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COMPARATIVE STUDY OF LOCAL STEAM APPLICATION AND WAX THERAPY ON KNEE OSTEOARTHRITIS – A PILOT STUDY

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ABSTRACT

Background: Osteoarthritis (OA) is most common form of joint degeneration and is not curable it needs to be treated with long lasting harmless methods. Steam therapy (group 1) and wax therapy (group 2) are naturopathic modalities, which can be well utilized in treating Osteoarthritis. Though modern medicine has various surgical and non-surgical options, they are not without harm. So this study aims to study effectiveness of natural and harmless method of steam therapy and wax therapy and also compare its effectiveness with each other. **Materials and Methods:** 60 subjects, both males and females were recruited for the study. 30 in each group, that is steam therapy group and wax therapy group. Subjects were assessed at baseline and 10th day after an intervention. The collected data were analyzed by using appropriate statistical software. **Results:** Group 2 (Steam Therapy) showed a significant decrease in pain, when compared with the group 1 after the 10 days of intervention. Both Group 1 and Group 2 demonstrated no intricacies as they were unadulterated naturopathy treatment modalities. Group 2 indicated predictable abatement in the McGill scores in all the subsequent periods and there was long lasting relief. **Conclusion:** In terms of significant and long lasting relief in group 2 and absence of complications, we conclude that Wax Therapy is the preferred method of choice over Steam therapy for Osteoarthritis of knee.

KEYWORDS: Naturopathy; Osteoarthritis; Steam therapy; Wax therapy; McGill.

INTRODUCTION

Naturopathy is an extremely old science. We can locate various references in our Vedas and other old writings. The dismal issue hypothesis, ideas of essential power and different ideas whereupon Naturopathy is based are now accessible in old writings. The restoration of Naturopathy began in India by interpretation of Germany's Louis Kuhne's book "New Science of Healing". It consists of non-invasive treatment modalities like diet therapy, fasting therapy, steam therapy, wax therapy, mud therapy, hydro therapy, massage therapy, acupressure, acupuncture, chromo therapy, and magnet therapy.[1] Wax therapy is an important treatment modality used in naturopathy.[2] Steam therapy has been used to treat rheumatic conditions since time immemorial, representing an unquestionable reality.[3] However, there are only a few review articles that assess the restorative impact of the above application in knee OA.[4]

Wax therapy, which uses a bath of molten paraffin wax, is one of the most effective ways of applying heat to improve mobility by warming the connective tissues. Wax therapy is mainly used on your hands and is often used by hand therapists in a hospital setting along with an exercise programme.[5] Steam application to knee is also one of the naturopathic treatment modality used mainly in the clinical practice for the management of OAK in most of the naturopathy clinics/hospitals. Steam therapy has traditional references; more studies are required to establish the efficacy and usefulness of Steam therapy in various diseases.[6]

Osteoarthritis (OA) is an interminable, dynamic and impairing joint illness described by degenerative change in bones, ligament, menisci, tendon, and synovial tissue. It can happen in each synovial joint, yet is most regular in hip and knee joint.[7] Osteoarthritis is more typical in ladies than men yet the commonness increments significantly with age. 45% of ladies beyond 65 years old have side effects while radiological confirmation is found in 70% of those more than 65.[8] The essential objectives of administration of patients with OA are the control of pain and to acquire change capacity and wellbeing related personal satisfaction with shirking of harmful pharmacological impacts.[9] Hence this

investigation expects to assess and look at the adequacy of each of these two treatment strategies i.e. Steam and Wax Therapy[10] in order to serve the purpose of providing better treatment procedure for Osteoarthritis of Knee.

Aims and objectives

The fundamental goal of this Study is to assess and evaluate about the impact of Steam treatment and Wax treatment in Osteoarthritis of knee by using McGill pain questionnaire.

METHODOLOGY

60 subjects of both male and female in between the age of 40 to 70 years were recruited for the study after the investigation.

