



MovePA

POSTER & PLATFORM

ABSTRACT BOOK

Oct. 16-18, 2020

2020 PPTA Virtual Annual Conference

PLATFORM PRESENTATIONS

Both platform presentation sessions will be held **LIVE** on Saturday, Oct. 17, 1:30 p.m.-3:30 p.m. Platform sessions will **NOT** be recorded.

Attendees can only attend one platform presentation session to receive 1 General Contact Hour.

Group 1 Presentations

Tele-Rehab Utilization in Pennsylvania During the COVID-19 Pandemic – *Matthew D.*

Heintzelman, PT, DPT, Cert MDT // Stan Dacko, PT, PhD // Justin Mierzwicki, PT, DPT, GCS // Roger Nelson, PT, PhD, FAPTA

Effectiveness of a Virtual Exercise Program for Adults with Disabilities: Clients' Perspectives –

Courtney Roca, PT, DPT, EdD

The Relationship Between Disability and Hop Performance in Subjects Following Anterior Cruciate Ligament Reconstruction – *Joshua*

Prall, PT, DPT // Michael Ross, PT, DHSc, PCS, FAAOMPT

The Influence of Acute Physiological Fatigue on Lower Extremity Injury: Does it Matter? –

Evan Andreyo, PT, DPT, PCS, SCS // Jeff Tompkins, PT, DPT, OCS

An Investigation of Age-Related Changes in Muscle Structure and Function in Community Dwelling Older Adults Stratified by Fall Risk -

Marcia Thompson, PT, DPT, DSc // Connor Cordero, SPT // Ashley Hatten, SPT // Kevin Plageman, SPT // Joelle Winey, SPT

Group 2 Presentations

Adapting the Role of Physical Therapists in the Acute Care Hospital During a Global Pandemic

– Daniel Sawyer, PT, DPT // Michael Pechulis, PT, DPT // Ryan Vetter, MS, OTR/L // Elizabeth Wetzler, PT // Mary Loose, PT // Mark Fuse, PT, DPT // Amanda Fox, PT, DPT // Sidney M. Stoddard, PT, DPT // Julie Skrzat, PT, DPT, PhD, CCS

Current Aerobic Exercise Prescription in Patients Post Stroke: A Survey of Practicing Expert Neurorehabilitation Physical Therapists

– Ethan Hood, PT, DPT, MBA, GCS, NCS // Katrina Buckland, SPT // Breanna Colvin, SPT // Shannon Davies, SPT // Shannon Pennella, SPT // Abigail Thomson, SPT

The Influence of Physical Therapy Frequency on AMPAC Scores & Hospital Discharge Disposition: A Pilot Study – *Julie M. Skrzat, PT,*

DPT, PhD, CCS // Kathryn Hyland, SPT // Jennifer Blandino, SPT // Ryan Laughran, SPT // Alex Flynn, SPT // Kayla Miller, SPT // Michael Pechulis, PT, DPT // Katy Blessing, PT, DPT

Using the Two Minutes Step Test (2MST) Outcome Measure in Patients After Lung

Transplant to Guide Clinical Care – *Emily Ott, PT, DPT // Elizabeth Steele, PT, DPT, CCS, Board Certified Cardiovascular and Pulmonary Clinical Specialist*

Pedometers in Assisted Living Facility: A Collaborative Approach – *Nanami Mano, SPT //*

James Eng, PT, DPT, MS, GCS

PLATFORM PRESENTATIONS

Tele-Rehab Utilization in Pennsylvania During the COVID-19 Pandemic

Presented By

Matthew D. Heintzelman, PT, DPT, Cert MDT // Stan Dacko, PT, PhD // Justin Mierzwicki, PT, DPT, GCS // Roger Nelson, PT, PhD, FAPTA

Purpose/Hypothesis

Due to the COVID-19 pandemic, shelter in place orders and precautions, health care practitioners are faced with unprecedented challenges in providing patient/client care while maintaining a safe environment for the patient/client and the clinician. This study seeks to understand the demographics and use of telehealth by licensed physical therapists in Pennsylvania.

Understanding scope of use, especially during the pandemic, provides information on educational needs and policy adjustments regarding telehealth's role specifically as it relates to physical therapy practice within Pennsylvania and nationally.

Subjects/Materials/Methods

A survey via Qualtrics® was developed. Questions related to practice, perceived utility and limitations of telehealth especially for physical therapy services. The survey as designed in Qualtrics® maintained anonymity for all respondents. Data collection was performed from April 28, 2020 to May 18, 2020. Data were collected in aggregate and descriptive statistics were used to analyze the results.

Results

There were three hundred nineteen respondents. Twenty-three respondents answered negatively to being a licensed physical therapist in Pennsylvania, resulting in two hundred and ninety-six included in final analyses. The largest group of respondents (67%) were licensed Physical Therapists for greater than 15 years. The next largest group (17%) was licensed for 0-5 years. Prior to January 2020 81% of the respondents were actively engaged in patient/client examination, intervention, and related activities more than 20 hours per week. Most of the Physical Therapists (90%) spent no time utilizing Telehealth services to engage in patient/client examination and intervention prior to January 2020. By the April survey deployment period, 32% of the respondents were now using Telehealth for more than 30% of their total patient/client activities. Equally, a third were still not using telehealth services. 7% of respondents indicated they were not using telehealth over concerns of not being reimbursed. 5% were concerned about patient expectations. A majority of the respondents (62%) were going to continue using telehealth services or were looking to increase their utilization. The large majority (76%) found telehealth services to be moderately to extremely effective.

Conclusions

Physical therapists have dramatically changed their manner of providing patient/client care during the COVID-19 Pandemic. Telehealth is established as an intervention strategy and supported in the literature as an effective delivery model but was rarely used prior to the pandemic. Many Physical Therapists adopted Telehealth for at least part of their practice during the pandemic. Those who used Telehealth found it moderately to extremely effective.

Clinical Relevance

Restrictions and concerns regarding the safe delivery of in-person Physical Therapist examination and intervention will remain for the foreseeable future. While mitigating steps can be taken to reduce patient/client risk of Covid-19 infection, there will remain a population subset who may be unable or unwilling to participate in in-person care due to underlying conditions placing them at high risk. Telehealth provides a mechanism for individuals to continue to engage in Physical Therapist examination and skilled intervention during extreme and unusual circumstances. Long term, as effectiveness and proper patient/client selection become more established, Telehealth can expand patient/client access and improve care delivery efficiencies.

PLATFORM PRESENTATIONS

Effectiveness of a Virtual Exercise Program for Adults with Disabilities: Clients' Perspectives

Presented By

Courtney Roca, PT, DPT, EdD

Purpose

The health status of adults with disabilities is recognized as a formal health disparity.¹ As a result, wellness programs have been developed and proven effective for this population. However, in recent months due to COVID-19, participation in wellness programs has been restricted for this population. In response to this restriction and to provide program participants with continued accessibility, one regional wellness program for adults with disabilities has adopted a virtual format. However, the effectiveness of virtual wellness programming for this population is unknown. Therefore, the purpose of this research is to determine the effectiveness of a virtual exercise program for adults with disabilities.

Subjects/Materials/Methods

Study participants will consist of participants of a regional virtual wellness program. Study participants will be recruited through email. To determine the effectiveness of the virtual program, a survey will be developed and disseminated electronically to study participants through Qualtrics. The survey will consist of 2 sections: part 1 will include participant demographic information, part 2 will include questions about participants' perceptions and satisfaction with the virtual program. Once responses are received, the data will be analyzed using JASP statistical software.

Results/Conclusions

Data collection is in progress. Estimated date of data collection completion: July 30, 2020.

Clinical Relevance

Given the vulnerable nature of the study population, continued restrictions limiting participation in in-person wellness programs is anticipated. Virtual formats may be an advantageous solution to provide adults with disabilities with continued access to this essential programming. The results of this novel research will inform not only if this type of format is effective for this population, but also the nature of any adaptations that may be needed in order to maximize the effectiveness of virtual programming in the setting of an anticipated long term need for this mode of delivery as a result of COVID-19.

PLATFORM PRESENTATIONS

The Relationship Between Disability and Hop Performance in Subjects Following Anterior Cruciate Ligament Reconstruction

Presented By

Joshua Prall, PT, DPT // Michael Ross, PT, DHSc, OCS, FAAOMPT

Purpose/Hypothesis

Clinicians commonly use hop tests to assess disability levels in patients following anterior cruciate ligament reconstruction (ACLR). However, poor correlations have been shown to exist between hop tests and patient disability levels following ACLR. We believe there are two possible reasons for this. First, most hop tests have been limited to the sagittal plane. Second, the tests have not routinely assessed endurance capabilities. Because patients following ACLR often want to return to sports activities that are endurance-based with multiplanar movements, we hypothesize that hop tests that assess endurance performance with movements outside the sagittal plane may be more closely related to patient disability levels following ACLR than sagittal plane tests that are not endurance based. Therefore, the purpose of this study was to determine the relationship between patient disability levels following ACLR and lower extremity performance as measured through a single leg hop for distance test, a 45-second sagittal plane hop test, and a 45-second frontal plane hop test.

