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Review Article

A Study to Assess the Effectiveness of Mustard Plaster on Knee Pain Among Elderly in Selected Old Age Homes, Surat, Gujarat

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ABSTRACT

Quasi Experimental research design was used.60 Elderly were selected by Non-Probability Purposive sampling technique. Modified KOOS pain assessment Scale was used to assess the level of knee pain. The data were analyzed and interpreted in light of objectives and hypotheses. The descriptive and inferential statistics in term of mean, standard deviation, t test and chi square were used for analysis of data. The mean difference in Experimental group was 11.4 and Control group was 0.08. It reveals that mean difference in experimental group significantly higher than control group. In experimental group the calculated paired 't' value of level of knee pain was greater than tabulated value at 0.05 level of significance. In control group the calculated paired 't' value of level of knee pain was lower than tabulated value at 0.05 level of significance. There was significant difference in paired calculated 't' test value in experimental and control group. In comparison of post-test values of level of knee pain between experimental group, calculated 't' value was significantly higher than tabulated 't' value at 0.05 level of significance. Chi square test was used to find out association between Mean post test score and selected demographic variable. The finding reveals that, there was significant association between level of knee pain with Previous occupation. Application of mustard plaster found to be effective intervention in reducing knee pain among Elderly. The findings of the study enlighten the fact that mustard plaster can be used as a cost-effective nursing intervention in reducing level of knee pain.

Keywords: Knee pain; mustard plaster; elderly; non-pharmacological treatment; old age homes; KOOS scale.

INTRODUCTION

Knee pain in the elderly is a significant health concern that affects a large proportion of the aging population [1]. As individuals age, they often experience various forms of pain that can stem from chronic conditions, acute injuries, or the general wear and tear on the body [2]. This pain can significantly impair mobility and overall quality of life, making it essential to understand its causes and implications [3]. Recognizing the complexity of pain in older adults is vital for developing effective management strategies that cater to their unique needs Mustard, particularly in the form of mustard oil or paste, has been used traditionally in various cultures for its potential therapeutic properties [4]. It is believed to contain compounds like allyl isothiocyanate, which may have anti-inflammatory effects. When applied topically, mustard oil can create a warming sensation that may help alleviate stiffness and discomfort in the knees, particularly for those suffering from conditions like arthritis or general wear and tear [5-8]. This warming effect can promote blood circulation in the affected area, potentially aiding in pain relief.

OBJECTIVES OF THE STUDY

- To assess knee pain before application of Mustard Plaster in Experimental group and Control group among elderly in selected old age homes, Surat, Gujarat.
- To assess knee pain after application of mustard plaster in experimental group among elderly in selected old age homes, Surat, Gujarat.
- To evaluate the effectiveness of mustard plaster comparing knee pain in Experimental and Control group among elderly in selected old age homes, Surat, Gujarat.
- To find the association between Mean post-test knee pain of experimental group with their selected demographic variables among elderly in selected old age homes, Surat, Gujarat.

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HYPOTHESES

H1: The mean post-test knee pain among elderly of Experimental group is significantly lower than mean pretest knee pain at 0.05 level.

H2: The mean post-test knee pain among elderly of Experimental group is lower than post-test knee pain of Control group at 0.05 level.

H3: There is significant association between mean post-test knee pain of experimental with their selected demographical variables.

LITERATURE REVIEW

RESEARCH METHODOLOGY

Research Approach: Quantitative Research Approach was used.

Design: Quasi-experimental non-randomized control group design.

Research Variables

Independent variable: Application of mustard plaster

Dependent variable: level of knee pain among elderly.

Setting: Four old age homes in Surat, Gujarat.

Sample: 60 elderly subjects (30 experimental, 30 control).

Sampling Technique: Non-probability Purposive sampling technique was used.

Tool: Modified KOOS Pain Assessment Scale (score range 0–45).

Intervention: Mustard plaster applied to the knee for 30 minutes daily for 30 days.

Mustard plaster: In this study mustard plaster is prepared by grinding 250 gm mustard add needed water to make a paste. Take one table spoon paste and spread it on a clean cloth, fold it in half and press against the skin for 30 minutes to reduce knee pain among elderly.

Application Protocol

The plaster was applied once daily for 30 minutes over a period of 30 days. Post- application, the area was gently cleaned and monitored

Safety Measures

Participants were monitored for redness, irritation, or blistering. If any discomfort was reported, application was discontinued immediately.

Data Analysis: Mean, standard deviation, paired and unpaired t-tests, and chi-square tests.

Inclusion Criteria: Elderly with knee pain who understood Gujarati, aged 60 or above, and available during data collection.

Exclusion Criteria: Elderly with severe knee pain or on other treatments for knee pain.

Study Design Considerations

As the present study utilized a quasi-experimental non-randomized control group design with purposive sampling, certain methodological limitations are acknowledged. The absence of random assignment may lead to selection bias, as participants in the experimental and control groups might differ in ways that could influence outcomes to minimize these limitations, pre-test measurements were conducted for both groups using the same standardized tool (Modified KOOS Pain Assessment Scale, allowing for a within-group comparison of changes post-intervention. Furthermore, the use of statistical methods such as paired and unpaired t-tests helped to objectively assess differences in outcomes between groups.

RESULTS

The findings of the present study revealed that significant percentage of the elderly had moderate pain before the mustard plaster application in the control and experimental group (66.66%, 53.33% respectively. Most of them had mild pain in experimental group after mustard plaster application (63.33%. In the control group there was no significant difference in the knee pain level before (M = 24.27; SD =7.35 & after (M = 25.07; SD = 8.48 In contrast in the experimental group the knee pain levels before (M=28.17; SD=4.92 after the application of mustard plaster knee pain was low, (M=16.77; SD=5.85. There is significant association between previous occupation and post-test knee pain in the experimental group.

DISCUSSION

The study aligns with previous findings indicating the efficacy of mustard plasters in pain reduction. Its warming effect likely enhances circulation and relieves stiffness. It serves as a culturally acceptable, cost-effective intervention with no reported adverse effects.

CONCLUSION

The findings indicated that knee pain is one of the important problems among elderly who are facing all over the world. The mustard plaster application could be useful for the elderly to reduce pain. The excavated results supported that mustard plaster is one of best method to reduce the knee joint pain level among elderly.

RECOMMENDATIONS

The same study could be conducted on a large sample for a longer duration to generalize the results.

The same study could be conducted for age group between 40 -55 years

A Similar study can be conducted to assess with other therapies.

A Similar study can be conducted in urban and rural settings

A Similar study can be conducted in different settings among various population groups.

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