a) To assess the severity of joint pain among menopausal women. (b) To apply camphor oil on the joint among menopausal women. (c) To reassess the severity of joint pain among menopausal women. (d) To associate the findings with demographic variables of menopausal women. **Methodology :** One

group pre test post test pre- experimental design was used. This study consists of 50 samples of menopausal women were selected by non-probability convenience sampling technique. Numerical pain intensity scale was used to assess the severity of

joint pain. **Results :** Descriptive and Inferential statistics were used to analyze the data. The obtained 't' test value was 21.59 which was significant at 0.05 level.

Conclusion : The study revealed that camphor oil application is effective on reduction of the severity of joint pain among menopausal women.



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To

Through

The Principal,
PPG College of Nursing
Coimbatore – 35.

Respected Sir,

Sub : Seeking permission for conducting research study

I am a student of M.Sc Nursing in PPG College of Nursing. Our college is affiliated to the Tamilnadu Dr. M. G. R Medical University, Chennai. I have taken the specialization in Community Health Nursing.

**Topic : EFFECTIVENESS OF CAMPHOR OIL APPLICATION ON
REDUCTION OF JOINT PAIN AMONG MENOPAUSAL WOMEN
AT SELECTED RURAL AREAS, COIMBATORE**

I request you to kindly permit me to conduct my study in your area. Hope you will consider my requisition and do the needful.

Thanking you,

Yours sincerely,

Date :

Place : Coimbatore

Requisition Letter for Content Validity

From

M.Sc (N) II Year,
PPG College of Nursing,
Coimbatore – 35.

To

Through : Principal, PPG College of Nursing

Respected Sir/Madam,

Sub : Requisition for expert opinion and suggestion for content validity of tool

I am a student of M.Sc (N) II year, PPG College of Nursing affiliated to the Tamilnadu Dr. M. G. R. Medical University, Chennai. As a partial fulfillment of the M.Sc (N) programme. I am conducting

**EFFECTIVENESS OF CAMPHOR OIL APPLICATION ON
REDUCTION OF JOINT PAIN AMONG MENOPAUSAL WOMEN AT
SELECTED RURAL AREAS, COIMBATORE**

Herewith I have enclosed the developed tool for content validity and for the expert opinion and possible suggestion. It would be very kind of you to return the same as early as possible.

Thanking you,

Yours faithfully,

PPG College of Nursing
Format for the Content Validity

Name of the expert :

Address :

Total content for the tool :

Kindly validate each tool and tick wherever applicable

S.No	No. of Tool/Section	Strongly Agree	Agree	O.K	Not Applicable	Need Modification	Remarks

Remarks

Signature of the Expert with Date

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4. Prof. G. MAHALAKSHMI

Principal,
Royal College of Nursing,
Coimbatore.

5. Prof. MALARKODI

KMCH College of Nursing,
Coimbatore.

SECTION - A

Demographic Variables

Instructions

Read the following questions carefully and give tick (✓) in a given boxes for correct answers

Sample No : _____

1. Age

- a) 46-50 years
- b) 51-55 years
- c) 56-60 years

2. Marital status

- a) Married
- b) Unmarried

3. Type of family

- a) Nuclear
- b) Joint pain
- c) Extended

4. Education

- a) Illiterate
- b) Primary school
- c) Secondary school
- d) Higher secondary school
- e) Graduate

5. Occupation

- a) Housewife
- b) Self employee
- c) Private employee
- d) Daily wages
- e) Government employee