Subjects/Materials/Methods

Sixteen subjects, all cadets at the U.S. Air Force Academy, participated in this study (10 males, 6 females, age=21.7±1.2 years, height=178.3±8.7 cm, weight=79.8±14.3 kg). Selection criteria included: 1) a history of unilateral ACLR using a bone-patellar tendon-bone autograft performed greater than 24 months prior to the time of participation in this study; 2) successful completion of a rehabilitation program; 3) clearance from an orthopaedic surgeon to return to preinjury activity levels; and 4) full return to all required military and sport activities. The Knee Outcome Survey Sports Activity Scale (SAS) was used as our disability measure. The SAS was numerically graded on a scale of 0 to 100, with higher scores indicating lower levels of disability. The tests used to measure closed kinetic chain performance were the single leg hop test for distance and a 45-second sagittal and frontal plane hop test, which required subjects to hop back and forth over a strip of athletic tape in the required direction (front to back and side to side) as many times as possible during a 45-second period.

Results

The mean time from ACLR to testing for subjects in this study was 41.4±15.0 months. The SAS score for subjects with a history of ACLR was 89.2±9.12. While no significant relationship existed between the SAS scores and the percent lower extremity differences for the single leg hop test ($r=0.07$, $P>0.05$) or the 45-second frontal plane hop test ($r=0.26$, $P>0.05$), a significant relationship was noted between the SAS scores and the percent lower extremity differences for the 45-second sagittal plane hop test ($r=0.51$, $P<0.05$).

Conclusions and Clinical Relevance

These findings indicate that the 45-second sagittal plane hop test could be a useful clinical test in assessing a patient's disability level after ACLR, particularly if used in conjunction with other clinical assessment techniques. However, the single leg hop test and the frontal plane hop test should be used with caution when assessing patient disability levels following ACLR.

PLATFORM PRESENTATIONS

The Influence of Acute Physiologic Fatigue on Lower Extremity Injury: Does it Matter?

Presented By

Evan Andreyo, PT, DPT, OCS, SCS // Jeff Tompkins, PT, DPT, OCS

Purpose

Deficits in neuromuscular control have long been considered modifiable risk factors that influence lower extremity injury, especially for that of the ACL. With this basis for understanding, debate remains on whether or not fatigue holds a significant influence on biomechanics and can further increase the likelihood of injury. Some authors contend that with an absence of correlation between injuries and in-game and in-season timing, fatigue cannot be seen as a predictive factor. However, a growing body of literature continues to suggest that there are biomechanical alterations demonstrated after varied fatigue protocols. A pressing challenge in the synthesis of this information, however, is the lack of consensus in the definition of fatigue and how this is obtained or quantified. The purpose of this presentation is to offer a review of the literature regarding physiologic fatigue and its influence on lower extremity injury. Within this review, the presenters will attempt to characterize fatigue and determine its application, particularly within the framework of return-to-sport testing and injury prevention programs.

Description

A review of the literature was performed using Pubmed and EBSCOhost resources with the inclusion criteria of 1) full text, 2) English, 3) publish date between 2005 and 2020, and 4) inclusion of fatigue, injury, and return to sport with the utilization of synonyms. Studies were appraised individually with a focus on the influence that acute physiologic fatigue had on biomechanics and its integration of return to sport testing. Nine primary studies were included for this review.

Summary of Use

Fatigue can carry a wide variety of definitions spanning pre-game, in-game, and psychological fatigue. To assess the influence that fatigue has on the risk of injury, its occurrence must be viewed as both a central process for central drive in muscle activation as well as a peripheral process for local force-generating capacity. Varied authors have attempted to assess the influence of local and sport-specific fatigue protocols on biomechanics. Their findings suggest significant changes in lower extremity biomechanics during varied landing and change of direction tasks after completion of a fatigue protocol inducing acute physiologic fatigue. There is a strong suggestion of a more significant influence on a central level, particularly in unplanned movements. The identified biomechanical alterations are correlative to increased injury risk, specifically ACL injury.

Clinical Relevance

Fatigue must be weighed-in as an influencing factor in the decision-making process for return-to-sport readiness and the development of injury prevention programs. Given the complex nature of fatigue and the challenges in providing a singular definition, fatigue must be considered on various levels. It is the opinion of the presenters that current literature holds the most promise for central processes of acute physiologic fatigue with attempts to include sport-specific movement. The presenters recommend that athletic movement should be assessed in an acute physiologic fatigued state, as this can be a crucial component of assessing an athlete's preparedness for sports participation. The development of fatigue protocols should consider the inclusion of multi-directional challenges and assessment of unplanned movements.

PLATFORM PRESENTATIONS

An Investigation of Age-Related Changes in Muscle Structure and Function in Community Dwelling Older Adults Stratified by Fall Risk

Presented By

Marcia Thompson, PT, DPT, DSc // Connor Cordero, SPT // Ashley Hatten, SPT // Kevin Plageman, SPT // Joelle Winey, SPT

Purpose/Hypothesis

Many factors contribute to postural control and risk of falling in community dwelling older adults with differences documented between fallers and non-fallers in muscle volume, quadricep strength, muscle strength, rate of torque development as a function of acceleration, functional strength and mobility, and gait velocity. Research to date has investigated hip, knee, and normal anatomy of the ankle musculature, however the relationship between ankle muscle structure (volume), strength MVC, sway velocity and acceleration, and functional strength by fall risk stratification in community dwelling individuals over the age of 50 has not yet been investigated.

Number of Subjects

Twenty-two (22)

Materials/Methods

Subjects were stratified as either low risk, medium risk, or high fall risk based upon the Falls Criterion developed by Buatois et al. Measurement included muscle structure using Real Time Ultrasound (RTUS) analysis of the Gastrocnemius (GS), Anterior Tibialis (AT), and Peroneus Longus (PER) of the dominant lower extremity, strength testing (maximal volitional contraction, MVC) of each muscle using hand-held dynamometry, inertial measurement of sway area (mCTSIB), sway acceleration, and sway velocity, and functional strength performance using the 5x Sit to Stand (FTSTS). The total volume of each muscle (cm^3) was calculated from the cross-sectional area, with data normalized through calculation of volume ratios between the GS/AT; AT/GS; PER/(GS/AT); and the PER/(AT/GS). Differences in the measures between fall risk groups were calculated using multivariate analysis of variance. The relationship between structure, strength, sway metrics and function were explored using Spearman's rho given non-normal distribution.

Results

Subjects were mean age 66.91 years (51-89; 59.1% >65), 77.27% female, and stratified as low risk (n=10), medium risk (n=9), and high risk (n=3). There were no significant interactions between the measures by fall risk grouping. Relationships were identified between PER/(GS/AT) volume and gait velocity ($p=0.495$, $p=0.019$) and between PER/(AT/GS) and gait velocity ($p=0.626$, $p=0.002$). FTSTS duration and sway area for both condition 3 ($p=0.562$, $p=0.007$) and condition 4 ($p=0.438$, $p=0.041$) of the mCTSIB were significantly correlated.

Conclusions

Small sample size and skewed distribution of groups/group data to date limit conclusions relative to differences by relative fall risk and limit identification of correlations to the most significant relationships between the combined muscle volume of GS, AT, and the PER and gait velocity. The relationship between ankle muscle volume and control of sway acceleration in the coronal and sagittal planes is suggestive of the effect of dynapenia on functional ability. The relationship between FTSTS duration and sway area on unstable mCTSIB surface conditions requires additional investigation. Continuation of data collection will allow for age-matched comparisons across fall risk classifications and improved understanding of muscle and functional relationships.

Clinical Relevance

Identification of structural differences between those at varying degrees of fall risk may lead to increased understanding of mechanisms underlying falls in the community-dwelling older adult population and further refine and direct prescription of interventions in physical therapy.

PLATFORM PRESENTATIONS

Adapting the Role of Physical Therapists in the Acute Care Hospital During a Global Pandemic

Presented By

Daniel Sawyer, PT, DPT // Michael Pechulis, PT, DPT // Ryan Vetter, MS, OTR/L // Elizabeth Wetzler, PT // Mary Loose, PT // Mark Fuse, PT, DPT // Amanda Fox, PT, DPT // Sidney M. Stoddard, PT, DPT // Julie Skrzat, PT, DPT, PhD, CCS

Purpose

To describe how physical therapists (PTs) at a tertiary hospital assisted in the development and implementation of a novel proning program for patients with COVID-19 in a non-ICU environment.

