UNIVERSITY OF HARTFORD

DEPARTMENT OF REHABILITATION SCIENCES

DOCTORATE OF PHYSICAL THERAPY PROGRAM
DOCTORAL RESEARCH FINAL PRESENTATIONS
November 6, 2020
12:00-2:00pm
Virtual Zoom Meeting

12:05-12:20 Athlete Testing: Evaluating Mechanics of Vertical Jump Height

Students: Chris Chambers, Kristina Forsman, Heather Hassett, Kiera Klaum, Lauren Randall, McKenzie Reimondo

Mentor: Kristamarie Pratt, PhD, MEng

Vertical jumping is a major part of volleyball therefore improving vertical jump would improve performance. The goal of this project was to utilize force plate technology to understand the mechanics of vertical jumping and identify key parameters that predict vertical jump height.

12:20-12:35 Developing a Toolkit for Implementation of Segmental Assessment and Intervention (SASI)

Students: Alex Backus, Jason Bracich, James Harkin, Jason Hubeny, Jamie Kane

Mentor: Danielle Bellows, PT, MHS, DHSc, PCS

Segmental assessment and intervention can be beneficial to children with moderate to severe cerebral palsy. The purpose of this study was to identify and address factors that influence implementation of a segmental approach to trunk control in outpatient pediatric physical therapy. In collaboration with Nationwide Children's Hospital, we used qualitative methods and implementation frameworks to develop a clinical toolkit to help clinicians and caregivers adopt this innovative treatment method.

12:35- 12:50 Monitoring Movement Patterns in Children with Neuromotor Disabilities

Students: Linda Tran, SPT, MS

Mentors: Sandra Saavedra MS, PT, PhD; Kristamarie Pratt, PhD, MEng; Patricia Mellodge, PhD

Technological advances, such as wearable sensors have been incorporated to advance one's medical care in individuals who are healthy or have a mild disability. The goal of this project was to determine if wearable sensors can be used to monitor movement patterns in children with moderate-severe neuromotor disabilities such as cerebral palsy and if the information obtained correlates with information recorded on video.

12:55-1:10 Mobility Score Versus Tinetti in Community Dwelling Older Adults

Students: Keyonni Adams, Sabrina Baxter, Victoria Bergenty, Melissa da Silva, Emily McWhirt,

Mentors: Catherine Certo PT, ScD and Walt Gorack, MSPT, DPT, GCS

Assessing balance and fall risk of community-dwelling older adults is important secondary to falls being the leading cause of fatal injury and non-fatal trauma related hospital admissions. The purpose of our study is to assess balance and fall risk by using four outcome measures: M-score, Tinetti (POMA), self-reported health questionnaire and the Mini Mental State Exam and testing the validity of the M-score through comparison to the Tinetti (POMA). Our goal is to continue to establish the validity of the M-score for assessing fall risk in older adults and to assess the influence of cognition, comorbidities, polypharmacy and frailty on falls for community-based older adults.

1:10-1:25 A Comparison of the Effects of Cervical and Thoracic Manipulation, Glenohumeral Mobilization, and Sleeper Stretch on Shoulder Strength and Range of Motion in Healthy Individuals

Students: Nicole Bozzini, Garrett Brown, Joseph Colello, Laura Cuevas, Jazzare Mays, Jeremy Mitchell, Elizabeth Newkirk

Mentor: Brian Swanson PT, DSc, OCS, FAAOMPT

Various interventions have been proposed to improve ROM and strength of the shoulder. However, the mechanisms by which these interventions lead to improved ROM or strength are not yet well understood. This study sought to assess the influence of shoulder mobilizations, sleeper stretching, thoracic manipulation, and cervical manipulation on shoulder IR ROM, measures of posterior shoulder capsule mobility, external rotator strength, and external rotator EMG activity.

1:25- 1:40 Unraveling Posture Control in Children with Severe Cerebral Palsy

Students: Ashley Acosta, Peter Inserillo, Kayla Olson, Jherson Terrones, Brianna Testa

Mentors: Sandra Saavedra MS, PT, PhD; Adam Goodworth MS, PhD

Postural control is an activity that most of us take for granted, however it is a daily challenge for non-ambulatory children with cerebral palsy (CP). There is a paucity of research and intervention for these children. The goal of this project is to understand the neural mechanism of postural control in non-ambulatory children with CP in hopes of creating better interventions in the future.

1:40-1:55 Developing a Balance Training Program for Individuals of Differing Abilities Fall 2019-Fall 2020

Students: Michael Barry, Courtney Brennan, Kristina Fusco, Kelly Rohan, Jacob Smith, Amanda Zdun

Mentor: Mary Gannotti, PT, PhD;

Feedforward balance training has potential to improve anticipatory balance in individuals with neurologic disabilities. In this project, we designed an experiment to evaluate the ability to train anticipatory balance with an easy, low cost exercise. We have established the protocol and begun data collection. Currently, a video is under production for distribution through Oakhill Adaptive Sports for consumer education.