

EFFECTIVENESS OF KNEE POULTICES ON CHRONIC KNEE PAIN IN ELDERLY PEOPLE

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Abstract

General Information of the Sample In the experimental group, most patients were female, aged 60-64, primarily farmers. Many had underlying conditions and reported pain in both knees, with onset periods of 1-5 years. They typically used painkillers once a day and most had experienced accidents. In the control group, most patients were also female, aged 55-59, primarily farmers. They had underlying conditions such as hypertension, often experiencing pain in one knee. Similar to the experimental group, they reported onset periods of 1-5 years and used painkillers once a day, but none had experienced accidents.

Effects of Herbal Poultices and Herbal Compresses in Patients with Osteoarthritis The mean severity of osteoarthritis (NOMAC) before and after the 7-day trial in the poultice group showed significant reduction, with a difference at the 0.05 level. The mean severity of osteoarthritis (WOMAC) in the herbal compress group also showed significant reduction after the 7-day trial, at the 0.05 level. Quality of life in the medication group improved significantly after 7 days, with a difference at the 0.05 level. The quality of life in the herbal compress group also improved significantly after 7 days, at the 0.05 level. The average degree of motion of the knee joint in the poultice group increased significantly after 7 days, at the 0.05 level. Similarly, the herbal compress group showed a significant increase in the degree of motion after 7 days, at the 0.05 level. After 7 days, the poultice was more effective than the herbal compress in reducing osteoarthritis symptoms (WOMAC) in terms of stiffness and joint usability, with a significant difference at the 0.05 level. In comparing quality of life after 7 days, both the poultice and herbal compress groups showed improvements, but no significant difference was found at the 0.05 level. The poultice and herbal compress both increased the degree of movement of the knee joint after 7 days, with no significant difference at the 0.05 level.

Keywords: Knee poultices, knee pain, the elderly

Introduction

As life expectancy increases, the incidence of osteoarthritis is rising, particularly among those aged 60 and older. The knee joint bears the body's weight during various activities such as walking, standing, and sitting. Daily habits—like sitting cross-legged, squatting, exercising, or experiencing slips and falls—can contribute to knee problems at any age. If left untreated, these issues may lead to osteoarthritis.

Knee pain can often overlap with other conditions, making it difficult to identify symptoms externally. Physicians evaluate symptoms and diagnose based on patient history and physical examination. If a serious knee injury is suspected, an MRI may be necessary to accurately assess the severity.

Knee masks, a key aspect of Thai traditional medicine, are effective in reducing pain and stiffness while improving knee mobility, especially in the elderly. They are particularly

beneficial for patients with kidney, heart, or stomach conditions, as they reduce reliance on painkillers and minimize the risk of significant side effects.

Research Objectives

1. To study the effectiveness of knee poultices in alleviating chronic knee pain in the elderly.

Scope of the Research

- 1. Population Scope :** The research will involve patients visiting the Thai Traditional Medicine Clinic at Suan Sunanda Rajabhat University from October 2023 to September 2024. Participants will be selected based on diagnostic criteria for osteoarthritis established by the Royal College of Orthopaedics of Thailand, the Rheumatology Association of Thailand, and the Royal College of Rehabilitation Medicine of Thailand (2011) (Kirati Charoenchonvanich, 2016, p. 4). Additionally, the Oxford Knee Score screening criteria (Pavini Kulsarawet et al., 2018) will be utilized for diagnosis by a family medicine doctor.

- 2. Variable Scope :** In this study, the researcher utilized G*POWER 3.1, a program developed for power analysis (Erdfelder, 1996). The analysis set the desired power at 0.80, with a significance level of 0.05 and an effect size of 0.81. A sample of 50 participants was selected through simple random sampling, divided into two groups of 25 each: one group received treatment with knee poultices, while the other group was treated with herbal compresses. Participants were allocated using a non-return lottery method, assigning odd numbers to the experimental group and even numbers to the comparison group.