Description

Traditionally, PTs' roles in the acute care hospital focus on disposition and discharge planning, maintaining the surgical pathway, and rehabilitation. However, the COVID-19 pandemic upended normal operations and changed PTs' roles. Faced with an onslaught of patients with respiratory symptoms, yet limited hospital resources, our rehabilitation department collaborated with nursing and physician staff to rapidly develop, implement, and assess a proning protocol for patients diagnosed with COVID-19 in a non-ICU environment. This was in an attempt to decrease ICU admissions and improve patient outcomes. In three days, PTs provided nursing education on mobility techniques, while developing a shared electronic list containing patients with proning orders, PT documentation templates, and educational photographs demonstrating the proper prone position.

Summary of Use

Designated PTs were assigned to COVID-19 floors to round and educate nursing staff on the new protocol. A proning cart was created to provide immediate access to necessary equipment. During the PT evaluation, patients were screened for their suitability to assume a prone position via physiological tolerance, contraindications, and past medical history. Vital signs were obtained in supine, and incrementally once in prone. Of those who could safely assume prone, patients were stratified into one of three groups: Independent, Assistance, or Special Considerations. The Independent group demonstrated independent ability to prone, the Assistance group required mobility retraining to reach prone, and the Special Considerations group demonstrated cognitive or physical limitations preventing achievement of the prone position. PT interventions for this group focused on alternative positioning and nursing education on positioning devices. The Assistance and Special Considerations groups were seen by PT daily until oxygen needs reached baseline. Over 25 days, 207 patients were seen. The breakdown was as follows: Independent group: 63 patients (30.43%), Assistance group: 39 patients (18.84%), Special Considerations group: 61 patients: (29.47%). Forty-four patients (21.26%) were deemed inappropriate through chart review and discussion with the medical team. Twenty-nine patients (11.6%) transferred to the ICU, including 8 (12.70%) from the Independent group, 10 (24.64%) from the Assistance group, and 11 (18.03%) from the Special Considerations group. Twenty-four (11.6%) succumbed including 4 (16.67%) from the Independent group, 7 (29.17%) from the Assistance group and 13 (54.17%) from the Special Considerations group.

Clinical Relevance

The described protocol identifies the response of an engaged PT department to a global pandemic. Takeaway lessons include interprofessional collaboration resulting in the efficient implementation of a novel proning protocol. With their unique skill set, PTs offered their expertise to fill a critical need. Based on the success of this protocol's implementation and known benefits of the prone position for respiratory diseases, future considerations should be directed toward PT's role in establishing similar hospital protocols for respiratory illnesses outside of COVID-19. Educational materials and documentation for this specific intervention will be shared.

PLATFORM PRESENTATIONS

Current Aerobic Exercise Prescription in Patients Post Stroke: A Survey of Practicing Expert Neurorehabilitation Physical Therapists

Presented By

Ethan Hood, PT, DPT, MBA, GCS, NCS // Katrina Buckland, SPT // Breanna Colvin, SPT // Shannon Davies, SPT // Shannon Pennella, SPT // Abigail Thomson, SPT

Purpose/Hypothesis

The purpose of this study was to survey American Board of Physical Therapy Specialties (ABPTS) Neurologic Clinical Specialists (NCS) and physical therapists practicing in a neurorehabilitation setting with greater than one year of experience treating stroke on the current practice patterns of aerobic exercise dosage for patients recovering from stroke. Prior research suggested that practice patterns among generalized physical therapists did not comply with aerobic exercise dosing guidelines set by the American Stroke Association (ASA) for patients recovering from stroke. Practice patterns among expert clinicians is unknown. We hypothesized that current practice patterns of dosing aerobic exercise for patients recovering from stroke do not comply with the ASA guidelines among expert physical therapists.

Number of Participants

246 licensed physical therapists with either NCS credential and/or greater than one year of clinical experience in a neurorehabilitation setting treating patients recovering from stroke.

Materials/Methods

A pilot survey was sent to 10 expert neurorehabilitation physical therapists and returned with feedback. The final 20 question survey was mailed to 1,000 randomized members of the APTA's Academy of Neurologic Physical Therapy and posted on the neurologic section's listserv. 246 surveys were returned. Data analysis was performed using IBM SPSS, version 23.

Results

Results demonstrated 65% of respondents are not following ASA guidelines for aerobic exercise prescription for patients recovering from stroke. Demographic results demonstrated similar survey response distribution among US regions and various levels of education and clinical practice. No significance was found between ASA guideline adherence and geographic location (5.349, $df=3$, $p>0.148$). Survey participants indicated stroke severity (48.6%), time constraints (32.1%), and other factors (21.4%), such as insurance restrictions, lack of access to gym equipment, and safety concerns as the top three barriers for adherence to the guidelines. The most frequently chosen alternative dosage of aerobic exercise was 1-2 days per week at 40-60% of the patient's maximum heart rate for 11-20 minutes across all clinical settings. Chi-square analysis of actual dosages related to practice setting revealed no significant relationships. Inpatient physical therapists chose aerobic exercise dosing of 3-5 days per week significantly more than outpatient physical therapists (26.633, $df = 2$, $p < 0.001$).

Conclusion

While ASA guidelines of aerobic exercise prescription for patients recovering from stroke are published, many physical therapists who treat patients recovering from stroke do not adhere to these recommendations. Barriers limiting adherence include but are not limited to severity of the stroke, limited treatment time, and safety concerns. Respondents indicated actual prescribed dosage of aerobic exercise at lower frequencies, intensities, and time lengths compared to the ASA guidelines.

Clinical Relevance

It is imperative to make ASA guidelines easily accessible and the benefits of appropriately dosed aerobic exercise for patients post stroke widely known. Expert physical therapists who care for patients recovering from stroke appear to under dose aerobic exercise. Various barriers have been identified and require resolution to improve guideline adherence. Future research in the use of knowledge translation techniques to improve clinician awareness and use of ASA guidelines is warranted.

PLATFORM PRESENTATIONS

The Influence of Physical Therapy Frequency on AMPAC Scores & Hospital Discharge Disposition: A Pilot Study

Presented By

Julie M. Skrzat, PT, DPT, PhD, CCS // Kathryn Hyland, SPT // Jennifer Blandino, SPT // Ryan Laughran, SPT // Alex Flynn, SPT // Kayla Miller, SPT // Michael Pechulis, PT, DPT // Katy Blessing, PT, DPT

Purpose/Hypothesis

The primary aim of our study was to determine if there was an association between physical therapy (PT) frequency and discharge location for subjects who were admitted to the cardiovascular (CV) service line of a tertiary hospital and had an AMPAC score between 12 and 17 at PT initial evaluation. A secondary aim was to determine if there was a difference in AMPAC scores between PT initial evaluation and last PT session.

Subjects/Materials/Methods

A retrospective chart review was performed. Inclusion criteria included patients who were ≥ 18 years of age, admitted to the tertiary hospital's CV floors between January 1, 2019 and March 30, 2019, and received an AMPAC score between 12 and 17 at PT initial evaluation. Exclusion criteria included re-admission to the intensive care unit during the same hospitalization, pregnant women, prisoners, and a hospital stay complicated by a cerebrovascular accident. Subjects who met inclusion criteria were stratified into remaining on or transferring off CV service line throughout hospitalization. For this project, subjects who stayed on the CV service line throughout their hospitalization were studied. Subjects were then divided by frequency of PT visits: ≥ 0.57 and < 0.57 , with the cutoff determined as 4 visits over 7 days. Discharge locations included home, acute inpatient rehabilitation, skilled nursing facility, or other. Statistical analysis included demographic and descriptive statistics, Chi-square analysis to look for an association between frequency of PT visits and discharge location, and paired t-tests to compare AMPAC scores at PT initial evaluation and last PT session.

Results

Ninety-nine subjects (mean age = 77.33 years [46-97], 54 males) were included. Twenty-six subjects received ≥ 0.57 PT visits throughout their hospitalization. There was no significant association between PT visit frequency and discharge location ($\chi^2 = 3.75$, $p=0.29$). There was a statistically significant difference in AMPAC score between PT initial evaluation and last PT visit for patients receiving ≥ 0.57 PT visits ($t=-6.23$, $p=0.000$) and those who received < 0.57 visits ($t=-3.29$, $p=0.002$). Subjects who received ≥ 0.57 PT visits had a greater increase in mean scores (3.04) compared to subjects who received < 0.57 visits (1.80).

Conclusion

There was not an association between frequency of PT visits and discharge location. This could be due to a small sample size, with an uneven distribution of subjects between frequency groups and discharge locations. However, a greater percentage of patients who received ≥ 0.57 PT visits were discharged home (76.9%), compared to those who received < 0.57 visits (58.1%). There was a difference in AMPAC scores from PT initial evaluation to last PT visit in the positive direction, indicating functional improvements.

Clinical Relevance

This study indicates the value of frequency of physical therapy on functional improvement prior to discharge. Despite requiring moderate assistance at PT initial evaluation, it is plausible that a minimum of 0.57 visits can promote enough functional improvements to be discharged home. Future research should include a larger sample size to discriminate amongst discharge locations, as well as study which physical therapy interventions are most likely to improve score to optimize discharge home.

