

augmented feedback without a VR interface, (2) with a basic VR interface and (3) with a VR exergame.

**Main Outcome Measures:** 30-seconds fast walking speed was measured on a robotic treadmill (KineAssist-MX®). Intrinsic motivation was measured after each walking condition using the Intrinsic Motivation Inventory (IMI).

**Results:** In this preliminary analysis (n=4 participants; age range: 35-70 years;) participants had baseline fast walking speeds between 0.50-1.48 m/s. The change in walking speeds, with and without performance feedback, were as follows: 0.19-0.49 m/s for augmented feedback, 0.22-0.45 m/s for basic VR, and 0.16-0.42 m/s for VR exergame. IMI-Interest and Enjoyment Subscale scores ranged from: 5.9-6.9 after augmented feedback, 5.4-6.9 after basic VR, and 6.4-6.7 after VR exergame.

**Conclusions:** This preliminary report suggests that individuals' post-stroke can walk faster when they are provided with performance feedback compared to their fast walking speed without receiving any performance feedback. In terms of intrinsic motivation, no trend was observed across participants nor conditions indicating that intrinsic motivation is about the same level when walking with different types of augmented feedback.

**Author(s) Disclosures:** David Brown declares the following financial interests and personal relationships which may be considered as potential competing interests: He is a named inventor on the intellectual property associated with the KineAssist and does receive a share of royalties for any sales of this robotic treadmill. Saleh Alhirsan and Carmen Capo-Lugo do not have any conflicts of interests to declare.

**Keywords:** Stroke, Augmented Feedback, Virtual Reality, Walking Speed, Intrinsic Motivation

#### Late Breaking Research Poster 1828769

##### Heterotopic Ossification in Post-COVID-19 Patient on Anticoagulation with Limited Treatment Options

**Natalie Van Ochten (University of Minnesota Medical School), Akhil Shori, Joseph Benert, Matthew Puderbaugh, Murali Krishnamurthy**

**Research Objectives:** To investigate treatment options for heterotopic ossification in the setting of COVID-19 and anticoagulation use.

**Design:** Case report. Patient followed through the entirety of inpatient acute rehabilitation. Used chart review to examine events during his intubation before coming to rehab.

**Setting:** University affiliated Acute Rehabilitation Unit.

**Participants:** Case report: 59-year-old male with a past medical history of diabetes, hypertension, and pulmonary embolism on anticoagulation who developed heterotopic ossification (HO) after a prolonged hospitalization secondary to COVID-19.

He presented to the ED with dyspnea and was noted to have bilateral pleural effusion and +SARS-CoV-2. He was admitted for COVID-19 treatment and was subsequently intubated. While intubated, he received Physical Therapy (PT) and was noted to have progressive hip pain by day 23 that interfered with PT. A CT of his abdomen and pelvis was done on day 30 of his intubation without any significant bony abnormalities. He was subsequently extubated after 43 days, stabilized, and admitted to acute rehabilitation for ICU associated weakness 15 days later. He continued to have worsening hip pain. Bilateral hip radiographs and follow up CT hips were obtained on rehabilitation day 35 (day 103 of overall hospitalization), which demonstrated Booker Grade 3 HO on the right and Booker Grade 2 on the left.

**Interventions:** A multidisciplinary approach to treatment was sought using consultants from Orthopedics, Endocrinology, Radiation Oncology, Pharmacy, and PT. Due to his anticoagulation and high risk factors, non-steroidal anti-inflammatory drugs were not recommended. Radiation therapy and bisphosphonates were also not recommended. His pain was controlled with acetaminophen as needed and tizanidine which allowed him to participate in therapies during his rehabilitation admission.

**Main Outcome Measures:** Radiologic images and clinical description or pain/pain control.

**Results:** Utilized a multidisciplinary approach. Care included NSAID avoidance, acetaminophen as needed, tizanidine, and PT which provided pain control without compromising coagulation status in the setting of COVID-19.

**Conclusions:** HO is a known complication in COVID-19 patients requiring extended intubation which presents unique treatment challenges related to this diagnosis.

**Author(s) Disclosures:** No disclosures.

**Keywords:** Heterotopic Ossification, COVID-19, Anticoagulation, Pain Management

#### Late Breaking Research Poster 1831994

##### Upper-Limb Rehabilitation Robot: A Measure of Intent Detection for Robot Aided Active Therapy Exercise

**Md Rasedul Islam (University of Wisconsin-Green Bay), Md Assad-Uz-Zaman, Inga Wang, Mohammad Rahman**

**Research Objectives:** In robot-aided rehabilitation of post-stroke patients with upper limb impairment, robotic device must allow patient's effort in performing exercises. To estimate such effort, user's force exerted on robotic device can be used during active exercises. To validate use of force exerted by user/wearer by comparing with EMG signals as a measure of intent detection in robot-aided active therapy on rehabilitation robot, in this research, user's interactive force with robot was measured and compared with user's muscle activity (EMG) during elbow flexion-extension performed by an upper-limb rehabilitation robot (u-Rob). This physiological measure will help design rehab robot centering patient's need and level of impairment. Furthermore, it can give an indication of spastic behavior during rehab exercises.

**Design:** Experimental study of robot-aided therapy to observe force values with EMG values, leading to use force as a measure of intent detection.

**Setting:** Protocol: Elbow flexion/extension (0-120 deg) motion. Experiments (passive and active therapy exercise, five trials/exercise) were conducted with healthy subject in seated position wearing the robot.

**Participants:** 2 healthy males and 1 healthy female.

**Interventions:** Elbow flexion/extension (0-120 deg) motion. Experiments (passive and active therapy exercise, five trials) were conducted subject in seated position wearing the robot.

**Main Outcome Measures:** Force exerted by the participant and participant's EMG

**Results:** Significant amount of force is exerted during active exercise and significant amount of EMG activity is observed during active exercise. Besides, looking at the torque, it is seen that during active rehab exercise, robot has to contribute lesser torque than in passive exercise.

**Conclusions:** User-robot interactive forces detected by sensor can be used as a measure of intent detection during robot-aided active exercise.

Moreover, measured forces can also be observed from muscle activity. It may give an idea of subject's spastic behavior.

**Author(s) Disclosures:** N/A.

**Keywords:** User Force, EMG, Intent Detection, Robot-Aided Rehabilitation, Active Therapy

#### Late Breaking Research Poster 1831999

##### Interprofessional Research Project Participation During Clinical Training: Understanding Student Experiences

**Elena Donoso Brown (Duquesne University), Sarah Wallace, Molly McHugh, Jessica Riley**

**Research Objectives:** To understand the experiences of persons who participated in interprofessional research projects during clinical training.

**Design:** This qualitative descriptive study utilized a single 60 to 90-minute semi-structured interview.

**Setting:** The study took place in a virtual environment, using video conferencing software.