Volume : 4 | Issue : 5 | May 2015 • ISSN No 2277 - 8179

A Study to Assess the Effectiveness of Range of Motion Exercise on Limitation in Activities of Daily Living Among People Suffering From Arthritis in Selected Areas of Pune City.

Nursing

KEYWORDS :

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ABSTRACT

Background of the study is Arthritis is the leading cause of disability worldwide. The incidence increases as age increases. Worldwide osteo-arthritis is the most common articular disease of people 65 years and older. In India 5.3% of males and 4.8% of females are aged more than 65 years. Objectives of the study are to assess the limitation in Activities of Daily Living (ADL) in the experimental group and control group before giving Range Of Motion (ROM) exercise. 2. To assess the limitation in Activities of Daily Living (ADL) in the experimental group and control group after giving the Range Of Motion (ROM) exercise. 3. To compare the limitation in Activities of Daily Living (ADL) in the experimental group and control group after giving the Range Of Motion (ROM) exercise. Methodology experimental research design was used. 60 samples was selected and data was collected pre and post exercise using Semi structured self-administered questionnaire. Conclusion Range of Motion is one simple exercise that if performed regularly can help patients improve their functional status.

INTRODUCTION

"The least movement is of importance to all nature. The entire ocean is affected by a pebble." (Blaise Pascal)[19]

"Motion is life" (Hippocrates)2 and life is motion. Health and exercise are the two sides of the same coin, absolutely inseparable from each other. Arthritis is a progressive degenerative disease of the joint that usually affects the older population1. There has been a remarkable increase in the growth of the elderly population. In India 5.3% of males and 4.8% of females are aged more than 65 years. The commonest obstacle for elderly to carry out ADL is the problem of joint-pain and decreased mobility. Worldwide osteo-arthritis is the most common articular disease of people 65 years and older2,3.It is widely agreed that arthritis is an important contributor to disability in elderly people. Evidence for this comes from cross-sectional studies that demonstrate that elderly people with arthritis are much more likely to have limitations in mobility and ADLs. The prevalence of osteo-arthritis amongst elderly in rural areas of Wardha (Maharastra) was 17%6. Low physical activity is an important and reversible characteristic of arthritis. There is strong evidence that physical activity reduces pain, improves function and mood, and delays disability in adults with arthritis. Despite these known benefits of physical activity for managing arthritis, the majority (30%–50%) of adults with arthritis are physically inactive7. Scientific studies have shown that participation in moderate-intensity, low-impact physical activity improves pain, function, mood, and quality of life without worsening symptoms or disease severity. Being physically active can also delay the onset of disability for those with arthritis8.

Statement of the problem

A study to assess the effectiveness of Range Of Motion exercise on limitation in Activities of Daily Living among people suffering from arthritis in selected areas of Pune city.

Objectives

1. To assess the limitation in Activities of Daily living in the experimental group and control group before giving Range Of Motion exercise.
2. To assess the limitation in Activities of Daily Living in the experimental group and control group after giving the Range Of Motion exercise.
3. To compare the limitation in Activities of Daily Living in the experimental group and control group after giving the Range Of Motion exercise.
4. To find an association between limitation in Activities of Daily Living and selected demographic variables.

Hypothesis

H0: There will be no significant improvement in the Activities of Daily Living after giving Range Of Motion exercise.

H1: there will be significant improvement in the Activities of Daily Living after giving Range Of Motion exercise.

Research methodology

Quantitative research approach using quasi experimental- non randomized control group design was adopted for the study. The sample was selected by non-probability convenience sampling technique. 60 samples were selected, of which 30 were assigned to experimental and 30 to control group. The criteria considered for selecting the samples were, those who 1) are >18 years of age, 2) have functional deficit or impairment due to arthritis, 3) can understand English or Marathi or Hindi, 3) are willing to participate in the study. The exclusion criteria was as follows, those who, 1) are <18 years of age, 2) are pregnant, 3) have undergone orthopedic related surgery in the past, 4) cannot understand English or Marathi or Hindi, 5) are not willing to participate in the study. The study was conducted in selected areas of Pune city. The data was collected using self-administered semi structured questionnaire which was divided into two sections, demographic variables and modified Health Assessment Questionnaire Indian Version. The content validity of the tool was done by experts and reliability was checked by test retest method and was found to be 0.98. pilot study was done on 10 samples, 5 experimental and 5 control group.

