

41 EFFECTS OF OBESITY ON QUADRICEPS DYNAMIC STRENGTHENING AND ISOMETRICS EXERCISE FOR THE TREATMENT OF KNEE OSTEOARTHRITIS PATIENTS

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Knee osteoarthritis (KOA) is a major cause of pain and functional impairment among elders. Currently, there are neither feasible preventive intervention strategies nor effective medical remedies for the management of KOA. Of course, KOA is only one of many adverse consequences of obesity. Physical rehabilitation usually quadriceps exercises for the maintenance of joint range of motion and muscle strength is effective for the treatment of KOA. The aim of the study was to find out whether obesity has an adverse effect on the treatment of knee osteoarthritic patients when quadriceps dynamic strengthening and isometrics exercise were implemented. Sixty osteoarthritic knee patients with 30 patients each in two groups were randomly selected from Kailash Hospital and Obesity Clinics in Delhi. Patients were randomly divided into two groups (A and B) according to their BMI. In group A, non-obese KOA patients were assigned, and in group B, obese KOA patients were included. The quadriceps dynamic strengthening and isometrics exercise treatment protocol were introduced in both the groups and were given for 15 days. Pre- and post-treatment knee pain, range of motion of knee joint and quadriceps muscle strength were measured. Student t test was applied to find out the statistical level of significance. Pain was decreased with the intervention exercise, which was highly significant ($p < 0.05$) in both the groups. The ranges of motion for knee joint were increased, which was found highly significant in both the cases of flexion and extension ($p < 0.001$, < 0.05 , respectively) in group A but in group B, it was found significant for flexion ($p < 0.001$) but in case of extension ROM, it was insignificant ($p > 0.05$). The mean difference of pre-test and post-test muscle strength for flexor and extensors was significant ($p < 0.01$, < 0.001) in group A but in group B, for flexors, it was insignificant, and for the extensor group, it was significant ($p < 0.01$). It was found that the exercises given to group A

(non-obese) were more effective than those given to group B (obese). Pain, ROM and MMT were improved significantly in group A but in group B, pain had reduced but MMT and ROM had no significant improvements. We concluded that because of more BMI in group B (obese group), effects of exercise for treatment of OA knee was not as significant as in case of group A subjects (non-obese group).