TACSM Abstract

Effect of Sleep Disturbances on Gait Performance among College Students: a Piot Study

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ABSTRACT

Sleep disturbances from stress are common among college students and may provoke cognitive and brain changes associated with gait abnormalities. **PURPOSE**: to examine the association between stress, sleep disturbances and gait performance among college students . **METHODS**: College students were asked to perform gait analysis with an in-shoe pressure measurement system (F-Scan, Tekscan, South Boston, MA) before and after the midterm exam. Cadence, step time, stride time, stance time and swing time were measured for both dominant and non-dominant foot. Meanwhile, 14-days consecutive wrist actigraphy data and three sets of questionnaires were collected to access their stress, sleep and fatigue. **RESULTS**: A total of 14 (5 males and 9 females, age: 24.43 ± 3.98 years old) college students participated this study. Significant differences of step time (0.62 ± 0.13 seconds vs. 0.75 ± 0.26 seconds, $p=0.04$) on the non-dominant foot were observed before and after the midterm exam. During the exam week, stress level was positively associated with sleep disturbances. Moderate stress and about 2-3 nights of sleep disturbances were reported during the exam week. **CONCLUSION**: Gait abnormalities (e.g., step time) were observed for college students when sleep disturbances were reported along with elevated stress.