6. Family monthly income

- a) \leq ₹. 4000
- b) ₹. 4001-5000
- c) ₹. 5001-6000
- d) \geq ₹. 6001

7. Duration of pain

- a) 0-1 year
- b) 2-3 years
- c) 4-5 years

8. Nature of work

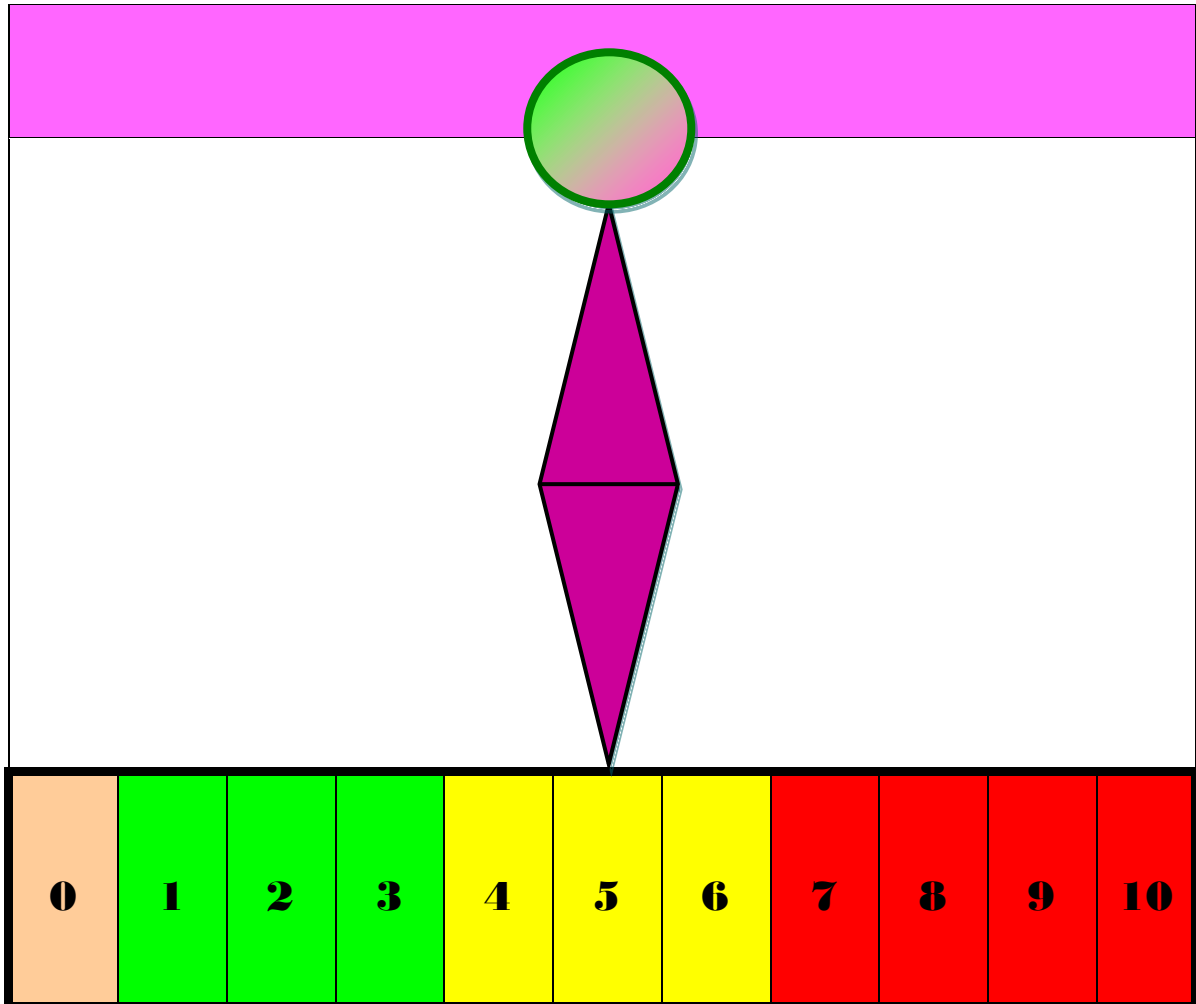
- a) Sedentary work
- b) Moderate work
- c) Heavy work

9. Impact on activities of daily living

- a) Interfering little with activities of daily living
- b) Interfering significantly with activities of daily living
- c) Unable to perform activities of daily living

