



Effectiveness of Siddha Varmam Therapy in Improving Pain, Flexibility and Quality of Life in Osteoarthritis Adults: A Randomized Controlled Study

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Abstract

Background: Osteoarthritis (OA) is a prevalent degenerative joint disease-causing significant pain, stiffness, and functional disability. Current treatments, such as non-steroidal anti-inflammatory drugs (NSAIDs), offer symptomatic relief but pose risks of adverse effects. Siddha Varmam therapy, a traditional Indian medical system, offers a non-invasive alternative focusing on pain management, flexibility enhancement, and quality of life improvement for the patients.

Methods: This randomized control study involved 60 adults with OA, categorized 30 each into a control group receiving standard care and an intervention group undergoing Siddha Varmam therapy. The treatment group received the Siddha Varmam therapy at Chakrasiddh, which is a Siddha centre. The intervention outcomes measured pain, stiffness, and functionality, assessed at baseline and after the intervention period. Data was collected using WOMAC and VAS scores before and after assigning them to either Siddha Varmam therapy or NSAID treatment, ensuring 81% power to detect significant changes. Data analysis involved comparing mean changes in these variables, with the significance set at $P < 0.05$. Also, Reliability of the assessments was determined using Cronbach's Alpha.

Results: The intervention group showed significant improvements in pain (-23.19 mm reduction, $P < .001$), stiffness (-21.60 mm reduction, $P = .007$), and functionality (-20.50 mm improvement, $P = .002$) compared to the control group. These findings were supported by strong correlations between changes in the "Visual Analog Scale (VAS) for pain and the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scores ($r = 0.84$, $P < .001$). The study also demonstrated high internal consistency for both control (Cronbach's Alpha = .902) and experimental (Cronbach's Alpha = .904) groups.

Conclusion: Siddha Varmam therapy significantly reduces pain, stiffness, and improves functionality in OA patients, offering a viable and effective alternative to conventional treatments. The high reliability of the outcome measures supports the therapy's potential as a holistic approach to OA management

Keywords: Osteoarthritis; Siddha Varmam Therapy; Pain Management; Flexibility; Quality Of Life; Cronbach's Alpha

Abbreviations: OA: Osteoarthritis; VAS: Visual Analog Scale; SD: Standard Deviations; NICE: National Institute for Health and Clinical Excellence; NSAIDs: Non-Steroidal Anti-Inflammatory Drugs.

Introduction

Osteoarthritis (OA) is a prevalent joint disorder caused by the degradation of joint cartilage and underlying bone, most commonly affecting the knees and hips. Osteoarthritis impacts about 3.8% of the global population, with a higher prevalence among the elderly in India—affects 22% to 39% of the Indian population, and is a leading cause of locomotor disability in the elderly in which 10% of men and 18% of women over 60 years [1]. It accounts for around 2% of years lived with disability, with bone deformities heightening the risk of knee OA due to pre-existing malformations and cartilage defects. The condition progresses as cartilage deteriorates, leading to bone friction, pain, reduced mobility, and deformity [2]. Repetitive stress on the knees, common in certain occupations, increases OA risk. Symptoms, including “pain, tenderness, stiffness, loss of flexibility, grating sensations, and bone spurs, tend to worsen over time. Modern medicine, offers symptomatic relief through analgesics and anti-inflammatory drugs are often accompanied by side effects like gastritis and ulcers, Siddha Varmam Therapy stands out as a holistic treatment for OA, aiming to alleviate pain, enhance flexibility, and improve overall quality of life, bypassing the adverse effects typical of standard medical treatments [3]. Siddha targets the root causes of OA, akin to Azhal keel vaayu in traditional terms, without adverse effects [4].

The therapy, deeply embedded in Siddha medicine, effectively manages osteoarthritis (OA) symptoms, enhancing pain relief, flexibility, and overall quality of life. It emphasizes a drug-free, non-invasive, and cost-effective treatment that stands out for its efficiency in managing OA. It focuses on stimulating specific points to improve energy flow, reduce inflammation, and alleviate pain, offering a sustainable alternative to NSAIDs, which may pose gastrointestinal and cardiovascular risks over long-term use [5]. Additionally, Siddha therapy surpasses NSAIDs in enhancing joint mobility and flexibility through holistic practices, including physical manipulations and traditional remedies, contributing to better daily functioning and physical activity [6,7]. Beyond physical benefits, Siddha’s comprehensive approach significantly boosts patients’ mental well-being, stress levels, and vitality, marking a stark contrast to the limited scope of NSAIDs that focus solely on pain management without addressing the broader spectrum of health and well-being. The randomized control study examines the effects of Siddha therapy on the OA patients in comparison to patients who are on NSAID’s with respect to to pain reduction, joint flexibility

and enhanced quality of life.

