

# Effectiveness of Muscle Strengthening Exercises Among Old Age People with Osteoarthritis in Selected Old Age Homes in Kanpur

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**Abstract:** This paper presents an overview on effectiveness of muscle strengthening exercises among old age people with osteoarthritis in selected old age homes in Kanpur.

**Keywords:** Osteoarthritis

## 1. Introduction

Osteoarthritis (OA) is a classic age-related disorder. It is often described as a chronic degenerative disease and thought by many to be an inevitable consequence of growing old. In OA, degradation and loss of the articular cartilage is a central feature that is sometimes attributed to "wear and tear". However, unlike an automobile tire that wears thin over time, the tissues affected by OA contain living cells that respond to mechanical stimulation and function to maintain joint homeostasis. Rather than OA being a simple consequence of joint aging and repeated "wear and tear", the current conceptual framework for the relationship between aging and OA is that aging of the musculoskeletal system increases the susceptibility to OA but alone does not cause it. Changes outside the joint (including sarcopenia and reduced proprioception) and within the joint (including cell and matrix changes in joint tissues) contribute to the development of OA, when other OA risk factors are also present. The concept that aging contributes to, but does not directly cause OA, is consistent with the multifactorial nature of OA and the knowledge that not all older adults develop OA and not all joints in the body are affected to the same degree. In this review, we will discuss the relationship between aging and the development of OA from both an epidemiological perspective and from a biological perspective with the goal of answering the question of why OA is an age-related disease.

## 2. Methodology

The focus of the study was to assess the effectiveness of muscle strengthening exercises on joint pain and physical function among old age people with osteoarthritis in selected old age homes in Kanpur. The design used for this study was

pre Experimental one group pre test post test in design. The conceptual frame work was based on modified Wiedenbeck's helping art of clinical nursing theory. 50 participants were selected by purposive sampling technique and were assessed for level of joint pain and physical function before and after muscle strengthening exercises.

## 3. Data collection and Analysis

The data was collected to assess the level of joint pain and physical function by using numerical pain intensity scale, modified WOMAC Osteoarthritis index scale Day 1, sample was diagnosed by physician. Day 1 and Day 2 pre test was done for 50 samples. 25 samples in each day. The researcher was spending 5-10 minutes for each sample to conduct the pretest. After collecting the demographic variables, numerical pain intensity scale was used to assess the joint pain and WOMAC osteoarthritis scale was used to assess the physical function among old age people with osteoarthritis.

The samples were divided into 3 groups with 17 members in group 1 and 2, and 16 Members in group 3. The researcher demonstrated and assisted in doing the muscle strengthening 87 exercises for all 3 groups separately. It was continued for 30 days daily morning and evening. Morning session was between 10.00 am to 12.00pm and in evening session was between 3.30 pm- 5.30 pm. Post test was conducted for 2 days, 25 members in each day. Level of joint pain and physical function were assessed by using same scale. The data were analyzed by using descriptive and inferential statistics

## 4. Major findings of the study

- Majority 15 (30%) were in the age group 69- 72 years and 73- 75 years.
- Majority 31 (62%) were females.
- Majority 32 (64%) were Hindus  $\frac{3}{4}$  Majority 28 (56%) were widowed.
- Majority 25(50%) had primary education  $\frac{3}{4}$  Majority 37 (74%) were staying for 1-5 years  $\frac{3}{4}$  Majority of them 15 (30%) had no children.

- Majority 24 (48%) of them were suffering with osteoarthritis for 3-4 years
- In pre test, 42 (84%) had severe joint pain and 8 (16%) had moderate joint pain where as in the post test 32(64%) had mild pain and 18 (36%) had moderate joint pain.
- In pre test, 38(76%) had mildly improved physical function,12(24%) had moderately improved physical function where as in post test 42 (84%) old age people with osteoarthritis had moderately improved physical function and 8(16%) old age people with osteoarthritis had highly improved physical function
- Mean pre test score and post test score of joint pain among old age people with osteoarthritis were 7.78 (SD + 1.17) and 3.3 (SD+ 1.129) respectively. The 't' value was 36.721 which was significant at < 0.05 level  
¾Mean pre test score and post test score of physical function among old age people with osteoarthritis were 25.1 (SD+ 2.332) and 38.86 (SD+ 9.038) respectively. The 't' value was 11.6324 which was significant at < 0.05 level

There is no Significant association between post test level of joint pain among old age people with osteoarthritis with their selected demographic variables ¾Significant association were found between post test level of physical function and duration of illness ( $2\chi=16.992$ ) among old age people with osteoarthritis  
The study findings revealed that the post test joint pain score

was significantly reduced after practicing muscle strengthening exercises. Findings showed that practicing muscle strengthening exercises such as isometric, isotonic and isokinetic exercises played an important role in reducing joint pain and improve the physical function among old age people with osteoarthritis

### 5. Conclusion

The present study was done to evaluate the effectiveness of muscle strengthening exercises on joint pain and physical function among old age people with osteoarthritis. The result showed that, the mean post test scores of joint pain 3.3 (SD + 1.129) which was significantly lower than the mean pretest scores 7.78(SD + 1.17). The mean post test scores of physical function 38.86 (SD + 9.038) which was significantly higher than the mean pretest scores 25.1 (SD+ 2.332). The 't' value of joint pain score was 36.721 and physical function score was 11.632 which were significant at < 0.05 level. Therefore, practicing muscle strengthening exercises will reduce joint pain and improve physical function among old age people with osteoarthritis. which is non expensive.

### References

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