A QUASI EXPERIMENTAL STUDY ON CAMPHOR OIL VERSUS MUSTARD OIL MASSAGE FOR REDUCTION OF KNEE JOINT PAIN AMONG ELDERLY IN SELECTED OLD AGE HOMES AT PUDUCHERRY.

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ABSTRACT

The most common distressing old age problems such as severe knee joint pain and impaired mobility which necessitates the dependence on others. A Quasi experimental study was conducted to compare the effectiveness of camphor oil versus mustard oil massage for reduction of knee joint pain among elderly in selected old age homes at Puducherry. 60 samples were selected, 30 in each group pre test was done with structured questionnaire and assessment of level of knee joint pain using Numerical pain scale (NPS) and WOMAC index. Camphor oil massage

was given for group – A and mustard oil massage was given for group – B for 14 days. Comparison of pretest and post test mean pain score (NPS &WOMAC Index) among elderly with knee joint in group A and group B clearly indicates that there was significant difference in the reduction of level of knee joint pain among elderly between the groups and group B i.e., Mustard Oil Massage found to be more effective in reducing the level of knee joint pain among elderly than the Camphor Oil Massage in group A. This study concludes that mustard oil massage is very effective on reduction of knee joint pain among elderly as when comparing with camphor oil massage. This being a cost-effective procedure and convenient measure and promoting a holistic approach to wellness should be carried out to reduce knee joint pain among elderly.

KEYWORDS: NPS, WOMAC Index, camphor oil, mustard oil, elderly, old age home.

INTRODUCTION

Population ageing is a global phenomenon. The elder persons in the society face a number of problems due to absence of assured and sufficient income to support themselves for their healthcare and other social securities. There are nearly 104 million elderly persons in India. Most common disability among the aged persons was loco motor disability and visual disability. Knee Joint pain limits movement, which leads to deconditioning of joints and muscles which ultimately limits the effective functioning of elderly. The knee joint pain alone causes as much disability in the elderly as any other chronic condition, including diabetes, heart disease and chronic obstructive lung disease. The availability of pain relief options such as non-steroidal anti-inflammatory drugs, assistive devices like braces, splints and surgical management that decreases or alleviates the symptoms associated with the joint pain.

STATEMENT OF THE PROBLEM

A QUASI EXPERIMENTALSTUDY ON CAMPHOR OIL VERSUS MUSTARD OIL MASSAGE FOR REDUCTION OF KNEE JOINT PAIN AMONG ELDERLY IN SELECTED OLD AGE HOMES AT PUDUCHERRY

OBJECTIVES OF THE STUDY

- To assess the existing level of knee joint pain among elderly in Group A and Group B before and after intervention.

- To evaluate the effectiveness of camphor oil massage on reduction of knee joint pain among elderly in Group A

- To evaluate the effectiveness of mustard oil massage on reduction of knee joint pain among elderly in Group B.

- To compare the effectiveness of camphor oil massage versus mustard oil massage on reduction of knee joint pain among elderly in Group A and Group B.

- To find out the association between the effectiveness of camphor oil massage versus mustard oil massage on reduction of knee joint pain among elderly with selected demographic variables.

RESEARCH METHODLOGY

RESEARCH DESIGN

A quasi-experimental design was adopted for the study. (Two group pre test and post test design)

POPULATION AND SAMPLE

The population of the study was elderly people at the age group of 60-75 years with knee joint pain residing in old age homes at Puducherry.

A total of 60 samples was selected by simple random sampling technique and study subject were divided into group – A (n=30) and group – B (n=30).

DATA AND SOURCES OF DATA

After getting the formal permission from the Director of old age home, data collection procedure was started. The period of the study extended for 4 weeks.

THEORETICAL FRAMEWORK

Independent Variable

Independent variable was the factor that was manipulated by the researcher. Independent variables in this study were camphor oil massage for Group A and mustard oil massage for Group B

Dependent Variable

It was the effect of variable observed and measured after some factor manipulated by the investigator. In this study the dependent variable was reduction of knee joint pain.

Demographic variables

It consists of interview schedule to assess the demographic data such as age, gender, marital status, religion, educational status, previous occupational type, monthly income, food habit, personal habits and duration of stay at old age home were the information obtained from elderly person.

Clinical variables

Provides clinical data about the elderly with knee joint pain. It consists of 10 items related to knee joint pain and its associated conditions.