PLATFORM PRESENTATIONS

Using the Two Minute Step Test (2MST) Outcome Measure in Patients After Lung Transplant to Guide Clinical Care

Presented By

Emily Ott, PT, DPT // Elizabeth Steele, PT, DPT, CCS Board Certified Cardiovascular and Pulmonary Clinical Specialist

Background and Purpose

The current standard outcomes implemented on initial evaluation and discharge at the Hospital of the University of Pennsylvania in the outpatient population following lung transplant are the Short Physical Performance Battery (SPPB) and the Six Minute Walk Test (6MWT). A majority of the research on these outcome measures has been completed on individuals prior to transplant or those with end stage lung disease not seeking transplant. For patients post lung transplant, there is frequently a ceiling effect noted on these tests, limiting goal setting. The Two Minute Step Test (2MST) requires minimal equipment and is quick to administer, making it ideal for use in the clinic. This project aims to utilize the 2MST with patients post lung transplant to determine if there is a submaximal aerobic test to better track patient progress with physical therapy (PT) intervention and advance towards optimal community participation.

Case Description and Methods

Patients with PT orders for outpatient, post lung transplant evaluation and treatment underwent standard of care with an addition of the 2MST on week of evaluation and date of discharge. Patients were provided with standardized instructions by project physical therapists. Activity tolerance was monitored and recorded throughout.

Outcomes

Males and females, ages 26-72, post lung transplant scored an average of 11/12 on the SPPB at initial evaluation. From initial evaluation to discharge, there was an 11% change (improvement) in SPPB score compared to a 59% change (improvement) on the 6MWT. Patient performance on the initial 2MST equated to below average compared to age-matched norms for a majority of patients. Patients' score at discharge improved compared to initial score, however did not always meet established age-matched norms. Of the sampling of 16 individuals who completed all tests, six of these individuals were compared to normative data. On initial evaluation, one individual completed the 2MST within the range anticipated for his age; on discharge, four of the six individuals performed at the level of their age matched norms. The remaining 10 individuals were younger than the age-range of normative data. However, on initial evaluation, eight performed below norms anticipated for their elders; on discharge, three were unable to perform to the normative standards of their elders. In our sample, the average percent change (improvement) observed on the 2MST was 114%.

Discussion

This care series highlights the safe and efficient use of the 2MST in the population of patients post lung transplant to capture progress in submaximal exercise capacity after PT intervention. Physical therapists working with patients after lung transplant should utilize the 2MST, in combination with the SPPB and 6MWT, for goal-setting to optimize return to community-level function. Utilization of multiple submaximal aerobic tests and outcome measures may mitigate the impacts of a ceiling effect and further justify ongoing intervention to achieve the scores of the available normative data. Future data collection should include impacts of achieving age-matched normative values in this population on subjective measures such as quality of life, and/or impacts of hospital readmission.

PLATFORM PRESENTATIONS

Pedometers in Assisted Living Facility: A Collaborative Approach

Presented By

Nanami Mano, SPT // James Eng, PT, DPT, MS, GCS

Purpose

Literature supports that decreased levels of physical activity (PA) and exercise are common among older adults (>65 years), especially those residing in assisted living facilities (ALF), affecting their overall health. Pedometers have been used as a motivational tool to increase PA, however, little research has investigated this among ALF residents who are older than 85 years. The purpose of this initiative was to implement and assess a feasible and collaborative process involving ALF staff and physical therapy to use pedometers to motivate ALF residents to be more physically active.

Description

Since this study was initiated and conducted by a student and faculty member of University Physical Therapy program, investigators obtained IRB approval. For recruitment, the investigators presented an in-service to ALF residents explaining the potential benefits of a pedometer to increase PA. Interested residents were approved by the facility staff as appropriate participants based on their ability to understand and remember simple instructions and a health profile that did not include any significant medical issues. Sixteen participants (86±6 years) were provided an inexpensive pedometer for 12-weeks. Residents were instructed to report to the Activities department each day after breakfast to have the pedometer checked. Activities staff recorded the number of steps in a log and provided encouraging feedback regarding the number of steps. At the beginning of the program, investigators asked the participants to identify goals from being in the program and followed up at 6 weeks regarding their progress. Outcome measures including the 6MWT, TUG, DGI, gait speed, 30-seconds STS, and CASP-12 were assessed at the beginning and the end of the 12-weeks.

Summary of Use

11 of the 16 participants completed the study. The cohort's mean age was 88 years (± 4.9 years). Their mean gait speed was 0.6 meters/sec (± 19), suggesting low functional status. Six participants used a cane or walker. At the end of the study, investigators analyzed the number of steps the participants walked each week and compared participants' outcome measures pre- and post-study. Notable findings include: 1) Residents fell into two groups: high walkers (mean = 3310 steps per day, n=6) and low walkers (mean=1000 steps per day, n=5), 2) High walkers articulated more concrete goals (e.g., be able to walk 6 times from room to other end of building on resident's floor), 3) Facility staff reported that the program procedures required minimal effort and felt the program benefited the participants. 4) Several participants felt the pedometers motivated them to walk more 5) The mean number of steps for all participants declined moderately over the 12 weeks, but participants remained engaged and in good health.

Clinical Relevance

Pedometers can be useful in several ways by: 1) motivating residents to increase PA, 2) involving facility staff (i.e. activities staff) to promote PA among residents, 3) tracking a simple objective measure of residents' PA level as a criterion for potential intervention.

POSTER PRESENTATIONS

Pre-Recorded Poster Presentations

All posters have been pre-recorded and will be available to paid conference registrants until 12/31/2020.

You must review **6** poster recordings to earn **1 General Contact Hour**, or view all **12** to earn **2 General Contact Hours**.

Impact on Children Who Are Ventilator Dependent: Perceptions of Self Esteem, Emotional Functioning, Social Functioning and Physical Functioning in a Pediatric Camp - Tonya Miller, PT, DPT // Jennifer Price, PT, DPT, PCS // Mackenzie Lausch, SPT // Lily McDowell, SPT // Catherine Orlando, SPT // Alyssa Raughley, SPT // Connor Swank, SPT

Rehabilitation Course of Patient Admitted to Hospital with COVID-19 - Katy Blessing, PT, DPT // Michael Pechulis, PT, DPT // Julie M. Skrzat, PT, DPT, PhD, CCS

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Clinical-Community Connections: Partnering for Sustainable Outcomes - Jennifer Sidelinker, PT, DPT // Jennifer Brach, PhD, PT // Colleen Hergott, PT, MEd, DPT // Beth Rohrer, PT, DPT // Lori Schrodt, PT, PhD // Kathy Shirley, PT, DPT // Tiffany Shubert, PT, PhD // Jennifer Tripken, EdD, CHES // Jennifer Vincenzo, PT, MPH, PhD

The Effects of a Lower Extremity Injury Reduction Program for Men's Collegiate Soccer Players: A Retrospective Study - Kelley Moran, PT, DPT, ATC, EdD // Sean Luzzi, SPT // Nicole Palanza, SPT // Tristan Snyder, SPT

Physical Activity in Hematologic Cancer Survivors: A Secondary Analysis of the Nation Health Information Survey - Claire McCann, PT, DPT // Christine Chevalier, DHSc, MPH (CPH), MS, CSSGB, CPC

Perceptions of PTA Program Directors on the Preferred Length and Degree of Entry-Level PTA Programs - Jennifer L. Jewell, PT, DPT, GCS // Justin Berry, DPT, PhD // Becky S. McKnight, PT, MS // Michele Avery, PTA, MS // Susan Cotterman, PT, MBA // Kathy Giffin, PTA, MS // Krissa Reeves, PTA, MEd

Robot-Based Evaluation of Motor and Cognitive Impairments Living with HIV and HIV-Associated Stroke - Carol A. Wamsley, PT, DPT, NCS, CBIS // Kevin D. Bui, BS // Michelle J. Johnson, PhD

POSTER PRESENTATIONS

Impact on Children who are Ventilator Dependent - Perceptions of Self Esteem, Emotional Functioning, Social Functioning and Physical Functioning in a Pediatric Camp

Presented By

Tonya Miller, PT, DPT // Jennifer Price, PT, DPT, PCS // Mackenzie Lausch, SPT // Lily McDowell, SPT // Catherine Orlando, SPT // Alyssa Raughley, SPT // Connor Swank, SPT

Purpose/Hypothesis

Attending summer camp is an important experience for all children. Chronic illness impacts about 15-18% of children and puts them at risk for long-term psychosocial adjustment difficulties. Psychosocial adjustment difficulties affect children's ability to participate in social settings. This is especially difficult for children who are ventilator dependent due to challenges with communication and access to facilities that encourage social interactions such as play, sports, and recreational activities. Summer camps are a modality which address barriers of social interaction. While there is growing amount of evidence supporting camps for children with chronic illness, there is still limited research supporting its impact for children who are ventilator dependent. The purpose of this study is to analyze the perceptions of the impact of a camp experience on the self-esteem, social functioning, emotional functioning, and physical functioning of a child who is ventilator dependent.

