

## ABSTRACT

### MUSCLE STRENGTH, REACTION TIME AND EXPLOSION POWER OF LEG MUSCLE BETWEEN PLYOMETRIC EXERCISE OF SQUAT JUMP AND SCISSOR JUMP IN SEPAKTAKRAW PLAYER

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This research aimed to proof that plyometric exercise of Squat Jump, Scissor Jump and the mixed of Squat Jump-Scissor Jump can increase the strength, explosion power of leg muscle and decrease the reaction time on sepaktakraw player. This research design was "Pretest-posttest control group design". Sample in this research used 27 college students of Sport Science Department of FIK Makassar State University of 2006-2007 registration year. They were male, 21 years old. The sample was divided to 3 groups with lottery technique. Each group has 9 members of students with the division were plyometric exercise group of Squat Jump, Scissor Jump and mixed of Squat Jump-Scissor Jump.

Data analyzes was processed with descriptive statistic test, normality test, homogeneity test, anova test with same subject and LSD, anakova test, anava test.

The research analysis were as follows: muscle strength on Pretest K1 with  $P=0.986$ , K2 with  $P=0.987$ , K3 with  $P=0.970$ . Reaction time on pre test K1 with  $P=0.988$ , K2 with  $P=0.956$ , K3 with  $P=0.933$ . Explosion power on pretest K1 with  $P=0.404$ , K2 with  $P=0.400$ , K3 with  $P=0.923$ . The muscle strength variable on post test 1 of K1 with  $P=0.962$ , K2 with  $P=0.964$ , K3 with  $P=0.984$ . Reaction time on post test 1 of K1 with  $P=0.998$ , K2 with  $P=0.916$ , K3 with  $P=0.795$ . Explosion power on post test 1 of K1 with  $P=0.212$ , K2 with  $P=0.400$ , K3 with  $P=0.828$ . Muscle strength variable on post test 2 of K1 with  $P=0.953$ , K2 with  $P=0.986$ . Reaction time on post test 2 of K1 with  $P=0.987$ , K2 with  $P=0.875$ , K3 with  $P=0.832$ . Explosion Power on post test 2 of K1 with  $P=0.487$ , K2 with  $P=0.538$ , K3 with  $P=0.923$ .

The conclusion of this research was (1) plyometric exercise of Squat Jump can increase the muscle strength, explosion power of leg muscle and decrease the reaction time on sepaktakraw player (2) plyometric exercise of Scissor Jump can increase the muscle strength, explosion power of leg muscle and decrease the reaction time on sepaktakraw player (3) mixed plyometric exercise of Squat Jump and Scissor Jump more increase the muscle strength, explosion power of leg muscle and decrease the reaction time than just plyometric exercise of Squat Jump or Scissor Jump on sepaktakraw player.

**Keywords:** Plyometric, muscle strength, reaction time, explosion power, squat jump, scissor jump, mixed of squat jump-scissor jump.