SECTION - B

Numerical pain intensity scale for pain assessment



Scoring

- 0 - No pain
- 1-3 - Mild pain
- 4-6 - Moderate pain
- 7-10 - Severe pain

பிரிவு -அ

முறையான நேர்காணல் படிவம்

கீழ்க்கண்ட வினாக்களுக்கு தகுந்த பதிலை கொடுக்கப்பட்ட கட்டத்தில் (✓)
குறியிடுக

மாதிரி எண்: _____

1. வயது

- அ. 46-50 வருடம்
- ஆ. 51-55 வருடம்
- இ. 56-60 வருடம்

2. திருமண விவரம்

- அ. திருமணமானவர்
- ஆ. திருமணம் ஆகாதவர்

3. குடும்பத்தின் வகை

- அ. தனிக் குடும்பம்
- ஆ. கூட்டுக் குடும்பம்
- இ. விரிவான குடும்பம்

4. கல்வித் தகுதி

- அ. பயிலாதவர்
- ஆ. தொடக்கக் கல்வி பயின்றவர்
- இ. நடுநிலை கல்வி பயின்றவர்
- ஈ. உயர்நிலை கல்வி பயின்றவர்
- உ. பட்டதாரி

5. வேலை

- அ. இல்லத்தரசி
- ஆ. சுய வேலை
- இ. தனியார் வேலை
- ஈ. தினக்கூலி
- உ. அரசு வேலை

6. குடும்பமாத வருமானம்

- அ. \leq ₹. 4000
- ஆ. ₹. 4001-5000
- இ. ₹. 5001- 6000
- ஈ. \geq ₹. 6001

8. வலியின் கால அளவு

- அ. 0-1வருடம்
- ஆ. 2-3 வருடம்
- இ. 4-5 வருடம்

9. வேலையின் தன்மை

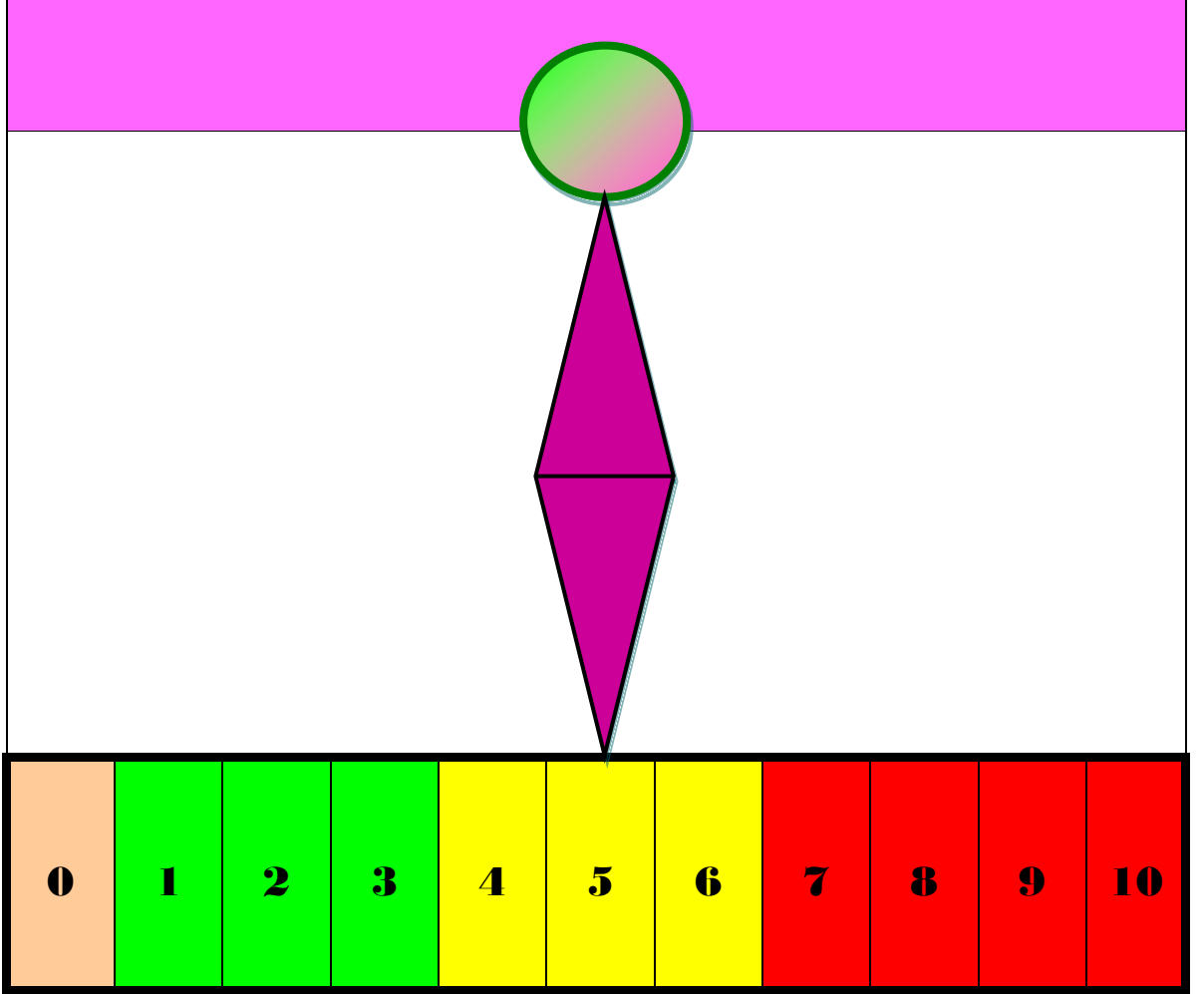
- அ. இலேசான வேலை
- ஆ. மிதமான வேலை
- இ. கடுமையான வேலை

