

ABSTRACT

Title:

Relationship between hip muscles and dynamics front kick while using ballistic vest and backpack.

Objective:

Determine the rate of the relationship among isokinetic strength of hip muscles during flexion and extension movement, external and internal rotation and the dynamics of the front kick while using the military personal protective equipment.

The method:

The master thesis corresponds with an empirically based study of observational type. The measured research sample consisted of students ($n = 15$) of Military Department attending full-time and combined form of study at the Faculty of Physical Education and Sport of Charles University in Prague. Dynamics of front kick were measured by dynamometric Kistler plates and evaluated through computer software BioWare. Isokinetic strength of hip muscles during flexion and extension movement, external and internal rotation was tested and rated by isokinetic dynamometer Humac Norm. The flexibility of selected muscles group was measured by a specialist in physiotherapist area. The Spearman rank correlation coefficient of the order (r_s) was chosen for the final evaluation of the rate of relationship.

The results:

The strongest correlation relationship was between the external hip rotation muscles (at speed 90°s^{-1}) and the impact force on the respondents while using military personal protective equipment ($r_s = 0,66$). For that correlation were able to demonstrate a significant correlation significant at $p \leq 0,01$ level.

Keywords:

Close combat, military, personal protective equipment, biomechanics