Number of Subjects

Subjects participating in the study will complete the survey by 7/4/2020. Four camps have been contacted regarding participation and we expect greater than 30 responses.

Materials/Methods

Recruitment will occur through an email sent to camp directors to gauge interest in participation. If interested, they will then forward the Qualtrics survey link to pediatric campers that have attended a camp for children who are ventilator dependent. Campers will complete the questionnaire online via Qualtrics after consent from the participant's parents/guardian. The questionnaire consists of questions from the Pediatric Camp Outcomes Measure (PCOM). The PCOM reflects both an overall perception of the camp experience and the four subscale scores reflect the child's self-esteem, emotional functioning, social functioning, and physical functioning.

Results

Upon completion of the survey by 7/4/2020, the results will be analyzed using descriptive statistics. Descriptive analysis of mean, median, mode and standard deviation of the PCOM questionnaire responses will be conducted. Data analysis will include correlation between overall questionnaire score, subscales scoring, and participant demographics. An overall total score will also be calculated.

Conclusion

Pending Results

Clinical Relevance

Understanding the psychosocial aspects of children who are ventilator dependent enhances understanding of their needs and promotes individualized care. This population is currently underrepresented yet benefits from physical therapy services. This research project adds to the body of knowledge by highlighting the improvements of the children's psychosocial aspects post camp attendance and improvements in their quality of life which is an important goal of all therapy services.

POSTER PRESENTATIONS

Rehabilitation Course of Patient Admitted to Hospital with COVID-19

Presented By

Katy Blessing, PT, DPT // Michael Pechulis, PT, DPT // Julie M. Skrzat, PT, DPT, PhD, CCS

Background & Purpose

Physical therapy (PT) management of patients with COVID-19 is evolving. Initially, in the intensive care unit (ICU) and especially with patients receiving oxygen that could aerosolize secretions, PT was discontinued since pathophysiological changes were unknown and conservation of protective personal equipment (PPE) was a priority. However, with ongoing release of information, it became apparent how critical a role PT is to optimize pulmonary hygiene and functional outcomes. The purpose of this case study is to describe a patient with COVID-19's therapeutic course, from ICU to step-down unit.

Case Description

Patient is a 63-year-old male who was admitted to the hospital with fever, cough, and shortness of breath. He was diagnosed with COVID-19. The patient's past medical history was notable for hypertension, obstructive sleep apnea, and a body mass index of 33. PT was consulted hospital day 0. On hospital day 2, he transferred from the ward to ICU due to greater oxygen demands but continued to self-prone. On hospital day 8, the patient decompensated and required mechanical ventilation due to acute respiratory distress syndrome (ARDS). He became dependent for proning. While intubated, PT was discontinued by the medical team. On hospital day 20, the patient was extubated. PT was reconsulted. On hospital day 22, the patient developed a pneumothorax and required 2 chest tubes. When discharged from the ICU on hospital day 25, he returned on the same day. Two additional chest tubes were placed on hospital day 30. On hospital day 32, the patient successfully transferred out of the ICU. He was discharged to acute inpatient rehabilitation on hospital day 40.

Outcomes

Because of restrictive lung dysfunction, medical management, and bedrest, this patient developed severe ICU-acquired weakness (ICUAW). In the face of ICUAW, the patient received 20 PT visits, 14 of which occurred during his 30-day ICU stay. Initial PT interventions focused on range of motion, energy conservation, bed mobility, nursing education, and pulmonary hygiene. As medical status stabilized, the medical team valued PT and allowed both pre-oxygenation and increases in supplemental oxygen during activity to allow active patient participation and counter-act desaturation. Upon transfer to the step-down unit, the patient progressed functional mobility to ambulation. Ongoing education on respiratory training, dyspnea, and the importance of mobility throughout the day proved crucial. The AMPAC "6-Clicks" was used to track patient's functional progression.

Discussion

This case report highlights the successes and challenges of rehabilitation post severe ARDS as a result of COVID-19. ARDS, COVID-19, and ICUAW produced a catastrophic presentation with respiratory function, skeletal muscle, and functional mobility impairments. This led to severe activity intolerance, which was addressed with inter-professional collaboration, effective and efficient communication, and education about the importance of progressive mobility. Challenges included availability of PPE for allied health care providers and de-saturations during PT. Lessons learned include understanding the pathophysiology of COVID-19 and acute respiratory distress syndrome, PT advocacy, and the importance of inter-professional collaboration and education to optimize patient outcomes.

POSTER PRESENTATIONS

Reliability and Agreement of Scapulothoracic Motion Measurement Using Inertial and Magnetic Sensors

Presented By

Amanda Clarke, SPT // Steven K. Bullen, SPT // Simone Fisher, SPT // Fernando S. Huerta, SPT // Bryan A. Spinelli, PT, PhD

Background

Shoulder disorders may result from aberrant or compensatory scapulothoracic motion. Therefore, accurate quantitative measures of scapulothoracic motion are essential to identify those at risk of shoulder disorders and guide interventions. Traditionally, non-invasive measurement of 3-dimensional scapulothoracic motion has involved use of costly and cumbersome optoelectronic or electromagnetic systems (EMS). Low-cost, portable inertial and magnetic units (IMU) have been recently used to measure scapulothoracic motion; however, demonstrated less than acceptable agreement with an optoelectronic system. The use of a scapular tracker may address offsets seen with previous IMU protocol. The scapular tracker aligns with bony landmarks of the scapula resulting in accurate anatomical axes to describe motion.

Purpose

(1) Assess agreement of a new protocol for measuring scapulothoracic motion using IMU with scapular tracker; and (2) evaluate between-day reliability.

Methods

15 subjects with/without history of shoulder pain underwent 2 testing sessions 7-14 days apart. Kinematic data were asynchronously collected using 2 set-ups (EMS and IMU with scapular tracker) while subjects performed 5 repetitions of shoulder elevation in the scapular plane. Following data collection, kinematic data were reduced and processed using The MotionMonitor and customized Labview (National Instruments Corporation, Austin, Texas) programs. Scapulothoracic motion was described by the following rotations: internal rotation (IR), upward rotation (UR), and anterior tilt (AT). For between day reliability and error, intraclass correlation coefficient (ICC 3,3) and standard error of measurement (SEM) were calculated for absolute position and range of motion (absolute position – resting value) at 30°, 60°, 90° and 120° of humeral elevation. For agreement between IMU and EMS protocols, RMSE values were calculated.

Results

ICC and SEM values for position data ranged from 0.14 - 0.71 and 2.3° – 13.2°, respectively. ICC values for range of motion (ROM) ranged from 0.76 - 0.94 and SEM values ranged from 0.5° – 3.9°. RMSE values for agreement between EMS and IMU systems ranged from 5.3° to 15.8°.

Conclusion

Our study found good to excellent between-day reliability for scapulothoracic ROM at all levels of humeral elevation. However, between-day reliability for position data was poor to moderate. Greater measurement error was found for IR compared to AT and UR. Possible sources of error include sensor placement and the calibration process used to define the anatomical coordinate systems. IMU showed acceptable agreement with the EMS system for UR at angles less than 120° of elevation. Greater amount of AT and IR were found when measuring scapulothoracic motion using IMU compared to EMS. Lack of agreement between IMU and EMS may be explained by differences in methods used to define anatomical coordinate systems.

Clinical Relevance

Objective and reliable assessment of scapulothoracic motion is essential to identify those with aberrant scapular motion and derive optimal plans of care for patients with shoulder disorders. IMU systems with the application of a scapular tracker show good promise for measuring scapulothoracic ROM in the clinic as an easy to use, cost effective method of objectively measuring scapulothoracic motion.

POSTER PRESENTATIONS

Addressing Opioids in Western Pennsylvania: Education and Advocacy Through Physical Therapy

Presented By

Norman L. Johnson, PT, DPT, DEd, MSS, MBA // Rebecca J. Shakoske, PTA, LMT, BA, MA // Carol J. Stokes, PTA // Jeanine L. Bedner, BA, SPTA // Ashley M. Evans, BS, SPTA // Melissa Sell, SPTA // Reilly Sullivan, SPTA

Purpose/Hypothesis

The purpose of this study was to determine whether opioid education would increase awareness of opioid use/abuse and opioid related resources with levels one and two student physical therapist assistants (SPTAs) at the Community College of Allegheny County (CCAC). One of the most common reasons people seek medical attention in the United States is pain and opioids are often their first exposure to pain management. Evidence shows that opioids are highly addictive and ineffective in reducing or eliminating pain, thus lengthening the time a person may take prescribed opiates. Patients may abuse prescription opioids or turn to illicit opioid products when the prescribed dosage no longer reduces their pain or when prescriptions end. In 2016-17, Pennsylvania ranked third highest in opioid related deaths in the United States behind West Virginia and Ohio. From August 2017 to August 2018, Pennsylvania reported 4,572 opioid related deaths. Therefore, it is imperative for regional and national health care providers to be educated on opioid related overdose and death; advocate for more effective and accessible alternatives for pain management and for providers to obtain opioid related first aid training. However, opioids and Naloxone training were only recently addressed by the American Physical Therapy Association (APTA) with the #ChoosePT campaign and the House of Delegates RC 62-19.

