

ABSTRACT

Objective: To analyzed correlation of Quadriceps muscles and Hamstring muscles strenght with the pain and radiologic grading of knee osteoarthritis on geriatric female

Design: analytic observasional ,cross sectional

Setting: Physical Medicine and Rehabilitation Laboratory.

Participants: Thirty eight geriatric female (mean age $67,18 \pm 4,91$) **Interventions:** All subject are being assessed for pain scale using the numeric rating scale. After that, all subject conduct 1RM protocol using EN-Tree to measure the quadriceps and hamstring muscles strength. The knee X-ray on the antero-posterior and lateral view are performed to determine the osteoarthritis grade.

Main Outcome Measures: Numeric rating scale (NRS), 1RM of the quadriceps muscles and hamstring (kg), and the radiologic grading for knee osteoarthritis.

Results: The mean of NRS is $3,68 \pm 1,19$, 1RM quadriceps muscles is $2,68 \pm 1,23$, 1RM hamstring muscles is $1,11 \pm 0,44$, ratio of the quadrisep/hamstring (Q/H) is $2,53 \pm 0,95$. Thirty Participants are grade 2 of radiologic finding, and 8 participants are grade 3.

Conclusions: The 1RM of the quadriceps and hamstring muscles has no correlation with the NRS. The 1RM of the quadriceps and hamstring muscles on the radiologic grade 2 and radiologic grade 3 participants are no different. There is positive correlation between Q/H ratio with the NRS. The Q/H ratio on the radiologic grade 2 and radiologic grade 3 participants are different.

Keywords: NRS, 1RM of the Quadriceps and Hamstring, Q/H ratio, radiologic grade