Departments of Physical and Occupational Therapy present

Rehabilitation Science Dissertation Defense

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Rehabilitation Science
Final Dissertation Defense

Factors Influencing Balance and Muscle Tone in Adults with Attention-Deficit/Hyperactivity Disorder

Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental condition prevalent in children globally and continues to persist into adulthood. Executive function (EF) impairments are core ADHD deficits, specifically response inhibition, and believed to drive ADHD symptoms. Psychostimulant medications (PS) is the first line treatment to manage ADHD symptoms. Overall, individuals with ADHD are at greater risk of falls and physical injuries compared to healthy individuals. Perhaps adults with ADHD balance impairments are secondary to ankle plantarflexor (PF) spasticity. Using psychostimulant medications (PS) improves PF spasticity and postural control in children with ADHD, but the effects on adults with ADHD are unclear. Furthermore, moderate-to-vigorous physical activity (MVPA) has also been found associated with static balance in healthy adults. We designed a within-subject repeated measure study to assess PS effects on static balance and muscle tone and to identify if MVPA and response inhibition are associated with static balance in adults with ADHD. The findings of this dissertation are intended to guide future research concerning the improvement of balance in adults with ADHD. Study 1 documented that using PS medication was associated with improved static balance and functional motor performance compared to off medication state in adults with ADHD. Study 2 determined that adults with ADHD exhibited a slight increased PF spasticity (measured by the Modified Ashworth Scale). In addition, this study demonstrated that using PS was associated with reduced the reflex mediated component spasticity (measured by a dynamometer) only among adults with the predominantly Inattentive subtype of ADHD. Study 3 identified significant associations between MVPA and response inhibition with static balance during off medication state only. In summary, this dissertation demonstrates the effects of using PS on static balance and PF spasticity, and associations between MVPA and EF with static balance performance in adults with ADHD during off and on medication status. The findings of this research project may guide clinicians and researchers who work with this population to attend to PS use and develop interventional programs that aim to improve static balance.

UAB SCHOOL OF HEALTH PROFESSIONS
The University of Alabama at Birmingham

EVENT DETAILS

Free to UAB students, faculty and clinicians.

DATE/TIME

Wednesday, July 6, 2022

2pm - 3pm

LOCATION

SHPB ELC 640 and https://uab.zoom.us/j/85053497509

CONTACT

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For more information about the Rehabilitation Science Program please checkout our website: http://www.uab.edu/shp/home/graduate/doctoral/phd-rehabilitation-science