TACSM Abstract

Leg Dominance and Its Affect on Variables Related to Leap Performance

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ABSTRACT

INTRODUCTION: To achieve the desired aesthetics of leaping in dance it is necessary that these movements are performed equally well from either leg. However, these leaps may naturally be better performed from the dominant leg than the non-dominant leg. A lack of relevant experimental evidence precludes an assessment of this idea. PURPOSE: To determine whether a dancer executes a leap from her dominant leg better than from her non-dominant leg. METHODS: Ten experienced college aged dancers, (20 ± 1.0 yr, 62.3 ± 8.3 kg, 1.67 ± 0.1 m), performed six trials of a stationary leap off of a force plate. Limb dominance in each participant was determined. Trials were filmed using a digital camera operating at 60 Hz. The right and left hip, knee, and ankle were digitized to determine knee angle. Maximum knee flexion in the plié, prior to take-off, was identified. Vertical velocity of the center of mass was computed using the force-time record. Mean differences in maximum knee flexion and take-off velocity between dominant and non-dominant leg jumps were evaluated using paired t-tests. An alpha level of 0.05 was used to assess significance. RESULTS: Maximum knee flexion was not significantly different between the dominant (73.2 ± 5.4 degrees) and non-dominant (73.2 ± 5.4 degrees) leg jumps, respectively ($t(10) = .002$, $p=.999$). Furthermore, take-off velocity for the dominant (2.25 ± 0.30 m/s) and non-dominant (2.09 ± 0.29 m/s) leg jumps was not significantly different ($t(10) = 1.295$, $p=.228$). CONCLUSION: This suggests that experienced dancers have acquired the ability to perform leaps equally well of off both legs.