

A Pre-Experimental Study to Evaluate the Effectiveness of Home Based Exercises in Knee Pain and Functional Performance among Elderly of Mothrowala District, Dehradun

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Abstract: Background: Osteoarthritis (OA) is the second most common rheumatologic problem and is most frequent joint disease with prevalence of 22% to 39% in India. This is the most common cause of locomotor disability in the elderly. Objectives: To assess effectiveness of home based exercises in knee pain and functional performance among elderly, aged 60-90 years. Methodology: A pre-experimental study was conducted in Mothrowala district, Dehradun (U.K) sample of 30 elderly were selected using convenient sampling technique. The period of data collection was extended from 17-05-2017 to 16-06-2017. The pretest was conducted on the elderly and exercises were taught to the elderly on the same day. On the twenty eighth day post test was conducted. Result: There is significant difference between the pre and post-test scores of Numeric Pain Rating scale was demonstrated by using "t" test value 8.68 and pre and post-test scores of Modified WOMAC index demonstrated by using "t" test value 19.76. This indicates that home based exercises are effective in decreasing pain and improving functional performance.

Keywords: Effectiveness, Home based exercises, Osteoarthritis, Knee pain, Elderly

1. Introduction

Aging and disease are related in subtle and complex ways. Several conditions that were once thought to be part of normal aging have now been shown to be due to disease process that can be influenced by lifestyle. Osteoarthritis is a common problem of old age people. According to the American survey prior problem of old age people is Osteoarthritis. According to survey in United States (2013-2015) 49.6% of persons ages 65 or older diagnosed with osteoarthritis. As person grows older the cartilage that serves as shock absorber between bones can no longer sustain the rubbery and become stiff. Osteoarthritis (OA) is the second most common problem and is most frequent joint disease with prevalence of 22% to 39% in India

Objectives

- To assess the level of pain and functional performance among elderly of Mothrowala district, Dehradun.
- To evaluate the effectiveness of home based exercises in knee pain and functional performance.
- To find out association between pre-test scores of knee pain and functional performance with their selected demographic variables.

2. Methodology

The nature of study was pre-experimental. The study was conducted in Mothrowala district, Dehradun. The conceptual framework used for this study is based on Imogene King's goal attainment theory developed in the early 1960. The research design used for this study was one group pre-test & post- test research design. Data collected using convenience

sampling. The study was conducted on 30 samples. The research instrument was divided into three parts i.e. part A Socio-demographic data, part B numerical pain rating scale and part C modified womac index. Tool was prepared by extensive review of literature and validated by various experts. Ethical permission was obtained from ethical and research committee of institution. Confidentiality was maintained during and after data collection. Reliability of modified womac index was estimated by split half method was found to be 0.86.

3. Results

Frequency and percentage wise distribution of subjects according to their socio demographic variables revealed that highest percentage of elderly 50% were in the age group of 60-70 years among of which highest percentage of Females 57% and 43% of males. In relation to their Occupation shows that 53% of elderly were retired. Family income shows that the highest percentage 50% of elderly were in the group of 5001-10,000. Educational status was 33% of elderly were having Primary education, Type of family shows that highest percentage of elderly 40% were from separated family, Marital status shows highest percentage that is 53% were married, among them 60% are Vegetarian, duration of pain in knee shows highest 57% of having pain from one year. Source of information shows that highest percentage 67% of elderly was having information from Television.

Effectiveness Of Home Based Exercises (Numeric Pain Rating Scale)

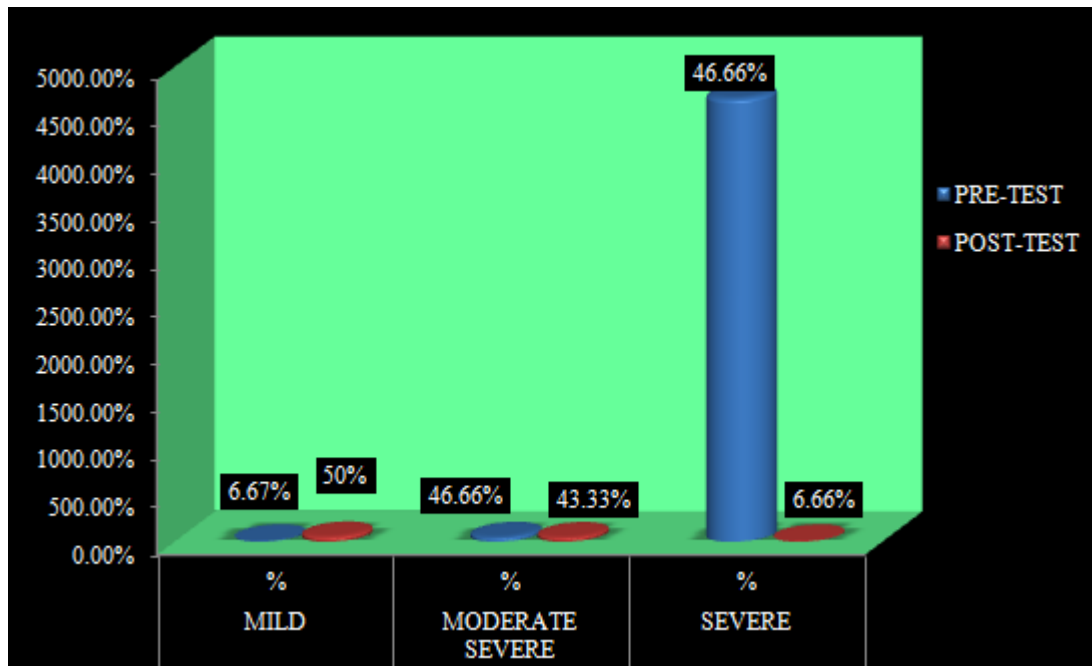


Figure 1: Showing comparison between the pre-test and post-test score to demonstrate the effectiveness of home based exercises by using Numeric Pain Rating scale score

