

Kritsadee Suriyo, Lieutenant 2010: Effect of Aquatic Exercise upon Range of Motion in Female Patients with Total Knee Replacement during Early Phase. Master of Science (Sports Science), Major Field: Sports Science, Interdisciplinary Graduate Program.
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The purposes of this research were to study and compare the percent change of range of motion between the aquatic exercise and land-base exercise in female patients with total knee replacement during early phase. The subjects comprised 20 volunteers, aged 51-75 year old from patients with Total Knee Replacement of Somdejprapinklao Hospital. They were assigned onto two groups of 10 in each group: group 1 had the aquatic exercise and following with continuous passive movement (CPM), and group 2 had the CPM and following with land-base exercise. The subjects were measured the range of knee flexion, the knee circumference, the level of pain, timed 8-foot-up-and-go-test before and after performed the exercises on the second, third, fourth, and the fifth day of surgery at 7.00 AM everyday and measured before and after the aquatic exercise and CPM immediately. Data were analyzed by using percent change, two-way ANOVA and immediately with a significant level of .05

In comparison to the group1 and group2 were no significantly differences ($p \leq .05$) after exercise. However, there were significantly differences ($p \leq .05$) of the range of knee flexion, the knee circumference, the level of pain, and timed 8-foot-up-and-go-test in both groups between before and after performed the exercises on the second, third, fourth, and the fifth day of surgery. In comparison to the response aquatic exercise and CPM resulted in significantly difference ($p \leq .05$) in the percent change of the range of knee flexion on the third and the fourth day of surgery, the percent change of circumference the fifth day of surgery and the percent change of pain on the third day of surgery.

In conclusion, these investigations show that two rehabilitation exercise programs can increase the range of motion knee, reduce the size of circumference knee, and relieve the level of painful feeling. The response of aquatic exercise (active exercise) can increase the range of knee flexion, reduce the knee circumference, and reduce the level of pain better than CPM. The results of this studying may be applied to exercise programs for increasing range of motion knee in female patients with Total Knee Replacement during early phase.

Student's signature

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