- 3. Time Scope :** The data collection period spans from October 2023 to September 2024.

Literature Review

The knee joint consists of the femur, tibia, and patella, along with muscles, cartilage, and tendons. These components can be susceptible to injury, infection, and various conditions that lead to knee pain.

Knee pain can be acute or chronic, gradually worsening over time. It can cause discomfort, making it difficult to walk or bear weight on the affected leg, ultimately impacting overall health and quality of life.

Several factors contribute to knee pain, including age, weight, activity intensity, and other risk factors. According to the National Statistics Office, Thailand's birth rate has been declining, from 47.2 per 1,000 people in 1964-1965 to only 10.9 per 1,000 in 2005-2006. Meanwhile, the mortality rate has remained relatively stable. As of 2007, the total population in Thailand was nearly 63 million, with approximately 6.8 million elderly individuals, accounting for 11% of the population. The Department of Administrative Affairs identified the provinces with the highest aging index: Lampang (121.79%), Lamphun (116.48%), and Phrae (116.47%). In contrast, the provinces with the lowest aging index included Narathiwat (36.17%), Krabi (37.62%), and Yala (37.67%).

These statistics indicate that Thailand is transitioning toward an aging society, similar to many countries worldwide. The declining birth rate is coupled with changing societal attitudes, with more individuals choosing to remain single or opting for smaller families. Additionally, advancements in medical technology have contributed to increased longevity.

To prepare for the challenges of an aging society, Thailand must enhance social welfare, improve facilities in public places, advance medical care, and establish appropriate laws and policies.

Chadanpas (2023) conducted a study comparing the effects of herbal poultices

formulated with cannabis to basic formulations for knee pain in patients with osteoarthritis at the Hospital of Thai Traditional and Integrative Medicine Health Zone 9 in Surin Province. The aim was to evaluate the quality of life of patients before and after using the cannabis-infused poultices versus the basic formulations.

This randomized double-blind controlled trial involved 50 participants, divided into two groups. Group 1 received a cannabis-infused knee poultice, while Group 2 received a basic knee poultice. Both treatments were administered for 30 minutes, scheduled over two days for a total of three sessions.

The effectiveness of the treatments was assessed using the Knee Symptom Assessment Form (WOMAC), the Visual Analog Scale (VAS) for pain, and a goniometer to measure the range of motion in the knee joint. The severity of osteoarthritis was evaluated using the Oxford Knee Score, and quality of life was assessed with the WHOQOL questionnaire. Data analysis included calculating percentages, means, standard deviations, and applying paired and unpaired t-tests.

The results indicated that both groups experienced a reduction in knee pain. However, there were no statistically significant differences between the two groups regarding pain levels, stiffness, or joint activity (p -value < 0.01). The use of cannabis-infused poultices was found to be an effective treatment option for managing osteoarthritis symptoms.

