Review Article

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The Effectiveness of Isometric Exercises on Level of Pain among OA Patients

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Abstract

The Study was conducted using Quasi Experimental pre-test and post-test Control Group research design, among 60 patients (30 control group and 30 experimental group) from Osteoarthritis samples were selected using purposive sampling technique. Data was collected using demographic variables, Modified Lequence Observational checklist and numerical pain intensity rating scale was used to measure the pain level. Study findings reveals that post-test level of pain among experimental group it was found that the mean value was 3.2 and the standard deviation was 2.35, whereas in control group mean value is 5.93 and standard deviation was 2.63 and the't' value was 7.01, it shows that there is significant reduction in post-test level of pain in experimental group than post-test level of pain in control group at $p<0.05$ level. It indicated that isometric exercises were effective in reducing the pain among osteoarthritis patients.

Keywords: Osteoarthritis; Isometric Exercises; Pain; Modified Lequence Observational Checklist.

INTRODUCTION

Osteoarthritis (OA) is the most common form of joint disease, with a prevalence of 22% to 39% in India. It is a slowly progressing non-inflammatory disorder of the synovial joints that affects the joint cartilage and joint capsule. It causes pain, loss of function and disability affecting Quality of life.[1] Women are more likely than men to have OA, although as people get older, their frequency rises significantly.[2] Nearly 45% of women over the age of 65 have symptoms, while 70% of those over 65 have radiological evidence. OA of the knee, especially in women, is a significant factor in reduced mobility.[5] According to estimates, OA is the tenth most common reason for non fatal burden. The corner stones of managing OA are exercise and, if necessary, weight loss. The only equipment needed for isometric exercises is a comfortable area to perform them in a short amount of time.[3,4] JAMA. 2021;325(6):568-578.

The isometric exercises for osteoarthritis of the knee are made to increase thigh muscle strength without requiring a lot of movement near the knee

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joint. The main goal of the management strategy for knee osteoarthritis is the reduction of pain and disability. A non-pharmacological treatment for osteoarthritis pain is an isometric exercise.[5,6] The straight forward verbal explanation recommended to breathe deeply and relax while the muscle was contracting. Isometric exercise was performed twice daily for a total of 30 minutes over the course of seven days.[7] Physiowarzish 2021.

Statement of the Problem

A study to assess the effectiveness of isometric exercises on pain level among patients with osteoarthritis in selected village at Virudhunagar.

The main objectives of the study was to compare the impact of isometric exercise on level of pain among osteoarthritis patients in experimental group and control group.

H_1: Compared to the mean post-test level of pain in the control group, the mean post-test level of pain among osteoarthritis patients in the experimental group will be significantly lower.

H_2: The pre-test level of pain in patients with osteoarthritis in the experimental and control groups will significantly correlate with their chosen demographic characteristics. Age, sex, BMI, marital status, education, occupation, dietary habits, length of sickness, and length of treatment are all factors.

RESEARCH METHODOLOGY

Study was conducted using Quasi Experimental pre and post-test Control Group research design, among 60 patients (30 control group and 30 experimental group) in Osteoarthritis clients with mild to moderate stage samples were selected using Purposive sampling technique. Data was collected using Data collection procedure, Demographic variables, Modified Lequence observational checklist and Numerical Pain Intensity Rating scale.

Setting of the Study

The setting of the study refers to the area, where the study was conducted. The study was conducted in two villages in Virudhunagar. In that Zamin kollankondan was selected for experimental group and Avarampatti was selected for control group. This arrangement helped the investigator to carryout the intervention for the experimental group and also reduced the interruption from the control group.

RESULTS AND DISCUSSION

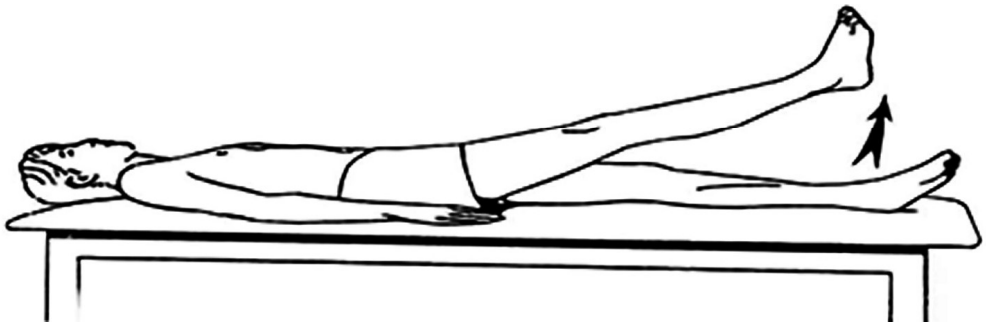
The pre-test mean was 6.17, the standard deviation was 2.07, and the mean difference was 2.97. The post-test mean value was 3.2, the standard deviation was 2.35, and the mean difference was found to be 2.97. The t value was 7.77, indicating that the table value is significantly higher than the calculated value. At a 0.05 level, it was discovered that the experimental group's post-test pain levels were significantly lower than their pre-test pain levels.

