INTERDISCIPLINARY APPROACH TO ADAPTIVE SPORTS

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- We are employees of the Bruce Carter Medical Center Miami VA Hospital
- We are not affiliated with any companies spoken about during this lecture
- The equipment discussed is currently being used or has been used in the past
BACKGROUND: ALEX MAITRE

- Florida International University Graduate 2013 in Recreational Therapy
  - Certified Therapeutic Recreational Specialist (CTRS)

- Miami-Dade County Disability Services
  - Disability Program Specialist

- Mount Sinai Medical Center
  - Acute Inpatient Mental Health Provider

- Certified USA Boccia Coach

- Chapter Coordinator for TTR Miami

- Lead RT Adjunct faculty for UM Sports Residency Program

- Miami VAMC
  - SCI/D Service
    - Head Coach for Adapted Sports Program / Local and National Teams
    - Coordinator for Adapted Sports Clinics
    - Acquire Adaptive Sports Equipment Through Prosthetics
  - 4 years
BACKGROUND: SAMANDA VASQUEZ

- Florida International University graduate
  - DPT – Doctor of Physical Therapy
  - ATP - Assistive Technology Professional
  - KTCC- Kinematic taping concept certified
- Miami VA healthcare system
  - SCI/disorders Unit (MS, ALS)
  - Adapted SCI Sports Coach
  - Prosthetics and seating team for the National summer sports clinic
  - Adaptive Tai Chi Instructor
  - years
- Adjunct Faculty for the University of Miami, Sports Physical Therapy Residency
  - Adaptive Sports Concentration
OBJECTIVES

- Recreational Therapist role
- Physical Therapist role
- Proper seating and positioning for patients with spinal cord injury/disorder
- Interdisciplinary Approach
- Adaptive equipment for spinal cord injury patients in different sports
- Importance in developing a partnership with your local Recreational Therapist/Physical Therapist
- Setting up Interdisciplinary Adapted Sports Clinic
RECREATION THERAPIST ROLE IN ADAPTED SPORTS

- Program planning
- Building community partnerships
- Acquiring demo chairs
- Setting achievable goals by end of individualized adapted sport clinics
- Offer National/international events
- Sport specific Paralympic stipends for Veterans
- Offer opportunities for acquiring own adapted sport equipment
RECREATIONAL THERAPIST: ROLE IN ADAPTIVE SPORTS

Use recreation and sports as therapeutic intervention to provide treatment

Create and implement sports program around patients abilities

Understand what is meaningful to the patient

Identify risks for failure to adapt and adjust

- Pre injury
  - Tennis player
  - Cycling
  - Introduce variety if not familiar with sports

- Skin break down
- Overheating
- Rubbing on equipment
- Supplement Team treatment recommendations with sports
- Weight bearing on extremities

Current level
Future gains (if possible)
RECREATIONAL THERAPIST: GOALS

- Create and foster environment for growth
- Empower veterans for participation in local community and national events
- Enhance physical and mental capabilities
- Prevent secondary illness
- Improve self-worth and quality of life
- Reduce depression, anxiety, and episodes of PTSD
- Provide resources for increasing independence, social interaction, and community integration
- Identify which adaptation may be necessary
  - Does the patient qualify for their own equipment?
PHYSICAL THERAPY: ROLE IN ADAPTIVE SPORTS

Action Plan

- Initial evaluation / Treatment plan
- Seating and positioning
- Prevention
  - Musculoskeletal injury
  - Pressure injury
- Educate the others
- Classifications
BACK TO THE BASICS

- Wheelchair biomechanics
- Wheelchair skills
- Perfecting propulsion
  - Arc propulsion
  - Single loop over
  - Double loop over propulsion
  - Semicircular propulsion
SEATING AND POSITIONING

- Good seating will decrease risk of pressure injury
- Load areas than can tolerate loading
  - Femur
  - Glutes
- Off load areas that are at risk for pressure injury

Pressure redistribution (off-loading) by pre-contouring
SEATING AND POSITIONING

- Observe and problem solve
SEATING AND POSITIONING

- Static testing
- Dynamic testing
PHYSICAL THERAPIST: ROLE IN ADAPTIVE SPORTS

- Observe, modify, and adjust
  - Transfers
    - Analyze movement
  - Skin integrity pre/post
    - Have patient take pictures prior to and post activity
- Seating and positioning
  - Use adaptive equipment to offload boney areas and redistribute areas that can handle loading
HANDCYCLE TRANSFERS
Classification is the process by which athletes are assessed to determine the impact their impairment has on their ability to compete in a specific sport.

- Verification of the presence of an eligible impairment for that sport;
- Physical and technical assessments to examine the degree of activity limitation;
- Allocation of sport class(es); and
- Observation in competition
INTERDISCIPLINARY APPROACH TO HANDCYCLING

**PT**
- Identify limitation
  - Limited ROM
- Transfer training
- Provide proper seating to decrease risk of pressure injury
  - Add padding
- Provide assistive technology if needed
- Adjust cranks to decrease shoulder strain
- Diagnosis precautions
  - Educate others, teach patient to direct care
  - Provide first aid and quick adjustments
  - Assess on the spot if you suspect injury

