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Moataz M El Semary et al., J Nov Physiother 2018, Volume 8
DOI: 10.4172/2165-7025-C1-023

5th International Conference and Expo on

Novel Physiotherapies

March 19-20, 2018 | Berlin, Germany

Biomechanical analysis of sit-to-walk movement in parkinson's patients

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Aim: The aim of this study was to evaluate the ankle-knee-hip interaction during sit-to-walk (STW) movement and clinical functional abilities of the lower limbs in Parkinson's patients.

Methods: Twenty male patients, ages ranged from 55 to 70 years, stage II and III according to modified Hoehn and Yahr classification of disabilities and ten male healthy elderly subjects, ages ranged from 55 to 70 years, participated in this study. All subjects were assessed for clinical functional abilities of the lower limbs, ground reaction force (GRF) and spatiotemporal data and range of motion (ROM) of hip, knee and ankle joints during STW movement.

Results: The results showed very significant differences in the GRF among the normal subjects and Parkinson's patients during STW movement. There were significant differences in hip, knee and ankle joints ROM during STW. There were significant differences in spatiotemporal findings during STW movement. The Parkinson's disease patients did not merge the two tasks of STW while the elderly subjects merged it. There was impairment in clinical functional abilities of the lower limbs in Parkinson's patients.

Conclusion: A continuum of STW performance and clinical functional abilities whereby the healthy elderly people performed the task more efficiently than Parkinson's patients.

Biography

Moataz M El Semary has completed his PhD from Cairo University. Currently, he is working as Lecturer of Physical Therapy for Neuromuscular Disorder and its Surgery, Faculty of Physical Therapy, Cairo University.

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