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## Effect of three different physical therapy approaches on function and disability of the knee joint in patients with knee osteoarthritis: A randomized study

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Background: Knee osteoarthritis (OA) commonly causes a reduction in the patients' disability and function because it causes pain, limitation in knee range of motion and decrease in muscle power. Aim: This study investigated the effect of three physical therapy approaches on knee range of motion, pain level, muscle strength and functional condition in patients with knee osteoarthritis. Method: It was a randomized comparative study. Outpatient rehabilitation medicine clinic of Tongji Hospital (Wuhan, China) with 72 patients of Knee OA (aged 40-70) enrolled and randomly allocated into three groups. Group A (n=24) received physical agents and isometric quadriceps exercises, group B (n=24) received same physical agents as group A in addition to open kinetic chain exercises and group C (n=24) received physical agents as group A in addition to closed kinetic chain exercises. Knee range of motion (by electro goniometer), knee pain level (by VAS), quadriceps muscle strength (by isokinetic dynamometer) and functional condition (by WOMAC) were assessed before and after 5 weeks of treatment. Result: In between group analysis, there were significant differences (P<0.05) between the three groups for all outcome measures. Within-group analysis, group C was the only group that showed significant differences (P<0.05) in all the outcomes. Group A and B showed significant differences (P<0.05) in quadriceps muscle strength and knee pain and no significant differences (P>0.05) in knee ROM and functional condition. Conclusion: This study concluded that closed kinematic chain exercises is the most physical therapy approach significantly improves knee ROM, knee pain, muscle strength, function and disability for patients with knee osteoarthritis. Clinical rehabilitation impact: Comparison between different physical therapy approaches provides the rehabilitation team with the best treatment intervention that is more effective in treating the problems associated with knee osteoarthritis.

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