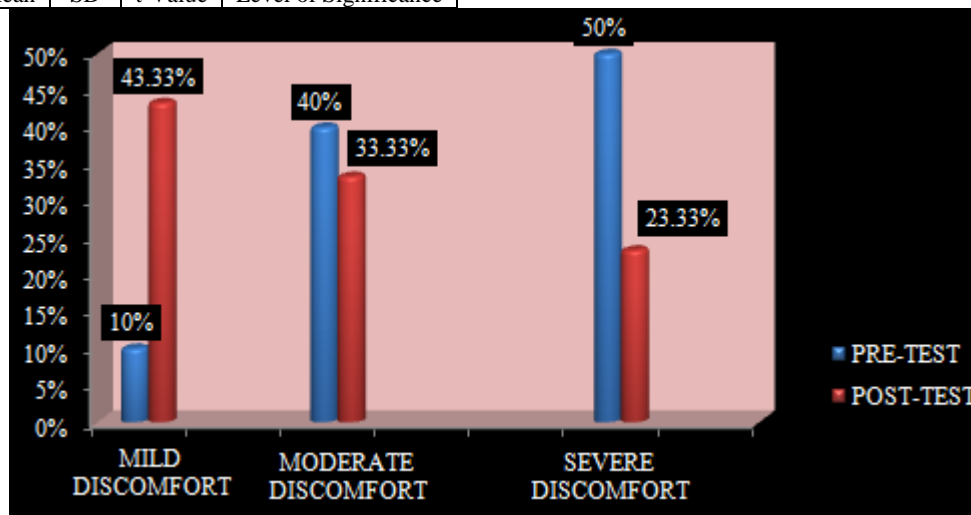
Data presented in Fig. (1) depicted that in Pre-test 46.66% of subjects had severe pain and in post test that was reduced to 6.66%. Moderate pain score in pretest was 46.66% that was reduced to 43.33%. Moderate pain was reduced to mild pain so that mild pain score was increased in post-test. Mild pain score in pre-test was 6.67% and in post-test was 50%.

Pre-Test	6.1	3.13	8.68	Highly Significant
Post-Test	3.9	1.88		

Table 1: Mean, Standard Deviation and “t” value between the pre-test and post-test Numeric Pain Rating scale score assessment, N=30

Pain Score	Mean	SD	t-Value	Level of Significance
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Data show in Table (3) revealed that the mean post-test pain score of Elderly was significantly lower than the mean pre-test scores. The calculated “t” value (8.68) was more than the table value at 0.05 level of significance. Therefore, it can be said that the home based exercises was found to be effective in reducing pain and improving functional performance



Effectiveness Of Home Based Exercises (Modified WOMAC INDEX)

Data presented in Fig. (15) Depicted that in Pre-test 50% of subjects had severe discomfort and in post test that was reduced to 23.33%. Moderate discomfort score in pretest was 40% that was reduced to 33.33%. Moderate discomfort was reduced to mild discomfort so that mild discomfort score was increased in post-test. Mild discomfort score in pre-test was 10% and in post-test was 43.33%.

Table 5: Mean, Standard Deviation and “t” value between the pre-test and post-test modified WOMAC index score assessment, N=30

Pain Score	Mean	SD	t-Value	Level of Significance
Pre-Test	68.8	15.67	19.76	Highly Significant
Post-Test	46.56	14.39		

“t” (0.05) = 2.05
p < 0.05

Data show in Table (5) revealed that the mean post-test modified WOMAC index score of Elderly was significantly lower than the mean pre-test scores. The calculated “t” value (19.76) was more than the table value at 0.05 level of significance. Therefore, it can be said that the home based exercises was found to be effective in reducing pain and improving functional performance.

Hence In this the hypothesis (H1) is accepted.

Association between pre-test scores of knee pain and functional performance with their selected demographic variables

There was not significant association between pretest pain scale score and selected demographic variables Age, Sex, Educational status, Type of family, Marital status, food habits, source of information and there is significant association between demographic variables Occupation, Family income, Duration of pain at 0.05 level of significance. Hence the research hypothesis (H2) accepted

There was not significant association between pretest modified WOMAC index score and selected demographic variables Age, Sex, Occupation, Family Income, Educational status, Marital status, Duration of pain, Source of information and there is significant association with selected demographic variables Type of family and Food habits. Hence the research hypothesis (H2) was accepted.

4. Conclusion

Study revealed that average pain as per Numeric Pain scale before home based exercises was 6.1 which was reduced to 3.9 in post-test. Average modified WOMAC index score before home based exercises was 68.8 reduced to 46.56 in post-test. This indicates that home based exercises are effective in decreasing pain and improving functional performance.

5. Future Scope

Nursing Service:

Nursing plays a vital role in improving the nursing care, imparting knowledge and reducing the knee pain among the elderly and increase the functional performance by the help of home based exercises that is Isometric, Isokinetic, and Isotonic.

Nursing Education:

Nursing education emphasizes that health care system should pay more attention on training the elderly so that they themselves will gain knowledge about the benefits of home based exercises

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