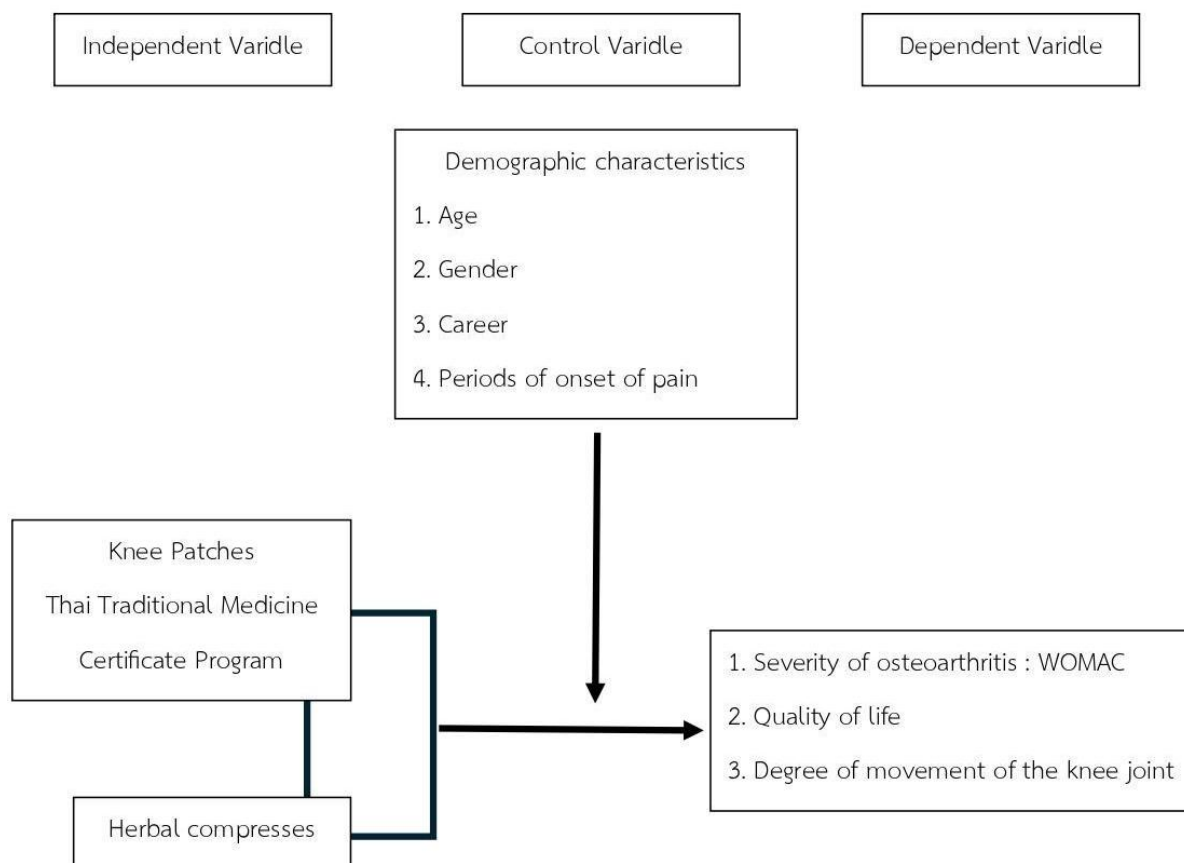


Figure 1: Research Conceptual Framework

Research Methodology

Step 1 : Population The research population consists of patients attending the Thai Traditional Medicine Clinic at Suan Sunanda Rajabhat University from October 2023 to September 2024. Participants will be diagnosed with osteoarthritis based on criteria established by the Royal College of Orthopaedics of Thailand, the Rheumatology Association of Thailand, and the Royal College of Rehabilitation Medicine of Thailand (2011) (Kirati Charoenchonvanich, 2016, p. 4). The Oxford Knee Score screening criteria (Pavini Kulsarawet et al., 2018) will also be utilized, with diagnoses made by family medicine doctors.

Step 2 : Sample Size and Design The researcher used G*POWER 3.1, a program based on power analysis (Erdfelder, 1996), to determine a power of 0.80, a significance level of 0.05, and an effect size of 0.81. To account for potential data incompleteness, a sample of 50 participants was selected. They were divided into two groups: 25 individuals receiving knee poultice treatment and 25 receiving herbal compresses. Random sampling was conducted using a non-return lottery, assigning odd numbers to the experimental group and even numbers to the control group.

Step 3 : Treatment Protocol The experimental group received poultice treatment during weeks 1, 3, and 5 for 20 minutes each session. The control group was treated with herbal compresses for 10 minutes daily over 7 consecutive days, which was determined to be the most effective duration.

Step 4 : Data Collection Data collection was conducted by the researcher in three phases : Initial Assessment: Before the application of poultices and herbal compresses.

Post-Treatment Assessment: After the 5th week for the poultice group and after 7 days for the herbal compress group. Follow-Up Assessment: After a 7-day cessation of treatment for both groups. Assessments included the severity of osteoarthritis using the WOMAC scale, quality of life evaluations, knee measurement records, and adverse reaction documentation.