Pre-Test assessment of level of knee joint pain score using **Numerical rating pain scale** and **WOMAC Index** among elderly with knee joint pain in group A and group – B. Application of camphor oil massage for group – A for 14 days and application of mustard oil massage for group – B for 14 days. Post Test assessment of knee joint pain score done using the same Numerical rating pain scale and WOMAC Index among elderly in group A and B after the 14 days intervention. The reliability of the tool was assessed by using Inter-Rater method and the reliability of numerical Pain Scale is: 0.87 whereas Womac Index is: 0.88. No further changes were made in the tool after the pilot study. The tool was found reliable and feasible for the study. The

pilot study was conducted in the old age homes in Puducherry by taking prior permission from the authorities.

STATISTICAL TOOLS:

Descriptive statistics:

Frequency and percentage distribution were used to analyze demographic variables, to assess the degree of knee joint pain for both groups.

Interferential statistics:

1. Mean and standard deviation was used to determine the difference in degree of joint pain
2. Paired 't' test was used to determine the effectiveness of oil massage therapy in terms of pre and posttest score within the group
3. Unpaired 't'test was used to determine the effectiveness of oil massage therapy in terms of pre and posttest score between the groups.
4. Chi-square test was used to associate the post test level of knee joint pain score with selected demographic variables in both groups.

RESULTS AND DISCUSSION

i. FINDINGS RELATED TO DEMOGRAPHIC VARIABLES

➤ With regard to age, the highest number of samples 18 (60%) in Group A, 13(43.33%) in Group B, were in the age group of 64-67 years.

➤ In regard of gender 20(66.67%) in Group A, 23(76.67%) in Group B were female.

➤ Regarding the marital status most of the samples 20(66.67%) in Group A, 17(56.67%) in Group B were widower.

➤ In regard of religion most of the samples 22(73.33%) in Group A, 21(70%) in Group B were Hindus.

➤ Regarding the educational status majority of the samples 17(56.67%) in Group A, 14(46.67%) in Group B were illiterate.

➤ Regarding previous occupation group majority of the samples 14(46.67%) in Group A 16(53.33%) in Group B were moderate worker and 22(73.33%) in Group A,23(76.67%) in Group B had a monthly income of Rs. 2000 – 3000,

➤ Regarding food habit most of the samples 22(73.33%) in Group A, 23(76.67%) in Group B were non-vegetarian and 18(60%) in Group A, 21(70%) in Group B were staying in old age home for more than two years,

➤ In regard of personal habits most of the samples 23(76.67%) in Group A, 25(83.33%) in Group B had no personal habit

ii) FINDINGS RELATED TO HEALTH PROFILE, PHYSICAL FUNCTIONING, STIFFNESS AND PAIN OF ELDERLY WITH KNEE JOINT PAIN

➤ Regarding the idea about joint pain, majority of the samples 25(83.33%) in Group A, 24(80%) in Group B had an idea of reducing the joint pain through treatment and 22(73.33%) in Group A, 19(63.33%) in Group B had been suffering from knee joint pain for 3 months,

➤ Regarding the difficulties caused by knee joint pain, the highest number of samples 12(40%) in Group A, 12(40%) in Group B had the difficulty in physical function, and 11(36.67%) in Group A, 13(43.33%) in Group B were experiencing the knee joint pain frequently.

➤ Regarding the quality of knee joint pain, majority of the samples 12(40%) in Group A, 10(33.33%) in Group B had crushing pain and 18(60%) in Group A, 18(60%) in Group B felt stiffness as other symptom.

➤ Majority of the samples 12(40%) in Group A, 11(36.67%) in Group B were able to perform self-care activity only and most of the samples 16(53.33%) in Group A, 26(86.67%) in Group B had never fell,

➤ Regarding the body mass index, majority of the samples 18(60%) in Group A, 15(50%) in Group B were mild obese (18.5 – 24.9) and 19(63.33%) in Group A and 17(56.67%) in Group B had co-morbid conditions as thyroid disorders.

iii) FINDINGS RELATED TO THE COMPARATIVE EFFECTIVENSS OF CAMPHOR OIL Vs MUSTARD OIL MASSAGE

➤ Assessment of pretest level of knee joint pain (WOMAC Index) among elderly revealed that majority of the samples in group A, 15(50%) and 14(46.67%) in group B had moderate level of pain. In Group A 11 (36.67%) and 13 (43.33%) in group B had severe level of pain and 4 (13.33%) in group A and 3 (10%) in group B had mild level of pain. In posttest, majority 17 (56.67%) in group A and 19(63.33%) in group B had mild level of pain. In Group A 13(43.33 %) and 11(36.67%) in group B had moderate level of pain and none of them were in the severe level of pain.