Subjects/Materials/Methods

Thirty-four first year and 10 second year SPTAs were invited to participate in the study during the Fall 2019 semester; 31 total students completed the entire study. The students were given a pre-instruction survey, opioid related instruction and training, and a post-instruction survey to identify the change in awareness of opioid related topics. Instruction included a lecture on opioids, the history of the opioid crisis, recognizing signs/symptoms of opioid abuse, ethics, and naloxone administration training. The anonymous pre- and post-survey consisted of a 12-item survey that utilized quantitative and qualitative questions. The quantitative data were analyzed using simple statistical software. The qualitative data were analyzed using manual structural coding. The pre- and post-survey data were analyzed for improvements of aggregate scores. The research study was approved by the CCAC Office of Sponsored Programs & Research/Institutional Review Board Reference code CCIRB080919NJ.

Results

There were 44 completed pre-surveys and 31 completed post-surveys. The participants reported 52% knowing someone who uses opioids. Participants demonstrated a 30% increase in comfort with providing alternative pain management information, a 30% increase in comfort in providing resources to opioid users, a 68% increase in knowing where to find Naloxone in the event of an overdose. Qualitative data included a shift from patient-blaming to compassion and an understanding of the complexity of the opioid crisis and its potential solutions. Across all questions, participants showed an increased awareness of opioid use/abuse and opioid related resources.

Conclusions

Opioid literacy in physical therapy education and practice is paramount and complements the APTA mission statement, APTA Ethics documents for PTs and PTAs, and the APTA House of Delegates RC 62-19. This study, while limited in size, indicates that education yields potential to improve awareness of opioid use/abuse and resources to effectively respond when appropriate. Future studies should consider a larger sample size and include clinicians and student physical therapists.

Clinical Relevance

Physical therapists and physical therapist assistants work extensively with patients experiencing pain. Since the 1980's, patients are more likely to have experienced opioids as a first-line pain management method. PTs and PTAs with a clear understanding of opioids, opioid use/abuse, opioid related overdose and naloxone administration will be more prepared to provide opioid related first aid and advocate for alternative methods of pain management.

POSTER PRESENTATIONS

Current Clinical Practice for Idiopathic Toe Walking: A Survey of Pediatric Physical Therapy Clinicians

Presented By

Suzanne F. Migliore, PT, DPT, MS, PCS // Kelly M. Angelucci, SPT // Helena J. Brutschea, SPT // Jessica L. Kaplowitz, SPT // Colin T. McLaughlin, SPT // Morgan R. Shade, SPT // Tara M. Vitale, SPT

Purpose

Idiopathic toe walking (ITW) is a diagnosis of exclusion in the pediatric population characterized by absence of heel strike in the gait cycle where no other neurological or physiological disorders are present. Although there are multiple interventions for ITW, there is a lack of evidence for treatment frequency, length of episode, and parameters for follow-up care to ensure the idiopathic toe walking has stopped. There is no published clinical practice guideline (CPG) for ITW to date, making clinical decision making for pediatric clinicians difficult. The purpose of this study was to investigate the variability in the reported practice of pediatric physical therapy clinicians in the interventions, outcome measures, and treatment dosage for children with ITW.

Methods

A national survey was sent via an electronic newsletter to pediatric physical therapists and physical therapist assistants from the APTA Academy of Pediatric Physical Therapy. The survey was conducted from November 1, 2019 to April 30, 2020. A follow up mailing to 1,000 randomized members occurred in March 2020. The survey consisted of 14 questions and incorporated demographic information, approaches to management of ITW through interventions, treatment frequency, length of episodes of care, and outcome measures. 357 survey respondents were required to reach power.

Results

Surveys were received from 194 academy members. Descriptive statistics and cross tabulations were run on all data. Chi-square tests were run to compare data between categories, with Fisher's Exact test run on variables with smaller cell samples. All but one of the respondents were physical therapists and 60 were board certified clinical specialists. The highest number of respondents practice in the northeast region and 64% of overall respondents practice in outpatient or hospital-based outpatient settings. Similarities by frequency of response were found within respondents were for treatment frequency (1x/wk), number of cases treated per year (2-5 cases), and length of episode (6 months). Across respondents, the most common interventions were strengthening, therapeutic exercises/activities, and balance training. Daytime orthotics were utilized by 63% of respondents, the most common being articulating ankle foot orthoses (AFO). The most common outcome measures chosen were passive range of motion, cessation of toe walking, and PDMS-2. Respondents scheduled a follow up visit 46.9% of the time, the most common timing being 3 months after discharge. Several significant relationships were found ($P < .05$) including the use of articulating AFO by region, nighttime bracing (by region, years of experience, and clinical specialists), 6-minute walk test and video gait analysis by years of experience, and length of episode in a hospital-based outpatient setting or by those using serial casting.

Conclusions

There is variability among respondents in length of episode, type of intervention, daytime orthotic chosen, and outcome measures. Significant relationships were found for several variables which may help develop clinical decision-making algorithms. The limitations of this study were a low response rate and not reaching power.

Clinical Relevance

Future direction includes incorporating evidence in the publication of a CPG to help guide pediatric clinicians in the areas of treatment frequency, length of episode, interventions, and outcome measures.

POSTER PRESENTATIONS

Five Time Sit to Stand Outcome Measure in Acute Care Patients Diagnosed with Coronavirus Disease (COVID-19)

Presented By

Carla D'Urso, PT, DPT

Purpose/Hypothesis

Physical Therapists were consulted for patients diagnosed with COVID-19 in acute care hospitals due to profound deconditioning and decreased endurance impacting functional mobility. Due to the novelty of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), there is minimal literature on functional outcomes measures in this population. This research is to further understand the impact of COVID-19 diagnosis on debility by assessing sit to stand functional transfers. Patient's admitted to the hospital with COVID-19 were found to display increased time to perform functional mobility in a modified Five Time Sit to Stand (5TSTS). The purpose of this study is to analyze 5TSTS outcome measures in patients diagnosed with COVID-19 and determine whether variation exists when compared to age related normal values.

Subjects/Materials/Methods

Thus far, twenty patients are included in the cohort. Data collection on patients diagnosed with COVID-19 and with a physical therapy (PT) consult started in May 2020 and is currently ongoing. Anticipated data collection to be completed by June 2020. Patients were considered appropriate when the following criteria were met: Diagnosis and hospital admission with COVID-19, ability to perform sit to stand transfer, and a consult order for PT. Patients were ineligible if unable to attempt to stand. Outcome measures include a modified 5TSTS with results in seconds. The 5TSTS is a functional transfer measurement of length of time to perform five sit to stand trials from a chair. Deviations to the 5TSTS were made due to COVID-19 personal protective equipment guidelines and to minimize exposure of equipment entering and leaving patient rooms. Deviations include: Using a hospital recliner chair, use of upper extremities due to severity of deconditioning, and using a wall clock for time measurement.

Results

Twenty patients were included thus far with ages ranging from 28-87 years old with a mean age 61.55 years and standard deviation 16.0 years. Demographic gender included 13 females and 7 males. Of the twenty patients included thus far, twelve completed the modified 5TSTS. Of the twenty, seven patients attempted to complete the assessment but required physical assistance resulting in a 0 score. Also, an additional patient did not sit after the fifth stand resulting in a 0 score. Preliminary results show a mean score of 49.8 seconds, median score of 35.5 seconds, and a standard deviation of 37.2 seconds. Results and analysis anticipated to be completed after completed data collection.

Conclusions

Thus far, the early results have shown an increased time to complete the 5TSTS in those diagnosed and admitted to the hospital with COVID-19. Furthermore, more than half of the patients eligible to assess scored a 0 on the 5TSTS. COVID-19 affects patient's strength related to the ability to complete functional transfers.

Clinical Relevance

This study provides preliminary information on the use of the 5TSTS in patients diagnosed with COVID-19 receiving acute care physical therapy. There is early indication and importance of early mobilization and increasing physical therapy consults in COVID-19 patients due to deconditioning.

POSTER PRESENTATIONS

Unmasking Changes in Delivery of Acute Care Physical Therapy During COVID-19

Presented By

Alexander Arrow, PT, DPT // Katherine Joyce, PT, DPT

Background/Purpose

To meet the evolving and unique demands of the COVID-19 patient population, the delivery of acute care therapy required adjustment. To minimize exposure and save valuable inpatient resources, there is an emphasis on discharging as many patients home as possible. The purpose of this project is to use a case-based approach to illustrate differences in frequency of sessions, plan of care, and discharge planning to facilitate safe discharge for these critically ill patients.