Subjects were analised on the basis of American College of Rheumatology criteria for osteoarthritis and Kellgren Lawrence radiographic stages 1, 2 and 3.

The subjects were in patients of shanthivana naturopathy and yogic center, Ujire. D.K. Karnataka. As per the American College of Rheumatology Diagnostic Criteria for Osteoarthritis of Knee[11] the following are considered, Pain in the knee and present with any three of the following criteria: Age >40 years, Morning Stiffness <30 minutes, Crepitus, Bony tenderness, Bony enlargement, No palpable warmth of synovium.

Exclusion Criteria: Subjects who do not meet the inclusion criteria are Rheumatoid Arthritis, Gout, Fibromyalgia, Road traffic accident (knee fractures), Arthroscopy of the knee within the previous year, Psoriatic arthritis, Rash or open wounds over the knee and Oral steroids within the last four weeks.

The subjects were told about the examination and consent was taken from every person. Institutional Ethical Committee affirmed the investigation.

Study Setting: Subjects were distributed to two gatherings by basic randomization technique in light of picking chits with amass number. Group 1 was managed with Steam therapy and Group 2 experienced Paraffin wax therapy. Detailed history and examination were done regarding these matters and discoveries recorded at each visit.

A prospective randomized controlled trial with a Sample size of (n=60)

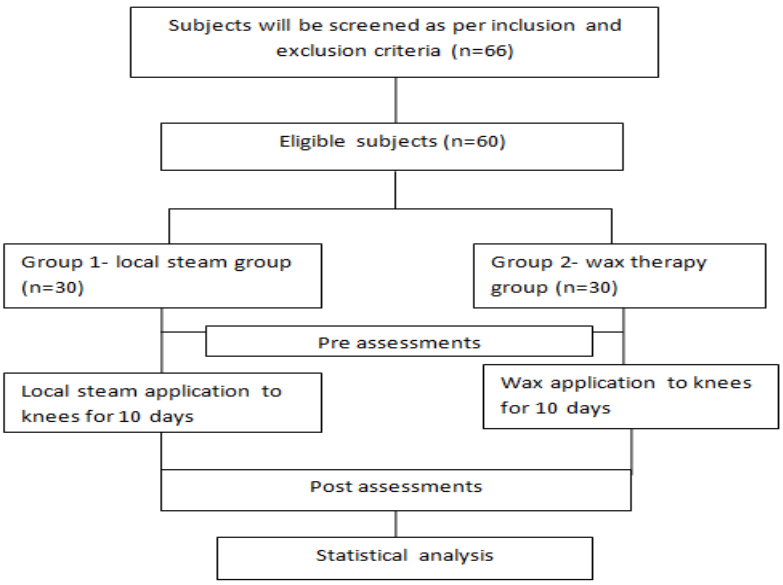
Two groups with 30 subjects in each will be taken for the study

Group I = local steam along with yoga and naturopathy treatment (n=30)

Group 2 = wax therapy along with yoga and naturopathy treatment (n=30)

The study subjects will be identified and screened as per the demands of the inclusion and exclusion criteria. Selected subjects will be randomly allocated into two groups by computer generated randomization method.

Pre assessment prior to the intervention and post assessments will be done after completing the 10 days of intervention using the variables. The data collected will be tabulated and analyzed using appropriate statistical methods. An assessment of pain was calculated by using McGill pain questionnaire.[12]



RESULTS

The present investigation was directed to compare, evaluate and assess if Steam application and Wax application had any effect on pain by McGill Questionnaire with Short Form 36 (SF 36) and personal satisfaction in patients with osteoarthritis of knee for here and now length result were contrasted and two gatherings, Group 1(Steam Therapy) and Group 2(Wax Therapy), wherein information was taken at both benchmark and post intervention. The outcomes

indicated noteworthy distinction in Group1in seriousness of pain. Steam Therapy (Group 1) demonstrated noteworthy decrease in pain and there was much change found in the Wax Therapy (Group2) in improvement of condition of pain. T test was improved the situation correlation between two groupings. Group 2 has demonstrated huge distinction in scope of movement. Group 1 demonstrated huge contrast in pain, compared to Group 2 by McGill Questionnaire.

