Abstract

The purpose of this study was to describe the degree of bilateral asymmetry of lower limbs‘ muscle activity in the dance movement Cha-cha-cha and to determine the cause of bilateral asymmetries of lower limbs‘ muscle activity. Differences in muscle activity of contralateral lower limbs might be caused by the factor of bilaterally asymmetrical movement patterns, the factor of neural pathways or the factor of training. We hypotetize that comparing the direction of bilateral asymmetry in muscle activity between asymmetrical dance movement and its mirror alternative can determine the cause of bilateral asymmetry in muscle activity of lower limbs within the movement. We studied 14 volunteers (7 men, 7 women), all were actively dancing at competitive level. We tested the muscle activity of *musculus vastus lateralis* (VL), *musculus biceps femoris* (BF), *musculus tibialis anterior* (TA) *a musculus gastrocnemius lateralis* (GL) using surface electromyography. The dance movement Cha-cha-cha was bilaterally asymmetrical in the muscle activity of VL, TA and GL. Direction of lower limbs‘ muscle activity indicates, that TA, being a muscle responsible for foot movement, might be affected by the factor of neural pathways and brain laterality, while VL and GL might be more affected by the factor of training.

Key words: Bilateral asymmetry, movement pattern, muscle activity, lower limbs, surface electromyography, competitive dancing, gait