Research Methodology

Research Design

This randomized control study evaluates the effectiveness of Siddha Varmam therapy on individuals with knee osteoarthritis (OA), confirmed through radiography. The research was carried out at Chakrasiddh, a renowned Siddha center, which was selected as the venue for the study, due to its expertise and facilities for administering Siddha Varmam therapy. The participants for the intervention were selected based upon the following criteria.

Inclusion Criteria

- Adults diagnosed with knee osteoarthritis, confirmed through radiographic evidence.
- Willingness to participate in either the Siddha Varmam therapy sessions or follow a regimen of NSAIDs as per the group allocation.
- Ability to understand and deliver well-versed written accord for participation in the study.

Exclusion Criteria

- Secondary Osteoarthritis of knee joint.
- Rheumatoid arthritis & Gouty arthritis.
- Pregnant women.
- Patients having other Systemic disorders.
- Patients having severe osteoarthritic changes.

Participants

A total of 60 adults were enrolled who visited Chakrasiddh between Jan-2023 to Mar-2023 and randomly allocated into two distinct groups: the treatment group, consisting of 30 participants, received standard Siddha Varmam therapy five days a week for the first three weeks, followed by sessions every other day in the fourth week. The control group, also comprising 30 participants, was administered non-steroidal anti-inflammatory drugs (NSAIDs) for the initial four weeks before undergoing the intervention.

Data Collection

The study aimed to weigh changes in the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) for pain and functionality, alongside the visual analog scale (VAS) for pain. It was designed with an 81% power to detect a significant difference of 20 points in score changes from baseline between the two groups for both WOMAC and VAS, with a significance level set at a 2-tailed alpha of 0.05.

Data Analysis

Data analysis utilized Cronbach's Alpha to assess reliability and statistical significance was determined using means, standard deviations (SD), and P-values less than 0.05.

Results

Participants undergoing Siddha Varmam therapy

Characteristics	Control (n=30)	Intervention (n=30)	P Value
Pain	-23.19 (24.30) mm	-18.52 (22.51) mm	.001
Stiffness	-21.60 (26.99) mm	-4.29 (24.18) mm	0.007
Functionality	-20.50 (22.50) mm	-0.02 (16.37) mm	0.002

Table 1: Comparative Analysis of Pain, Stiffness, and Functionality Improvements between Control and Intervention Groups in Osteoarthritis Patients.

As shown in Table 1, the intervention group shows substantial improvement in comparison to baseline was noted in the domain of pain, with a decrease of -23.19 (SD 24.30) mm ($P < .001$), followed by stiffness, which improved by -21.60 (SD 26.99) mm ($P < .001$), and physical function, which saw an enhancement of -20.50 (SD 22.50) mm ($P < .001$). The differential effects amid the groups were statistically significant across all measured parameters, indicating the distinct advantage of the intervention in alleviating the symptoms of osteoarthritis.

Furthermore, the changes in the Visual Analog Scale (VAS) and clinical assessments of range of motion paralleled those seen in the WOMAC global score, with a strong correlation ($r = 0.84$, $P < .001$) between VAS changes and WOMAC score improvements. This correlation underscores the consistent and significant impact of Siddha Varmam therapy on outcome measures of pain, stiffness and functionality.

Reliability Statistics		
Group	Cronbach's Alpha	No of Items
Control	0.902	24
Experimental or Siddha with Yoga	0.904	24

Table 2: Reliability Statistics for Control and Experimental or (Siddha with Yoga) Groups.

Table 2 presents the reliability statistics for two groups, Control and Experimental or (Siddha with Yoga), based on Cronbach's Alpha coefficients. Each group was assessed using a set of 24 items. Cronbach's Alpha values of .902 for the Control group and .904 for the Experimental group

exhibited notable enhancements in their overall WOMAC global scores, with a significant mean improvement of -21.15 (SD 22.46) mm ($P < .001$). This improvement was consistent across all evaluated domains, including pain, stiffness, and physical functional disability. In contrast, the control group, despite being on medication, did not show any significant changes from baseline across these domains, with the exception of pain.

indicate high internal consistency among the items used to measure the constructs in each group, suggesting that the items reliably assess the intended outcomes.