10. தினசரி வாழ்க்கை நடவடிக்கைகளின் பாதிப்பு

- அ. தினசரி வாழ்க்கை நடவடிக்கைகளில் சிறிது குறுக்கிடுதல்
- ஆ. குறிப்பிடத்தக்க தினசரி வாழ்க்கை நடவடிக்கைகளில் குறுக்கிடுதல்
- இ. தினசரி வாழ்க்கை நடவடிக்கைகள் செய்ய முடியவில்லை

பிரிவு -ஆ

வலிமதிப்பீட்டிற்கான பார்வை அளவுகோல்



மதிப்பெண்கள்

- 0 - வலி இல்லை
- 1-3 - குறைந்த அளவு வலி
- 4-6 - நடுநிலையான வலி
- 7-10 - அதிகபட்சமான வலி

PROTOCOL FOR CAMPHOR OIL APPLICATION

Introduction

Camphor oil is a main component of medicines and ayurvedic treatments originating in India. It commonly used as an ingredient in balms and ointments that treat muscle pain. This essential oil is extracted from camphor.

Definition

Joint Pain

It refers to the pain on the joint.

Camphor

A white, volatile, crystalline substance with an aromatic smell.

Camphor Oil

Camphor oil is known to relieve pain related to joints, arthritis, sprains, back ache etc. This oil is potent and has a higher efficacy to give relief in painful muscular skeletal condition.