ANALYSIS AND INTERPRETATION

- In experimental group, maximum (40%) of the samples were from the age group 61-70 years. In control group, maximum of the samples were from the age group of 51-60 (33.3%) and 61-70 years (33.3%).
- In both the experimental group and control group, maximum samples (63.3% and 63.3% respectively) were female.
- In the experimental group, 53.3% did not report of any comorbidity. Of those who had comorbidity, maximum (20%) had hypertension. In the control group, 46.7% did not report of the presence of any comorbidity. Of those who had comorbidity, maximum (40%) had hypertension.
- In pretest, both in experimental and control group, majority (63.3%) of the people suffering from arthritis had moderate limitation in Activity of Daily Living.
- In posttest, in experimental group, the number of people having severe limitations reduced from 36% to 22%. In control group, the number of people having severe limitations in-

creased from 20% to 26%.

- Average change in the score from pretest to posttest for experimental group was 5.1 which was -0.3 for control group.
- Medications used and Co morbidity are the demographic variables which were found to have significant association with daily living activities among people suffering from arthritis.

Result according to the study objectives:

1. To assess the limitation in Activities of Daily living in the experimental group and control group before giving Range Of Motion exercise.

Fig 1**.** Limitation in activity of daily living in the experimental group and control group before giving range of motion exercise

2. To assess the limitation in Activities of Daily Living in the experimental group and control group after giving the Range Of Motion exercise.

Fig 2. Limitation in Activities of Daily Living in the experimental group and control group after giving the Range Of Motion exercise.

3. To compare the limitation in Activities of Daily Living in the experimental group and control group after giving the Range Of Motion exercise.

Two sample t-test was applied for comparison of change in activity scores in experimental and control group. Average change in the score from pretest to posttest for experimental group was 5.1 which was -0.3 for control group. T-value for this comparison was 10.2 at 58 degrees of freedom. Corresponding p-value was small (less than 0.05). The change in experimental group daily activity score is significantly higher than that for control group.

Group	Mean	SD	t	Df	p-value
Exp	5.1	1.7	10.2	58	0.000
Control	-0.3	2.3			

4. To find an association between limitation in Activities of Daily Living and selected demographic variables.

This assessment was done using Fisher's exact test. p-values corresponding to medications used and comorbidity are small (less than 0.05). Medications used and Co morbidity are the only two demographic variables which were found to have significant association with daily living activities among people suffering from arthritis.

Discussion

This study was carried out to test the hypothesis that Range Of Motion exercise will significantly reduce the limitation in Activity of Daily Living among people suffering from arthritis. The findings lead to the acceptance of the hypothesis where patients in the experimental group demonstrated significant reduction in the limitation in Activity of Daily Living. Previous research supported the evidence of simple home exercise on reducing pain and disability from osteoarthritis. Physical function scores reduced by 17.4% in the exercise group and were unchanged in controls16. Additionally, in a study conducted by Sofia Brorsson, Marita Hilliges, Christer Sollerman, and Anna Nilsdotter showed significant improvement in hand force and hand function after a six-week hand exercise program in patients with rheumatoid arthritis17.A population-based intervention was successfully implemented in a short time period in a study from Canada (Richardson, 2012). The present study result showed that 63% of both the experimental and control group had minor limitation in Activity of Daily Living. A recently published cross-sectional, observational community based study conducted in a rural area of West Bengal, (India) through house to house visit among 495 study population, concludes that 16.16 per cent elderly were functionally disabled as per ADL scale and more than half of them had 3 or more chronic conditions of which osteoarthritis was found to be strongly associated with disability (chakraboty etal,2010)18.

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