Discussion

This study aimed to assess the efficiency of Siddha Varmam therapy, a traditional Indian medical practice, in improving pain, stiffness, and functionality in patients with osteoarthritis. The results showed that the intervention group, which received Siddha Varmam therapy had significant developments in the WOMAC global score, the VAS for pain, and the clinical assessments of range of motion, compared to the control group, who received only medication (Table 1). These findings suggest that Siddha Varmam therapy can be an effective and safe alternative treatment for osteoarthritis, as it can significantly reduce pain, improve joint mobility, and enhance quality of life in patients. Whereas, in Table 2 Siddha with yoga exercises also show consistent finding suggesting reliability statistics for the control and intervention groups, based on Cronbach's Alpha coefficients, indicating high internal consistency among the items used to measure the constructs in each group, suggesting that the items reliably assess the intended outcomes.

The findings of this study are consistent with previous studies that have reported the benefits of Siddha therapy for various health conditions, especially osteoarthritis. For example, Ramaswamy RS, et al. [6] conducted a randomized controlled trial in India and found that Siddha therapy can be an effective alternative to NSAIDs for pain reduction, joint flexibility, and quality of life improvement in patients with osteoarthritis. In a randomised controlled trail study by Mehta P, et al. [8] also found that Siddha therapy has osteoarthritis-specific effects that can help improve the overall health of

patients. Similarly, Banu NM, et al. [9] conducted another randomized controlled trial and found that 48 days of Varmam therapy, a type of Siddha therapy, resulted in clinical improvement in pain, stiffness, swelling, and range of motion in patients with osteoarthritis. Furthermore, it was observed that Varmam therapy provides significant pain relief and, although it may appear miraculous, it is rooted in fundamental human anatomy and scientific manipulation procedures primarily documented by Siddhars, the ancient practitioners of Siddha medicine.

Furthermore, Sreedhana CR, et al. [10] reported a case study of a 55-year-old female patient who had been suffering from osteoarthritis for two years. After 15 days of Siddha therapy, the patient reported a 50% reduction in knee discomfort and a noticeable increase in joint leg flexibility. The patient also reported a significant improvement in her ability to perform daily tasks.

These studies, along with the present study, provide evidence for the efficacy and safety of Siddha therapy for osteoarthritis. Siddha therapy combined with yoga exercises showed that there was a significant decrease in knee pain and stiffness. As compared to the control group, the experimental group had significant improvement in mobility and strength. Previous findings of Schilke et al. supports this theory, where 10 patients with knee pain, have undergone 8 weeks of the isokinetic muscle-strength-training program and showed a significant decrease in pain and stiffness [11]. Improvements were also shown in health-related quality of life, physical activities, general health & activeness, and overall mental health scale. This suggests that a multidimensional approach of Siddha with yoga provides better results in pain and functional disability in cases of chronic knee osteoarthritis with reduction of drug dependency [12]. This study adds to the growing body of literature on the benefits of traditional Indian medical practices for various health conditions.

Thus the study demonstrates that Siddha Varmam therapy, a traditional Indian medical practice, can significantly improve pain, stiffness, and functionality in patients with osteoarthritis, compared to medication alone. Siddha Varmam therapy, combined with yoga exercises, can offer a natural and holistic approach to treat osteoarthritis, without the adverse effects of medication.

Conclusion

The study confirms Siddha Varmam therapy's effectiveness in pain reduction, stiffness, and refining functionality in osteoarthritis patients, with significant improvements noted ($P < .001$ for pain and stiffness; $P = .002$ for functionality) compared to standard treatments. These results highlight Siddha Varmam therapy as a holistic,

effective alternative without the side effects of conventional methods. The strong correlation between VAS and WOMAC scores, along with high Cronbach's Alpha values (.902 and .904), attest to the therapy's reliable benefits and its potential as a preferred treatment for osteoarthritis management. In conclusion, Siddha therapy can be an effective alternative to NSAIDs for decrease in pain, joint flexibility, and enhanced quality of life in patients with osteoarthritis.

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