➤ Assessment of effectiveness of camphor oil massage and mustard oil massage on reduction of knee joint pain (NPS &WOMAC Index) among elderly in group A and group B during pretest and posttest indicate that both camphor oil massage and mustard oil massage were independently effective on reduction of knee joint pain among elderly in group A and group B respectively

➤ Comparison of pretest and post test knee joint pain score (NPS &WOMAC Index) among elderly in group A and group B clearly indicates that there was significant difference in the reduction of level of knee joint pain among elderly between the groups and group B i.e., Mustard Oil Massage found to be more effective in reducing the level of knee joint pain among elderly than the Camphor Oil Massage in group A.

➤ It revealed that the demographic variables like duration of stay at old age home and other symptoms felt in group A and the demographic variables like personal habits and quality of knee joint pain had shown statistically significant association with post test level of knee joint pain among elderly in group B at $p<0.05$, whereas other demographic variables had not shown

statistically significant association with post test level of knee joint pain among elderly in group A and group B.

Comparison of pretest and post test knee joint pain score (Numerical Pain Scale) among elderly in Group A and Group B.

Table 1: Comparison of pretest and post test knee joint pain score (Numerical Pain Scale) among elderly in Group A and Group B.

Pain	Group A (Camphor Oil) n=30			Group B (Mustard Oil) n=30			Unpaired 't' Value
	Mean	Mean difference	S. D	Mean	Mean difference	S. D	
Pretest	5.50		1.69	5.83		1.93	t = -0.710 p = 0.480, N. S
		1.80			**3.63**		
Post Test	3.70		1.56	2.20		1.21	**t = 4.160** **p = 0.000, S*****

The table 1 shows that the pretest mean score of knee joint pain among elderly in Group A was 5.50 ± 1.69 and in Group B was 5.83 ± 1.93. The calculated unpaired 't' value of t = -0.710 was not found to be statistically significant which clearly indicates that there was no significant difference in the level of knee joint pain before intervention among elderly in Group A and Group B.

The table 1 also shows that the post test mean score of knee joint pain among elderly in Group A after the intervention of Camphor Oil Massage was 3.70 ± 1.56 and in Group B after the intervention of Mustard Oil Massage was 2.20 ± 1.21. The calculated unpaired' value of t = 4.160 was found to be statistically significant at p<0.001 level which clearly indicates that there was significant difference in the reduction of level of knee joint pain among elderly between the groups and Group B i.e., Mustard Oil Massage found to be more effective in reducing the level of knee

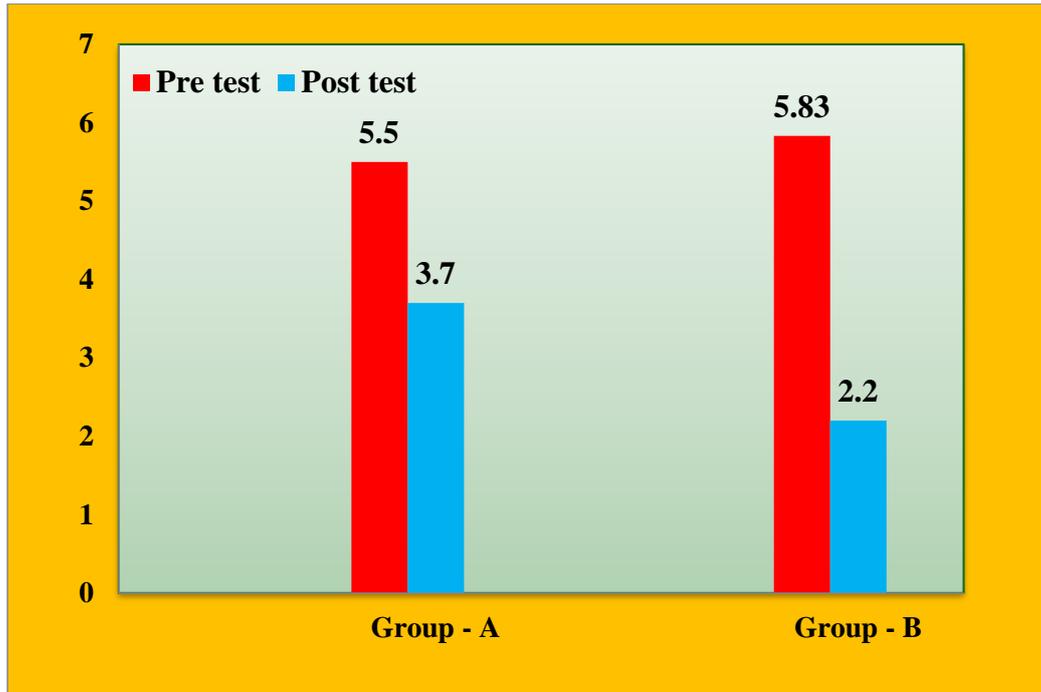joint pain among elderly than the elderly in Group A who were given Camphor Oil Massage.