Case Description

Two patient cases with a diagnosis of SARS-CoV-2 were obtained from a large, academic hospital. Patient one is a 52-year-old female with end stage renal disease and diabetes admitted with shortness of breath and cough. Her 20-day hospital stay included five days in the ICU for acute hypoxemic respiratory failure. Though initially requiring moderate assistance for mobility, with increased frequency of therapy the patient progressed to discharge home. Patient two is a 66-year-old male admitted with COVID-19 and multifocal brain infarcts resulting in strength, motor planning, and cognitive deficits. Due to the above impairments, patient two was discharged to acute rehab after an 11-day hospitalization.

Outcome

Patient one received 10 therapy sessions over 17 days, including six in the final nine days after ICU stay (67%). From ICU stay to discharge, AMPAC scores increased from 11 to 18, progressing from moderate assistance of two persons to supervision. Patient two received six therapy sessions over 11 days (55%) with AMPAC scores ranging from 6 to 8, progressing from maximum assistance to moderate assistance of two for transfers. PASS improved from 9/36 at admission to 15/36 at discharge.

Discussion

These cases highlight the shift in frequency and prioritization of therapy in the acute care setting during the COVID pandemic. A COVID therapy team was created, providing the ability to adjust care plans and increase therapy sessions for patients as needed. Decreased overall hospital census allowed us to increase the therapist to patient ratio in this population without hindering care to other patients. Having a specific group of COVID therapists also minimized risk of exposure to other staff and patients. Outside the COVID population, patients similar to patient one receive 1-3 sessions per week; patients admitted with a stroke are seen for 4-5 sessions per week. As these cases illustrate, frequency of therapy was increased to facilitate safe discharge home, especially in patients progressing in mobility and having sufficient family support. Patient two presented with significant deficits that would require post-acute rehabilitation. He was not a candidate to progress to discharge home during his acute care stay, despite the fact that his hospitalization was extended due to post-acute facility admission and testing policies. By recognizing patients with the opportunity to progress functionally in the short-term and adapting plans of care accordingly, physical therapists in acute care are playing a vital role in facilitating safe discharge of this patient population.

POSTER PRESENTATIONS

Clinical-Community Connections: Partnering for Sustainable Outcomes

Presented By

Jennifer Sidelinker, PT, DPT // Jennifer Brach, PhD, PT // Colleen Hergott, PT, MEd, DPT // Beth Rohrer, PT, DPT // Lori Schrodt, PT, PhD // Kathy Shirley, PT, DPT // Tiffany Shubert, PT, PhD // Jennifer Tripken, EdD, CHES // Jennifer Vincenzo, PT, MPH, PhD

Purpose

The establishment of clinical-community partnerships to create a continuum of care provides significant value to the profession of physical therapy and the patients we serve. Community providers offer researched and validated evidence-based health promotion programs (EBHP) at senior centers, YMCAs, etc. These programs are designed to improve health and well-being by reducing disease severity, disability, and/or injury among older adults. However, PTs and PTAs have limited knowledge of these programs and partners. To address this gap, the National Council on Aging (NCOA) partnered with APTA Geriatrics to create a Task Force. The purpose of the poster presentation is to describe education and dissemination efforts and plans for the physical therapy community, community-based providers and patients about the value of these programs, how to build partnerships, and how to create a continuum of care to achieve and sustain improved outcomes.

Description

In 2019 APTA Geriatrics formalized a Task Force and signed a Memorandum of Understanding with the NCOA. The goals: 1) Promote physical therapist's recognition of and referral to EBHP as a component of clinical care; and 2) Promote community provider's understanding of the role of physical therapy in health and wellness. Efforts have focused on developing education and resources to help physical therapists understand the role and value of these programs, and provide guidance for starting and sustaining these partnerships.

Summary of Use

The mission of the Task Force is "all physical therapists, regardless of practice setting, understand the benefits of evidence-based programs, the value of building a continuum of care, and their role in population health." The Task Force has created materials specifically to educate physical therapists about the value of community-based programs and services, strategies for partnership, and the business case. We have discovered that far more physical therapists understand the value of a continuum of care than those who actually build them. We will share evidence of this through summary analysis of survey data. The Task Force has disseminated education deliverables and engaged diverse stakeholders through multiple access points to identify and address roadblocks, disseminate information broadly, and facilitate "hardwiring" into physical therapist education and practice.

Clinical Relevance

Successful management of chronic health conditions (i.e., fall risk, frailty, diabetes, arthritis, hypertension, and lung disease) requires a paradigm shift in care delivery for older adults. The mission of APTA Geriatrics includes "building a community that advances the profession of physical therapy to optimize the experience of aging". Developing clinical-community partnerships is critical to building such a community.

The profession of physical therapy is strategically positioned to leverage resources in the community to support patients to continue their progress after an episode of care. PTs and PTAs who develop community partnerships can have a significant impact on individual and population health and prevent the need for costly and avoidable health care services. Realizing the Task Force mission will help demonstrate increased value of physical therapy, by promoting care delivery that includes collaborative partnering across the continuum to ensure sustainable outcomes at the lowest cost.

POSTER PRESENTATIONS

The Effects of a Lower Extremity Injury Reduction Program for Men's Collegiate Soccer Players: A Retrospective Study

Presented By

Kelley Moran, PT, DPT, ATC, EdD // Sean Luzzi, SPT // Nicole Palanza, SPT // Tristan Snyder, SPT

Background and Purpose

Higher rates of lower extremity (LE) non-contact injuries have been reported for soccer athletes. Prehabilitation has been shown to decrease the number and severity of LE injuries and time missed from practice and games in elite soccer players. In 2016 a student physical therapist working with the soccer teams noted a large number of LE injuries for the Men's soccer team and implemented a prehabilitation program. The program was an adapted form of the FIFA11+ program. It consisted of 2, 30-45-minute sessions per week, during the traditional fall season and the non-traditional spring season. Student physical therapists were present at each session to direct exercises, correct form, and offer feedback to student-athletes. The purpose of this case report was to determine if the implementation of the prehabilitation program was effective in decreasing LE non-contact injuries during the 3 years the program was carried out, compared with the 3 years preceding implementation.

Case Description

Deidentified data on LE injuries were requested from the athletic trainer for 6 years: (2014-2016) before the prehabilitation program was implemented and (2017-2019) post implementation of the program. A total of 120 subjects were included in the data set which included total number of injuries, knee, hip, and ankle injuries, other LE injuries, games missed and days of practice missed. A Chi Square test was used to analyze pre and post implementation data, and is reported with means, SD, and 95 % CIs in the Results section.

Outcomes

Findings of this study support the findings of previous studies in that implementation of an injury reduction program showed a statistically significant decrease in the number of ankle and knee injuries, and days missed from practice and games. Unique to this study, there was a slight increase in the overall number of reported injuries following implementation of the injury reduction program. These injuries included one hip injury and 5 injuries that fell under the "other" category including a stress fracture of a lower leg, a metatarsal strain and three hamstring strains. The greatest reduction of injuries occurred during the first year of implementation, when the program was overseen by the designer of the program.

Discussion

A well designed and supervised injury reduction program appears to be beneficial for soccer players, decreasing the number of LE joint injuries, as well as time missed from games and practice. Consistency in supervision and instructions may help improve outcomes.

Limitations: The sample size and age range of subjects make generalizability difficult. Since data was self-reported by athletes to the University, the number and type of injuries, as well as time lost may be over or under reported. Data for 2014-2015 may be incomplete as data collection was interrupted by the Covid-19 pandemic. This may alter the statistical findings slightly.

Clinical Implications: A well designed and supervised injury reduction program may help to keep athletes active for competition and practice. It may also be cost saving for a University and athlete, and may decrease the burden on the healthcare system.

POSTER PRESENTATIONS

Physical Activity in Hematologic Cancer Survivors: A Secondary Analysis of the Nation Health Information Survey

Presented By

Claire McCann, PT, DPT // Christine Chevalier, DHSc, MPH (CPH), MS, CSSGB, CPC

Purpose

The purpose of this study was to describe how many hematologic cancer survivors living in the US meet current physical activity guidelines and whether a correlation exists between having dependent children at home and meeting the combined physical activity guidelines.

Methods

A secondary analysis approach was utilized using the publicly available 2018 National Health Interview Survey (NHIS) data. The NHIS is conducted annually by the US Census Bureau to provide cross-sectional health trend data for the US population. Survey responses for all 155 hematologic cancer survivors who participated in the 2018 survey were extracted from 25,417 cases and included in the analysis. Ethical approval was received from Nova Southeastern University IRB.

Results

The mean age of participants was 62.83 years (SD 16.32), 51% were male and 49% female. Only 11/155 (7.1%) met both the aerobic and strength components of the guidelines, 25/155 (16.1%) the aerobic component, and 35 (22.6%) the strength component. Fisher's Exact Test did not find a significant correlation between having children at home and meeting the combined guidelines ($p=0.06$).

