

$p < 0.001$ ], and 3-days after [ $r = 0.416$ ,  $p = 0.005$ ], ( $r = 0.557$ ,  $p < 0.001$ )] isometric and concentric exercise respectively.

**Conclusions:** Elevated levels of kinesiophobia in patients with fibromyalgia has immediate consequences of higher pain and perceived exertion during exercise and long-term ramifications on body composition. Further interdisciplinary research is needed to investigate treatment strategies that lower kinesiophobia when prescribing exercise in patients with fibromyalgia.

**Author Disclosure(s):** None.

**Key Words:** Fibromyalgia, Exercise, Pain, Physical Exertion, Avoidance Behavior

#### Late Breaking Research Poster 1143059

##### Rasch Analysis of the Activities-Specific Balance Confidence Scale in Individuals Post-Stroke



**Bryant Seamon (Medical University of South Carolina), Steven Kautz, Craig Velozo**

**Objective:** To examine the psychometric properties of the Activities-specific Balance Confidence (ABC) scale using Rasch analysis for individuals post-stroke.

**Design:** Retrospective cohort.

**Setting:** Data was extracted from the Locomotor Experience Applied Post-Stroke (LEAPS) phase three, multisite, randomized controlled clinical trial.

**Participants (or Animals, Specimens, Cadavers):** Participants ( $n = 406$ ) were included if they were enrolled in the LEAPS trial and ABC scale data was available from their baseline assessment (2-months post-stroke).

**Interventions:** Not applicable.

**Main Outcome Measure(s):** We examined unidimensionality, rating-scale structure, item and person fit, person-item match, and separation index of the ABC scale with Rasch analysis.

**Results:** The ABC scale was sufficiently unidimensional. A collapsed 5-category rating-scale was superior to the 101-category scale. The hardest item was "walking outside on an icy sidewalk" and the easiest item was "getting into or out of a car". No items misfit the model. The ABC scale had high person reliability (0.94), despite 10.5% of individuals misfitting the expected response pattern based on ability level. The mean ability level of the sample was slightly lower (-0.56 logits) than the mean item difficulty indicating that the ABC scale adequately matched our sample's balance confidence. The ABC scale did not have a floor or ceiling effect and was able to separate individuals into 5 statistically distinct strata (separation index = 3.71).

**Conclusions:** The Rasch model strongly supports the use of the ABC scale to measure balance confidence in individuals' post-stroke. The consistency of our results with previous Rasch analyses on the ABC scale demonstrate the instrument responds similarly across multiple populations; community-dwelling older-adults, outpatient orthopaedic physical therapy, stroke, Parkinson's disease, and lower limb amputation. Recommendations include collapsing the rating scale and developing a computerized adaptive test version of the scale to enhance clinical utility.

**Author Disclosure(s):** None.

**Key Words:** Stroke, Psychometrics, Outcome Assessment, Postural Balance

#### Late Breaking Research Poster 1143137

WITHDRAWN

#### Late Breaking Research Poster 1143121

##### Recovery of Communication in Patients With Disorders of Consciousness Following Severe Brain Injury



**Geraldine Martens (University of Liege), Yelena Bodien, Amber Thomas, Joseph Giacino**

**Objective:** Identify the time-course for recovery of communication in patients with disorders of consciousness (DoC).

**Design:** Retrospective database study.

**Setting:** Specialized inpatient rehabilitation DoC program.

**Participants (or Animals, Specimens, Cadavers):** Adults, at least 16 years old, who 1) sustained an acquired brain injury, 2) were admitted to inpatient rehabilitation without evidence of communication based on Coma Recovery Scale-Revised (CRS-R) criteria, 3) had at least three valid CRS-R assessments within a two-week period and 4) recovered functional communication or were discharged within eight weeks of admission.

**Interventions:** Not applicable.

**Main Outcome Measure(s):** Proportion of patients recovering intentional or functional communication (IC, FC); days from injury to IC or FC.

**Results:** One hundred seven-five patients (median [IQR]: 48 [27 – 61] years old, 105 males, 100 TBI, 28 [21 – 38] days post-injury on admission) met inclusion criteria. Fifty-four (31%) did not regain communication within eight weeks of admission to rehabilitation. Seventy-two (41%) transitioned to IC (within 37 [32 – 47.25] days of injury) and then progressed to FC (50 [42 – 61] days). Nineteen (11%) transitioned directly to FC (39 [31.5 – 60] days). Thirty (17%) transitioned to IC (52 [38.25 – 67] days) but failed to recover FC. Patients who did not recover communication were admitted to rehabilitation later than those who recovered FC (Wilcoxon-Mann-Whitney,  $p < 0.01$ ). Recovery of IC occurred earlier in patients who later recovered FC compared to those who did not recover FC (Wilcoxon,  $p < 0.01$ ).