**RT**
- Choose proper handcycle
- Modify cycle to patient
  - Leg supports
  - Back rest
  - Seat height
  - Hand crank length/height
- Weight shifts
- Create appropriate program
- Log progress towards goals
- Assess for comfort/skin
  - Body moves and feels different once riding as to being still
  - Use stationary stand if available (bike trainer)
- Monitor for breaks: SCI/MS
  - Heat
  - Fatigue (breaking up activity into blocks)
  - Complication with regulating body temperature
ADAPTATIONS FOR CYCLING
KNOWLEDGE OF EQUIPMENT AVAILABLE FOR PATIENTS

- Top End
- Carbon Bike USA
- Lasher Sports
- Quickie
- Per4max
- Aspen Seating System
ITEMS FOR EVENTS

Recommended Supplies:

- Basic tools
  - Phillips/screw driver
  - Allen keys
  - Pliers
  - Socket wrench
  - Tape measure
- Zip ties
- Lock tight
- Ace bandage
- Coban tape
- Duct tape
- Extra set of tires and inner tubes
- Tire adapters
  - Different wheels, different styles
- Tire pressure gauge
  - With true reading!
  - Don’t over/under inflate
- Air pump
- Don’t throw spare parts away!
**SEATING AND PROSTHETIC TOOLBOX**

- Sweetcheeks
- Extra FOAM pieces
- DUCT TAPE!!
- Velcro straps
  - Body point straps
- Sure grip gloves
- KT tape
- Gait belt
- Cutting tool
  - Knife
  - Scissors
- First aid kit
  - Tagaderm
COLLABORATE WITH YOUR LOCAL COMMUNITY

- Reach out to local universities
- Reach out to your local VA
- Educate and teach others
  - Seating and positioning
  - Proper transfers
  - Good body mechanics
Who is involved? Why them?

- Patient
- Physical therapist
- Recreational therapist
- Occupational therapist
- Physician/Physicians Assistant
- Wound care specialist
- Nurse
- Caregiver/ support system
- Vendor representative
Find a location big enough for testing with interdisciplinary team

Choose time/date

Make list of veterans/clients participating

Choose your team

Prepare forms

Get appropriate equipment

Delegate everyone’s duties
Interdisciplinary team of 4 providers
- Physician
- Nurse
- PT
- RT

Circuit took 8am-12am
- 28 Veterans

All forms complete
- Vitals
- Medical clearance
- ROM
- Waivers
- Education
  - Program Resources
  - Adapted sport clinics
RESULTS

- Decreased stress on all providers making drop-in visits
- More appointments available in clinic for more urgent issues
  - Wound care
  - Annual visit
  - Emergency cases
- Provide education/sport clinic resources
- Improve seating and positioning by asking skin history
RESULTS CONTINUED

- Research questionnaires on participation: emotional/physical
  - Pre
  - Post

- 100% acceptance for 2 National events
  - NDVWSC
  - NVWG

- Increased participation locally/national
  - Increased National participation- avg.19
  - Increased application per event due to ease of clinic- avg.25-28
CASE STUDIES

1. 2018 National Disabled Veterans Winter Sports Clinic, Veteran with T6 complete spinal cord injury has a bladder accident on long flight and does not report it until he arrives to seating clinic. When evaluated, veteran found with tissue injury due to sitting on moist environment.
   - Plan of action
     - Seating clinic
     - Wound care (called IDT)
     - Preventative measures were taken

2. 2018 National Veteran Summer Sports Clinic, patient had wound on left hand with 12 stitches. Having a wound and going to a water clinic is not recommended. Veteran was having increased difficulty with navigating both power wheelchair and holding leash for service dog. Service dog would gently pull leash and wound would re-open.
   - Plan of action
     - Move hand control to contralateral side to relieve wound from leash
     - Education and training for hand control was done in addition to decreasing speed
     - First aid/ Wound care
COMMUNITY RESOURCES AND USA PARALYMPIC PARTNERS

COMMUNITY ORGANIZATIONS

- MIAMI DADE COUNTY DISABILITY SERVICES
- CITY OF MIAMI DISABILITY SERVICES
- MIAMI BEACH ROWING CLUB (ROWING)
- MIAMI ROWING CLUB KEYBISCAYNE (DRAGON BOAT RACING)
- SHAKE-A-LEG MIAMI
- FIRST TEE MIAMI (MELRESSE GOLF COURSE)
- DIVE HEART (SCUBA DIVING)
- WOODY FOUNDATION
- SABRINA COHEN FOUNDATION
- USA BOCCIA
- INVACARE TOP END
- MARLINS AYUDAN
- ACHILLES
- OSCAR MIKE FOUNDATION
- VETERAN OCEAN ADVENTURES
- PARALYZED VETERANS OF AMERICA (FLORIDA)
- AMERICAN LEGION (AUXILIARY)
- SEMPER FI FUND
- WOUNDED WARRIOR PROJECT
- DISABLED AMERICAN VETERANS (DAV)
- OPERATION ENDURING WARRIOR
- CONNECTED WARRIOR
- WARFIGHTER SPORTS
- PGA HOPE
- ALLIED FORCES FOUNDATION
- WOUNDED WARRIORS IN ACTION FOUNDATION
- UNIVERSITY OF MIAMI
- FLORIDA INTERNATIONAL UNIVERSITY
Recreational Therapy and Physical Therapy collaborate
- Open adaptive sports clinics
- Refer your patients
- Get more involved
  - Advocate

Adaptive sports not only benefit the patient but also their caregivers allowing them to interact with other families in similar situations

“You get to fall in love with the sport you love all over again.”
To our amazing SCI Rehabilitation Team and our Veterans!
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