Conclusions

Fewer than expected hematologic cancer survivors are meeting current physical activity guidelines. Using NHIS data, National Cancer Institute estimates that 16.7% of all cancer survivors in the US meet the exercise guidelines compared to just 7.1% in the current study specific to hematologic cancer survivors. This study indicates that hematologic cancer survivors may be affected by barriers to exercise more than survivors of other types of cancer. Further research should investigate whether guideline adherence varies based on cancer type and what barriers to physical activity exist specifically for hematologic cancer survivors. This study was underpowered to examine whether there is a link between having children at home and not meeting the combined physical activity guideline as was found in a prior study of Canadian hematologic Cancer Survivors. It is recommended that further research is undertaken regarding a possible correlation between hematologic cancer survivors meeting the guidelines and having children at home.

Clinical Relevance

Survival rates for the most common hematological cancers are improving. Exercise has been demonstrated to ameliorate the negative sequelae of hematologic cancer and its treatment. Despite the publication of national physical activity guidelines, many cancer survivors are not meeting those guidelines and are therefore missing out on the positive effects of exercise on quality of life in survivorship. This study suggests that hematologic cancer survivors may face greater barriers to exercise guideline adherence than other cancer survivors and lends weight to ongoing discussions regarding the need for comprehensive oncology rehabilitation programs. Physical therapists in all practice settings should screen hematologic cancer survivors for physical activity levels and barriers to participation in exercise. Health care providers should provide promote knowledge of exercise guidelines for hematologic cancer survivors and advocate for increased access to comprehensive oncology rehabilitation programs.

POSTER PRESENTATIONS

Perceptions of PTA Program Directors on the Preferred Length and Degree of Entry-Level PTA Educational Programs

Presented By

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Purpose/Abstract

There has been much discussion over the past two decades regarding the appropriate length and degree level for physical therapist assistant (PTA) educational programs. PTA educational programs have remained at the associate degree level for 50 years, while entry level physical therapist educational programs transitioned to the master's then doctoral level. There has been minimal research regarding which degree model PTA Program Directors feel is the most appropriate for entry-level PTA education. The purpose of this study was to determine the perceptions of PTA program directors on different entry-level degree models for PTA educational programs.

Number of Subjects

183

Materials/Methods

The participants of this survey were PTA Program Directors at CAPTE accredited entry-level PTA educational programs. An email with a survey link (SurveyMonkey) was sent to all 369 PTA Program Directors at accredited PTA Programs (there are 371 PTA Programs housed within 349 institutions, with some directors being the director of more than one program within an institution) during the 2019 spring semester. Email addresses were obtained from a CAPTE online directory of accredited programs. A total of 183 surveys were returned for a response rate of 49.6%. The participants who volunteered to take the survey consented by their participation, which was explained in the first page of the survey. This study was approved by the Institutional Review Board of Northland and Community and Technical College in East Grand Forks, Minnesota. The survey consisted of questions asking participants' institutional and individual demographics; their perceptions on the preferred length and degree model of PTA Education; their perceptions regarding issues related to a potential transition to an entry-level bachelor's degree model; and their past and potential future concerns regarding their programs. Descriptive statistics were used to present the participants' responses to the demographic and content questions. Independent t-tests were used with a Type 1 error rate of 0.05 to determine associations between variables.

Results

Subjects were asked their preference regarding the preferred length and degree for entry-level PTA Educational Programs. 17.% of subjects preferred to keep programs at their current maximum length of five semesters and at an associate level; 28.4% preferred to keep programs at an associate degree level, but to allow programs to choose their own program length; 29% preferred to allow programs to choose their degree (associate or bachelor's) and length; 23% preferred to require all programs to be at a bachelor's degree level; and 0% preferred to decrease the length of programs.

47.5% of subjects stated that the current length of entry-level PTA programs was inappropriate. Program directors at institutions which can grant a bachelor's degree were more likely than program directors at institutions which cannot grant a bachelor's degree to state that the current length was inappropriate ($p < .001$).

POSTER PRESENTATIONS

Perceptions of PTA Program Directors on the Preferred Length and Degree of Entry-Level PTA Educational Programs (cont.)

Results (CONT)

61.7% of subjects stated that the expected cognitive load of PTA students is inappropriate for an associate degree. Subjects at institutions which can grant a bachelor's degree were more likely than subjects at institutions that cannot grant a bachelor's degree to state that the cognitive load is not appropriate for an associate degree ($p, .001$).

Subjects were asked to rank 19 statements regarding the importance of transitioning PTA Education to a bachelor's degree model as well as concerns regarding a bachelor's degree transition on a 4-point Likert type scale. The most important reasons for a transition to a bachelor's degree model were a potential positive effect on reimbursement; providing additional time to prepare students; and a potential increase in respect of the PTA position. The most important concerns regarding a bachelor's degree transition were increased student loan debt, no increased salary for PTAs; and the ability of institutions currently housing entry-level PTA Programs to award a bachelor's degree. Inferential statistics regarding differences in these statements between subjects at public and private institutions; as well as for subjects at institutions that can and cannot grant bachelor's degrees will be presented.

Conclusions

A majority of surveyed PTA program directors stated that the cognitive load within PTA educational programs is inappropriate for an associate degree, but that the current length of entry-level PTA educational programs is appropriate. There was no clear consensus for a preferred entry-level program length of surveyed PTA program directors, with more research needed to determine other related factors regarding PTA program length and degree model. The most important statement regarding a transition to a bachelor's degree was a potential positive impact on reimbursement for services performed by PTAs, while the most important concern was impacts on student loan debt.

Clinical Relevance

With the increasing demands placed on physical therapist assistants to be highly functioning and productive at career entry, educators are often faced with the challenge of developing the most efficient way to prepare their students to be effective members of the PT-PTA Team within the confines of an associate level degree. The depth and breadth of entry-level PTA curricular content have continued to increase as evidenced by increasing curriculum expectations within the CAPTE Standards and Elements, as well as within the FSBPT Practice Analysis and NPTE-PTA blueprint. Continued investigation of the appropriate PTA degree level must be considered to ensure the necessary skills are covered and the student is awarded the appropriate degree reflective of the content and expectations necessary to meet dynamic societal health care needs.

POSTER PRESENTATIONS

Robot-Based Evaluation of Motor and Cognitive Impairments Living with HIV and HIV-Associated Stroke

Presented By

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Purpose/Hypothesis

There are nearly 37 million people with living with HIV (PLHIV) worldwide. As the HIV population ages due to the success of antiretroviral therapy, the challenges of managing HIV have shifted to dealing with the chronic effects including neurological impairments. HIV is an independent risk factor for cardiovascular disease with an incidence rate of 3.87 per 1000 years lived, CVDs occur at an average age of 48 years in the HIV population. These numbers are 1.5 times higher and 22 years younger than the general United States population. Given the range of impairments that are present in the HIV population, objective measures of both cognitive and motor function are important to quantifying the severity and type of impairment. Current clinical assessments do not correspond well to subtler impairments in cognition and motor performance and generally have not been reliable indicators of HIV-associated neurocognitive disorders. Our purpose is first test that robot-based metrics can differentiate subjects with and without executive function or upper-limb motor impairments. The second and third hypotheses are that a linear combination of robot-based metrics can estimate clinical cognitive scores as well as clinical motor scores.

Subjects/Materials/Methods

We conducted a cross-sectional study with 21 subjects (13 male, 8 female, average age 55.5 years old) in a population of adults living with HIV, including a subset with both HIV and stroke. Cognitive assessment consisted of the Color Trails, Digit Symbol Coding (WAIS®-III), Montreal Cognitive Assessment (MoCA), and International HIV Dementia Scale (IHDS). Motor assessment consisted of the Box and Blocks Test, Grooved Pegboard, and grip strength to assess dominant and non-dominant limb function. Robotic assessment used a Haptic TheraDrive, a one degree-of-freedom robot for upper limb stroke rehabilitation. Robot assessment measured performance on three robot-based task of Trajectory Tracking Motor Task, N-Back Cognitive Task, and Spatial-Span Cognitive-Motor Task.

The effects of cognitive and motor impairment on robot-based metrics were examined to test the hypothesis that robot-based metrics could differentiate subjects with and without executive function or upper-limb motor impairments. A cross-validated multiple linear regression analysis was used to test the hypothesis that a combination of robot-based metrics could estimate clinical cognitive and motor scores.

Results

No differences were observed between the HIV-only and HIV-stroke groups on clinical or robot-based scores. However, main effects of cognitive and motor status were observed in metrics derived from the cognitive and cognitive-motor robot tasks. Moderate to strong correlations were observed between actual clinical scores and scores predicted from various robot-based metrics.

Conclusion/Clinical Relevance

Robotic assessment of cognitive and motor impairment in PLHIV is feasible and demonstrates a relationship to established cognitive and motor clinical tests. Additional larger studies are warranted.