Group 1: Steam Therapy
Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Steam PRE	75.03	30	16.806	3.068
POST	62.43	30	15.042	2.746

Paired Samples Correlations

	N	Correlation	Sig.
Steam pre and post	30	.952	.000

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Upper	Lower			
Steam	12.600	5.250	.958	10.640	14.560	13.146	29	.000

Group 2: Wax Therapy
Paired Samples Statistics

Wax Therapy	Mean	N	Std. Deviation	Std. Error Mean
PRE	85.27	30	19.886	3.631
POST	54.13	30	13.429	2.452

Paired Samples Correlations

Wax Therapy	N	Correlation	Sig.
PRE & POST	30	.877	.000

Paired Samples Test

	Paired Differences					t	df	Sig.(2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Upper	Lower			
Steam PRE – POST	31.133	10.368	1.893	27.262	35.005	16.447	29	.000

DISCUSSION

The principle point of the investigation was to assess and look at the impact of steam therapy and wax therapy in reduction of pain in knee osteoarthritis intensity and comparison of the above two modalities with respect to the McGill Questionnaire.

We researched the utilization of steam therapy and wax therapy treatment modalities with patients having osteoarthritis of knee. We utilized self-revealed evaluation of McGill pain quessionaire along with SF (to measure wellbeing related nature of life). These strategies have been accounted for to be most acceptable for surveying seriousness of pain.

In our present examination, we found that pain score lessens in wax therapy contrast with steam application. Which recommends the principle utilization of the treatment is to calm rheumatic musculoskeletal pain.[13] Its consequences for neuralgias and skin issues are likewise known for the successful results obtained. Although the primary mechanical activity of the wax therapy is thermal therapeutic, its foundational activity enables it to follow up on sub-atomic and substance forms in degenerative conditions also[14], wax application has a remedial movement because of both mitigating segment and warm effect[15], with frantic application we observed a change in pain and personal satisfaction parameters. For the most part shallow warming treatment including paraffin showers, hot packs, mud application, baleno therapy and mineral water have similar effects. The normal activity system is to expand torment limit by influencing tactile and muscle nerve and muscle nerve endings. Steam therapy to knee is additionally one of the naturopathic treatment methodology utilized for the most part in the clinical practice for the administration of

OAK in the greater part of the naturopathy centers/healing facilities. In spite of the fact that it is as a rule generally utilized by the naturopathic doctors, Even though there are logical confirmations for the utilization of Steam application for OAK but it hasn't proven to that effective as wax therapy in case of pain reduction The investigation could prove the hypothesis that utilization of steam therapy and wax therapy for a fleeting span of 10 days as an adjuvant to naturopathy modality is successful in the treatment of osteoarthritis of knee. Albeit both the treatment modalities are successful however Wax Therapy is more viable. Wax Therapy indicated huge lessening in VAS scale and there was much change found in the standard deviation of Wax Therapy (Group 2) in right augmentation, left expansion, physical working, social prosperity, general physical wellbeing, and personal satisfaction contrast with Steam Therapy (Group 1).

Limitations of the study**:** Smaller Sample size when compared with disease prevalence, both subjective variable which may be biased, reliability and shorter follow-up periods.

CONCLUSION

Wax Therapy and Steam therapy is characteristic, non-intrusive, all natural and longer enduring treatment modalities. Both these treatments showed a significant improvement on scores of both McGill Questionnaire, within the group which recommends that Steam therapy and wax therapy alongside naturopathy interventions can be considered as compelling medications in patients with osteoarthritis of knee. But while coming to the comparison of these modalities patients receiving Wax Therapy showed quick improvement in condition of Osteoarthritis of knee when compared to Steam Therapy.

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