Step 5 : Data Analysis Data from the samples will be verified for accuracy and analyzed using a statistical software program to obtain relevant statistical values.

Research Results

This research is a semi-experimental study aimed at evaluating the effectiveness of knee poultices in alleviating chronic knee pain in the elderly.

1. General Information of the Sample In the experimental group, most patients were female, aged 60-64, primarily farmers. Many had underlying conditions and reported pain in both knees, with onset periods of 1-5 years. They typically used painkillers once a day and most had experienced accidents. In the control group, most patients were also female, aged 55-59, primarily farmers. They had underlying conditions such as hypertension, often experiencing pain in one knee. Similar to the experimental group, they reported onset periods of 1-5 years and used painkillers once a day, but none had experienced accidents.

2. Effects of Herbal Poultices and Herbal Compresses in Patients with Osteoarthritis

2.1 The mean severity of osteoarthritis (NOMAC) before and after the 7-day trial in the poultice group showed

significant reduction, with a difference at the 0.05 level.

2.2 The mean severity of osteoarthritis (WOMAC) in the herbal compress group also showed significant reduction after the 7-day trial, at the 0.05 level.

2.3 Quality of life in the medication group improved significantly after 7 days, with a difference at the 0.05 level.

2.4 The quality of life in the herbal compress group also improved significantly after 7 days, at the 0.05 level.

2.5 The average degree of motion of the knee joint in the poultice group increased

significantly after 7 days, at the 0.05 level.

2.6 Similarly, the herbal compress group showed a significant increase in the degree of motion after 7 days, at the 0.05 level.

2.7 After 7 days, the poultice was more effective than the herbal compress in reducing osteoarthritis symptoms (WOMAC) in terms of stiffness and joint usability, with a significant difference at the 0.05 level.

2.8 In comparing quality of life after 7 days, both the poultice and herbal compress groups showed improvements, but no significant difference was found at the 0.05 level.

2.9 The poultice and herbal compress both increased the degree of movement of the knee joint after 7 days, with no significant difference at the 0.05 level.

Discussion

This study investigated the effectiveness of topical poultices compared to herbal compresses in patients with osteoarthritis, utilizing the Osteoarthritis Severity Assessment (WOMAC), quality of life metrics, and knee joint mobility measurements. Results indicated that knee movement improved and assessment scores increased across all areas following treatment. Specifically, after 7 days, both groups showed significant improvements in WOMAC scores related to pain, symptoms, stiffness, and joint function ($p < 0.05$).

Patients treated with poultices exhibited higher WOMAC scores than those treated with herbal compresses, indicating reduced knee pain and stiffness, as well as enhanced knee joint functionality. These findings align with Payom Suwan's research (2000, p. 71), which highlighted improvements in joint pain, stiffness, and activity levels in osteoarthritis patients receiving herbal compresses.

Regarding quality of life, both groups experienced a significant increase ($p < 0.05$) after the 7-day treatment period. However, there was no statistically significant difference between the two groups in quality of life outcomes at the end of the trial ($p > 0.05$). Previous studies suggest that quality of life is influenced by various factors such as gender, age, occupation, and underlying health conditions, consistent with Vassana Krudthai's research (2010), which identified demographic factors related to quality of life in osteoarthritis patients receiving traditional Thai medicine.

The assessment of knee joint mobility revealed a significant increase for both groups ($p < 0.05$) after 7 days. However, there was no statistically significant difference between the poultice and herbal compress groups ($p > 0.05$). Both treatments effectively enhanced knee mobility in osteoarthritis patients, indicating beneficial outcomes for managing the condition.

Recommendations

1. Alternative Treatment: This study offers an alternative approach within Thai traditional medicine for treating patients with osteoarthritis.

2. Public Awareness: The findings can be used to inform and advise the public and service recipients about utilizing Thai traditional medicine services, promoting the advancement of traditional medical knowledge.

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