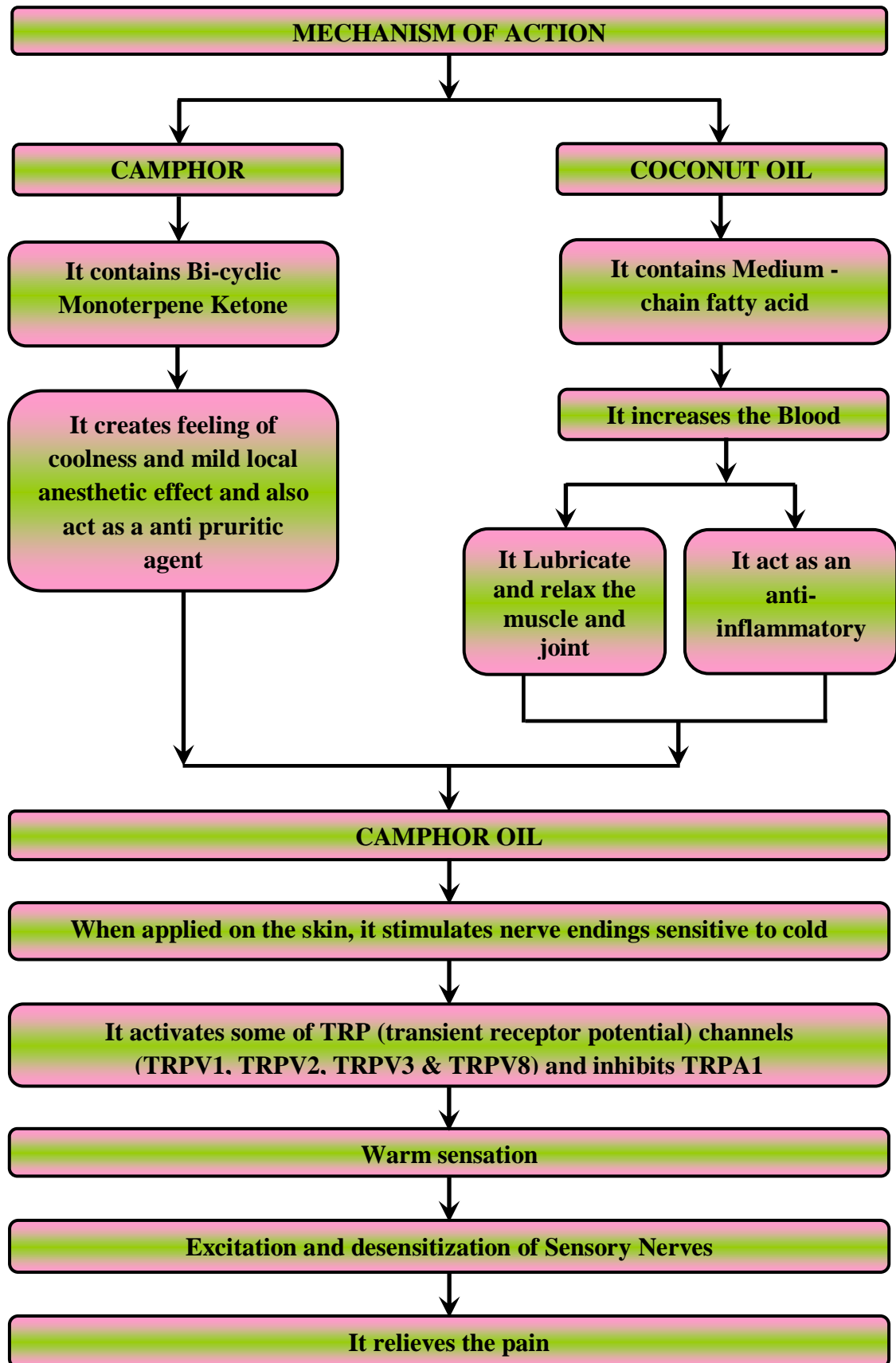
Goal

Helps to reduce the joint pain.

Uses

- It is used to relieve pain in joints
- To relieve congestion, when cough
- It increases local blood flow
- It also been applied topically as analgesic

Mechanism of Action



Ingredients

- Coconut oil
- Camphor

Preparation of camphor oil

- Take 1500 ml of coconut oil and heat it, till it become the warm condition.
- When it is warm add 375g of camphor, and stir it until the camphor dissolves.
- Work cautiously, that the camphor will not evaporate.

Procedure to Apply Camphor Oil

- The samples were selected as per inclusive criteria.
- Assessed the severity of joint pain by using numerical pain intensity scale and then applied 3ml of camphor oil on the knee joint and check for any allergic reaction.
- If allergic reaction is found, then the knee joint will be washed immediately with soap and water. Otherwise it is continued for 5 consecutive days from 1st day onwards for 10-15 minutes, preferably morning and evening.
- Post test was done on the 6th day for 5 minutes by using the same scale to find out the effectiveness of camphor oil among menopausal women.

After Care

- Requested the client to remain on the same position for 15 minutes after the application.
- Make the client comfortable.

- The samples educated to do their daily activities after 15 minutes following the application of camphor oil.

Contra Indication

- Women who are allergic to camphor oil.
- Camphor oil should not be applied to broken skin.
- Women with seizure disorder.

Conclusion

Camphor oil is a balancing oil; it can sedate the nerve and uplift apathy. It can help with feeling cold, reduces inflammation and joint pain. Camphor oil also can be used in treatment of nervous depression, acne, inflammation, arthritis, muscular aches and pains, sprains, rheumatism, bronchitis, coughs, colds, fever, flu and infectious diseases.

**EFFECTIVENESS OF CAMPHOR OIL APPLICATION ON
REDUCTION OF JOINT PAIN AMONG MENOPAUSAL
WOMEN AT SELECTED RURAL AREAS,
COIMBATORE**

