ISSN 0972-0073

THE ANTHROPOLOGIST

International Journal of Contemporary and Applied Studies of Man

Anthropologist 30(2): 161-166 (2017)
DOI: 10.31901/24566802.2017/30.02.11

Isokinetic Strength of Knee Extensors is Associated with Balance in Middle-aged Women

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KEYWORDS Fall Risk. Quadriceps. Muscke Strength. Peak Torque. Postural Stability

ABSTRACT The aim of this paper was to identify the relationship between the strength of the knee extensors and postural stability in middle-aged population. The study involved forty women (age 56.3±4.7 years; weight 77.2±18.3 kg; height 164.3±5.6 cm). Relative concentric extension peak torque (ConEPTR) and average work (ConEAW) were expressed to assess bilateral strength of the knee extensors. Balance was evaluated during a 30s quiet stand with open eyes. Mean velocity of the centre of pressure (COP) in the medial-lateral direction and anterior-posterior direction was measured. Mean velocity of COP in the medio-lateral direction significantly (p<.05) correlated with ConEAW; mean velocity of COP in the anterior-posterior direction significantly (p<.05) correlated with ConEPTR. The findings suggested that the strength of the lower limb muscles in middle-aged women contributed to a better balance and consequently to a decreased fall risk later in life.