**Conclusions:** Most patients (i.e. approximately 50%) recover FC within two months of admission to inpatient rehabilitation. FC is typically preceded by recovery of IC and the transition from IC to FC occurs over approximately two weeks. Clinicians should consider the time-course of recovery of communication during prognostic counseling.

**Author Disclosure(s):** None.

**Key Words:** Consciousness, Communication, Brain Injury, Recovery Of Function, Outcome

#### Late Breaking Research Poster 1143909

##### Relationship Between Neurobehavioral Symptoms and Social Communication in Adults With Mild Traumatic Brain Injury



**Kendall Adair (University of Texas Health Science Center at San Antonio, Department of Communication Sciences and Disorders), Diana Hoang, Amber Arredondo, Timothy Reistetter, Rocio Norman**

**Objective:** 1) To determine whether adults with high levels of neurobehavioral (NB) symptoms significantly differ on perceived social communication skills compared to adults with low levels of NB symptoms. 2) To determine whether NB symptoms such as sleep quality are predictive of social communication performance in adults with mTBI.

**Design:** Exploratory, prospective experimental design.

**Setting:** Academic medical center.

**Participants (or Animals, Specimens, Cadavers):** Seventeen community-dwelling adults with mTBI were stratified into two groups, low NB symptoms ( $n = 5$ ; Females = 3) and high NB symptoms ( $n = 12$ ; Females = 8). Mean age for participants with low NB = 31 years and for high NB = 27 years.

**Interventions:** N/A.

**Main Outcome Measure(s):** Neurobehavioral Symptom Inventory (NSI), LaTrobe Communication Questionnaire (LCQ), and Pittsburgh Sleep Quality Index (PSQI).

**Results:** Independent sample t-tests were conducted to compare the groups on LCQ total scores. Participants with high NB symptoms reported significantly more problems with communication ( $M = 63$ ,  $SD = 11$ ) than participants with low NB symptoms ( $M = 51$ ,  $SD = 3$ ),  $t(15) = -2.259$ ,  $P = 0.39$ . Results of regression analysis indicated that sleep quality predicted LCQ scores in both the high NB group ( $R^2 = .89$ ,  $F(1,11) = 90.90$ ,  $P = 0.00$ ) and in the low NB group ( $R^2 = 0.83$ ,  $F(1,4) = 19.879$ ,  $P = .011$ ).

**Conclusions:** Participants with high NB symptoms reported more social communication problems than participants with low NB symptoms. Results suggested sleep quality is a reliable predictor of social communication problems for both groups. Clinicians treating individuals with mTBI should screen and monitor NB symptoms. Future research should include larger studies using a non-injured comparison group to determine whether reduction of NB symptoms is a viable treatment target for rehabilitation of communication problems.

**Author Disclosure(s):** The authors report no conflicts of interest.

**Key Words:** Traumatic Brain Injury, Concussion, Language, Communication, Speech

#### Late Breaking Research Poster 1143169

##### Relationship Between Perception And Real-use Of The Upper Limb In Individuals With Stroke



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**Objective:** To determine the influence of movement performance on self-perception real- upper-limb (UL) use after stroke.

**Design:** Cohort study.

**Setting:** Rehabilitation referral center in São Paulo, Brazil.

**Participants (or Animals, Specimens, Cadavers):** Adults (n=110; 51 women; 54 ± 13 yr) with chronic stroke (onset > 6 months), showing mild to moderate UL motor impairment.

**Interventions:** Not applicable.

**Main Outcome Measure(s):** Primary outcome was the individual's perception of UL functional performance measured by the Motor Activity Log (MAL - How often and How well did you use the affected UL). UL movement performance (activity) was assessed by Wolf Motor Function Test (WMFT-15 items). Linear regressions estimated the degree to which WMFT items explain the overall MAL score. Sensitivity analysis was performed on the non-dominant affected side.