It was discovered that the mean value for the post-test level of pain in the experimental group is 3.2 and the standard deviation is 2.35, while the mean value for the post-test level of pain in the control group is 5.93 and the standard deviation is 2.63, and the 't' value was 7.01. This indicates that there is a significantly lower post-test level of pain in the experimental group than post-test level of pain in the control group at the p0.05 level.

Description of Intervention

Suggested that the patient sit or lie down with one straight leg.

- Tell them to push the rear of the knee flat against the floor or bed by tensing the muscles in front of the leg as much as possible.
- Raise the heel or leg 4 to 6 inches off the floor or bed five seconds later.
- Return the heel or leg to the ground. As you lower your leg, keep the muscle in front of



your thigh as taut as you can, and then let it go.
- Perform the workout ten times, twice daily.

High Sitting Position

- Tell the patients to sit on the edge of the bed with their legs hanging.
- Tell them to straighten their legs' knees, draw their toes up, and contract their thigh muscles.
- Return to the starting position after lifting each straightened leg individually to hip level.
- Follow the workout by repeating it twice daily, five times on each leg.

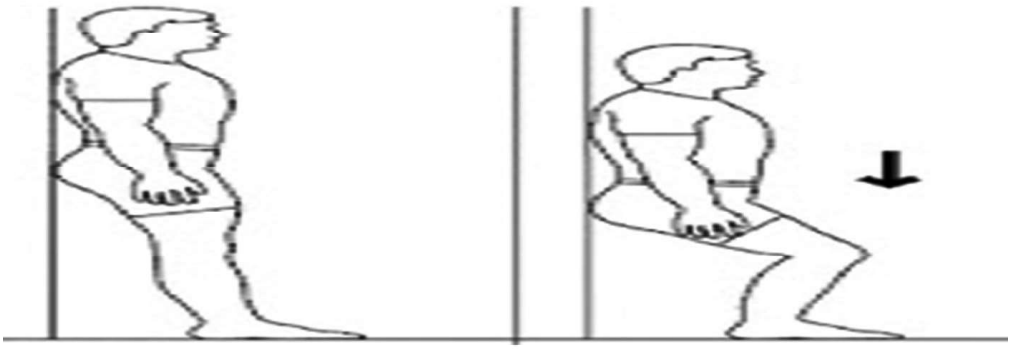
II. Step-up and Step Down Exercisre

Stay on the step's edge.

- Position the foot on the about 7 inch high step. If necessary, hold on to a wall, chair, or other object for support.
- Step up and down gradually. Make sure your hips are level and that your kneecap is walways in line with your second toe.
- Return to the starting posture by gently touching the heel of the opposing leg on the floor.
- Ten times each, twice daily, repeat the activity.

III. Wall Slide Exercise:

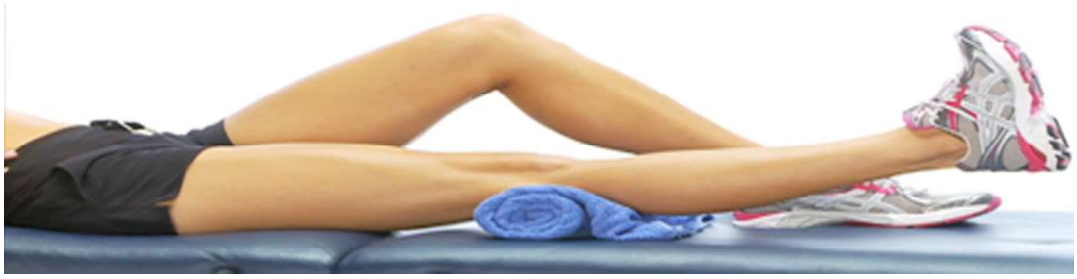
- Stand with your back to the wall. The distance between the feet and the wall should be between 18 and 24 inches.
- Knee cap alignment refers to where it meets the second toe/shoes.
- Gently descend the wall while bending your knees 75 to 90 degrees.



- Keep this posture for five seconds. Get up and take a five second break.
- Perform the workout twice daily, 10 times total.

IV. Hip Adduction Exercise

- Tell the patient to sit or lie flat with their legs straight.
- Put an inch long roll under the knee to enable bending.
- Lift the heel off the ground by tightening the muscle in front of the knee as much as you can.
- Remain in this position for ten seconds.
- Perform the workout ten times, twice daily.



CONCLUSION

Overall study findings proved that, rendering Isometric exercises to the osteoarthritis patient was effectiveness in reduction of knee pain. Therefore the investigator felt that the importance of isometric exercise for osteoarthritis patient used to reduce the level of pain.

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