Figure 1: Description of Comparison of pretest & post test knee joint pain score (NPS) among elderly in Group A &Group B

Comparison of pretest and post test knee joint pain score (WOMAC Index) among elderly in Group A and Group

Table 2: Comparison of pretest and post test knee joint pain score (WOMAC Index) among elderly in Group A and Group

Pain	Group A (Camphor Oil) n=30			Group B (Mustard Oil) n=30			Unpaired 't' Value
	Mean	Mean difference	S.D	Mean	Mean difference	S.D	

Pretest	44.00		12.93	46.00		14.32	t = -0.568 p = 0.572, N.S
		17.60			25.63		
Post Test	26.40		11.26	20.37		6.89	t = 2.504 p = 0.016, S**

The table 2 shows that, the pretest mean score of knee joint pain (WOMAC Index) among elderly in Group A was 44.0 ± 12.93 and in Group B was 46.0 ± 14.32. The calculated unpaired 't' value of t = -0.568 was not found to be statistically significant which clearly indicates that there was no significant difference in the level of knee joint pain before intervention among elderly in Group A and Group B

The table 2 also shows that the post test mean score of knee joint pain (WOMAC Index) among elderly in Group A after the intervention of Camphor Oil Massage was 26.40 ± 11.26 and in Group B after the intervention of Mustard Oil Massage was 20.37 ± 6.89. The calculated unpaired' value of t = 2.504 was found to be statistically significant at p<0.01 level which clearly indicates that there was significant difference in the reduction of level of knee joint pain (WOMAC Index) among elderly between the groups and Group B i.e., Mustard Oil Massage found to be more effective in reducing the level of knee joint pain (WOMAC Index) among elderly than the elderly in Group A who were given Camphor Oil Massage.
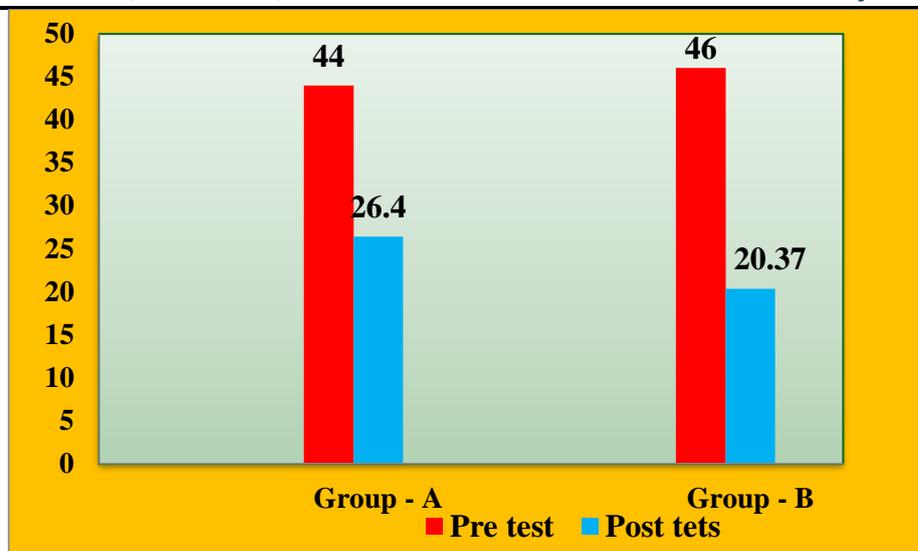
Figure: 2 Description of Comparison of Pre and Posttest Data of Mean Pain Score (WOMAC INDEX) among elderly in Group A and Group B

CONCLUSION

Prevalence of knee joint pain is more common in elderly person. Knee joint pain is an early and warning symptom of osteoarthritis among elderly. Alternative treatment is one of the best methods to treat the knee joint pain as well to overcome the effects of OTC medications.. The samples were divided in two groups, Group A received camphor oil massage and Group B received mustard oil massage. The data revealed that both the oil massages were independently effective among elderly within the groups. The study concludes that mustard oil massage is very effective on reduction of knee joint pain among elderly as when comparing with camphor oil massage. This being a cost-effective procedure and convenient measure.

ACKNOWLEDGEMENT

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