**Results:** The model showed that only item 12 of the WMFT (i.e., flip cards) predicted ( $p < 0.0001$ ;  $B = -0.381$ ; CI 95%: -0.017 to -0.006) the MAL total score. For every second decreased in item 12, there was an increase of 0.4 unit in the total score of MAL. For individuals which the affected side was the non-dominant (n=52), item 7 (i.e., reach and retrieve) was a predictor ( $p < 0.0001$ ;  $B = -0.470$ ; CI 95%: -0.160 to -0.049) of MAL total score.

**Conclusions:** The relationship between real-world arm use and movement performance of the affected UL in post-stroke individuals is weak. Only the performance of a complex and difficult task involving the whole UL and fine movements i.e., flip cards, predicted individual's perception, regardless of UL dominance. These results suggest that assessing individual's performance on a complex task should be used in clinical settings as a proxy of self-perception.

**Author Disclosure(s):** The authors disclosure no conflict of interest.

**Key Words:** Stroke, Upper Limb, Learned Nonuse, Constraint Induced Movement Therapy

#### Late Breaking Research Poster 1143060

##### Remediation With Students in Professional-Track Health Science Programs



**Yvonne Jackson (Western Michigan University)**

**Objective:** To investigate the most effective procedures in developing a remediation plan for students in health science programs.

**Design:** The qualitative case study design included interviews, classroom lab observations, and the use of deidentified program documents.

**Setting:** This study took place at a Career College Located in the Midwest of the United States.

**Participants (or Animals, Specimens, Cadavers):** The sample of 11 participants included 4 program directors, 3 fieldwork coordinators, and 4 adjunct faculty members. This study included the current faculty available during the time of the study who work with the five health science programs obtaining an associate degree in applied science.

**Interventions:** Increased teacher led open labs to decrease the amount of incorrect practices. Requiring students to take an active part in the developing their remediation plan.

**Main Outcome Measure(s):** Remediation occurs within various health science programs. Remediation was successful when it incorporated multiple techniques. Remediation was necessary for many study to be successful in their program.

**Results:** Findings indicated that instructors who conducted remediation used instructional techniques that matched effective practices found in the current research literature, e.g. videos, case studies, patient simulation, mind-mapping, and mock practicals. The success of the remediation program was increased when more than one of the aforementioned techniques were incorporated into the plan.

**Conclusions:** The findings of this study may promote positive social change by standardizing the use of effective instructional techniques for remediation in the professional-track programs, thereby improving student retention and declining enrollment in health science programs.

**Author Disclosure(s):** This research study was the product of my dissertation. I have not yet presented this information at a conference to date.

**Key Words:** Remediation, Health Science Education, Higher Education, Professional-Track Programs

#### Late Breaking Research Poster 1143080

##### Responsiveness of the Standing and Walking Assessment Tool in Inpatients with Spinal Cord Injury



**Kristin Musselman (KITE, Toronto Rehabilitation Institute-University Health Network, Dept. of Physical Therapy, Faculty of Medicine, University of Toronto), Katherine Chan, Jean-François Lemay, Kristen Walden, Molly Verrier, Dany Gagnon**

**Objective:** The Standing and Walking Assessment Tool (SWAT) includes 11 stages of walking capacity that inform which walking measures to administer. We evaluated the responsiveness of the SWAT stages during inpatient rehabilitation, and compared SWAT responsiveness to that of established spinal cord injury (SCI) measures.

**Design:** Retrospective database study.

**Setting:** Ten Canadian rehabilitation hospitals.

**Participants (or Animals, Specimens, Cadavers):** 549 individuals with sub-acute, traumatic SCI (American Spinal Injury Association Impairment Scale (AIS) rating of A (n=146), B (n=57), C (n=83), D (n=262)).

**Interventions:** Physical therapists staged participants according to the SWAT Staging Guidelines, and administered the corresponding walking measures at admission and discharge. At these timepoints, lower extremity motor scores (LEMS) were also determined. Data spanning June 2014-April 2018 were extracted.

**Main Outcome Measure(s):** Measures included the SWAT Stages, LEMS, and for most participants with AIS C and D SCI, the recommended SWAT measures: Berg Balance Scale (BBS), modified Timed Up and Go (mTUG), 10-meter Walk Test (10MWT), and 6-minute Walk Test (6MWT). Responsiveness was evaluated using the standardized response mean (SRM).

**Results:** The mean increases in number of SWAT stages were: AIS A = 1.0+1.6, AIS B = 1.7+2.5, AIS C = 4.0+3.5, AIS D = 3.4+2.6. Responsiveness of the SWAT stages was moderate for participants with