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OTD Capstone Symposia

Spring 4-14-2022

Occupational Therapy's Role in Upper Extremity Posture, Ergonomics, and Injury Prevention in Esports

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Recommended Citation

Singleton, B. W. (2022, April 14). Occupational Therapy's Role in Upper Extremity Posture, Ergonomics, and Injury Prevention in Esports. Poster presented at the Virtual OTD Capstone Symposium, University of St Augustine for Health Sciences. Retrieved from <https://soar.usa.edu/otdcapstones-spring2022/1>

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References

Occupational Therapy's Role in Upper Extremity Posture, Ergonomics, & Injury Prevention in Esports

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Mentor: Gwen Morris, OTD, OTR, CHT, CLT

BACKGROUND

Electronic sports, also known as esports, is organized competitive gaming (DiFrancisco-Donoghue et al., 2019). Esports athletes routinely sustain injury to the upper extremity (UE) and are forced into early retirement due to pain and limitation (Zwibel et al., 2019). Employing ergonomic principles through education has a significant impact in assisting with pain reduction and prevention of disability (Joseph et al., 2018).

PROBLEM

There is a deficit in tailored resources available for esports athletes to prevent upper extremity injury.

PURPOSE

To develop a posture & ergonomics education program to provide esports athletes with resources and opportunities for injury prevention.

Outcome objectives:

- (a) Develop an education type program for prevention of upper extremity injury in esports athletes.
- (b) Advocate for OT and the need for OT services in new domains.
- (c) Provide education of body mechanics to esports athletes.

METHODS

This program included instruction on upper extremity anatomy, posture, ergonomic strategy implementation, and implications of occupational participation.

Program Structure:

- Introduction – presentation/survey
- Quarter 1 – presentation/survey
- Quarter 2 – presentation/survey
- Quarter 3 – presentation/survey
- Quarter 4 – presentation/survey
- Program Conclusion – survey
- 16 participants invited
- 12 respondents to intro survey (100%)
 - Only respondents who completed this survey were included in the program.
- 9 respondents to Q1 survey (75%).
- 10 respondents to Q2 survey (~83%).
- 6 respondents to Q3 survey (50%).
- 6 respondents to Q4 survey (50%).
- 6 respondents to program feedback survey (50%).

Topics Covered:

1. Program goals & focus;
2. Expectation of participants;
3. Inclusion/exclusion criteria;
4. Link to occupational therapy;
5. Assessments;
6. Functional positioning;
7. Anatomy of head, neck & shoulder;
8. Anatomy of elbow & forearm;
9. Anatomy of wrist & hand;
10. Common esports injuries;
11. Preparatory techniques & exercises.

PROGRAM RESULTS

Functional Player Support (FPS)

General Program Goals:

1. Reduced pain levels.
2. Decreased ergonomic risk factors.
3. Increased mastery over immediate environment.
 - Increased knowledge of ergonomics.
 - Promote self-directed posture adjustments.
4. Increased health-conscious behaviors after program completion.
5. Increased quality of life.

Program Focus:

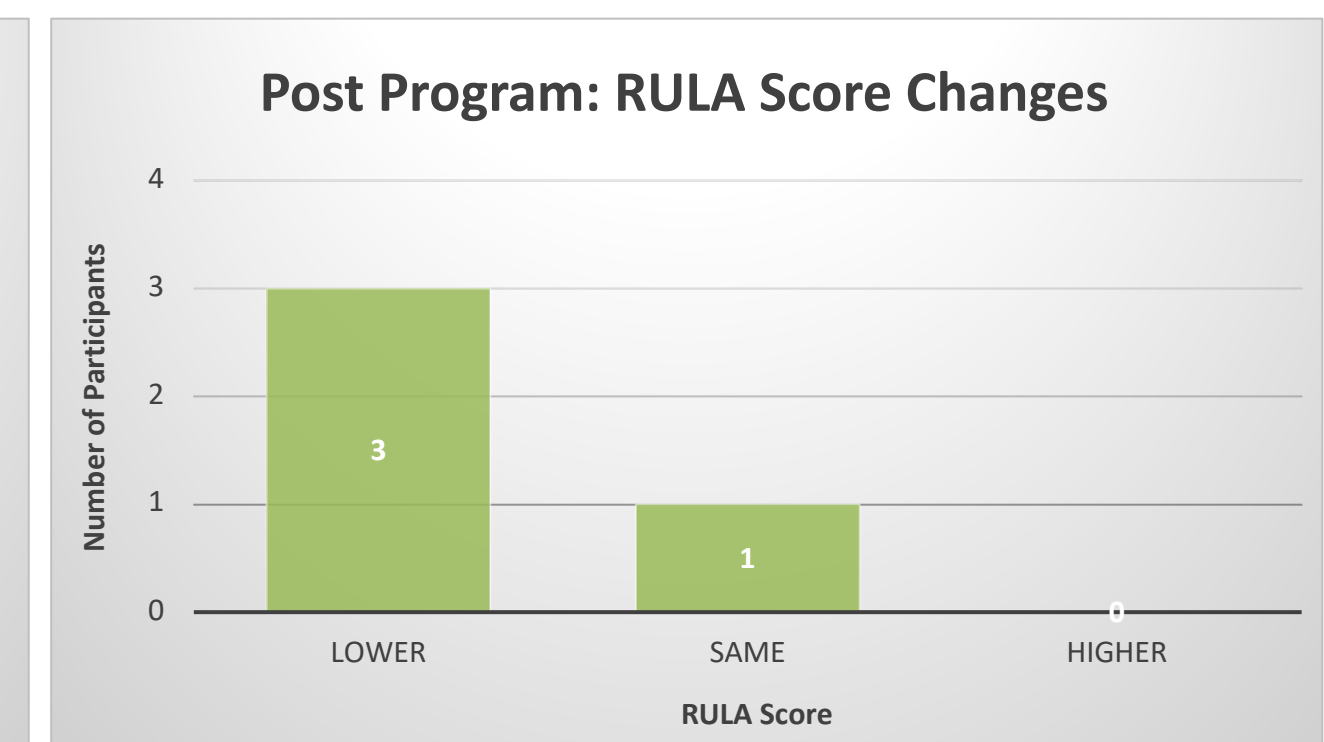
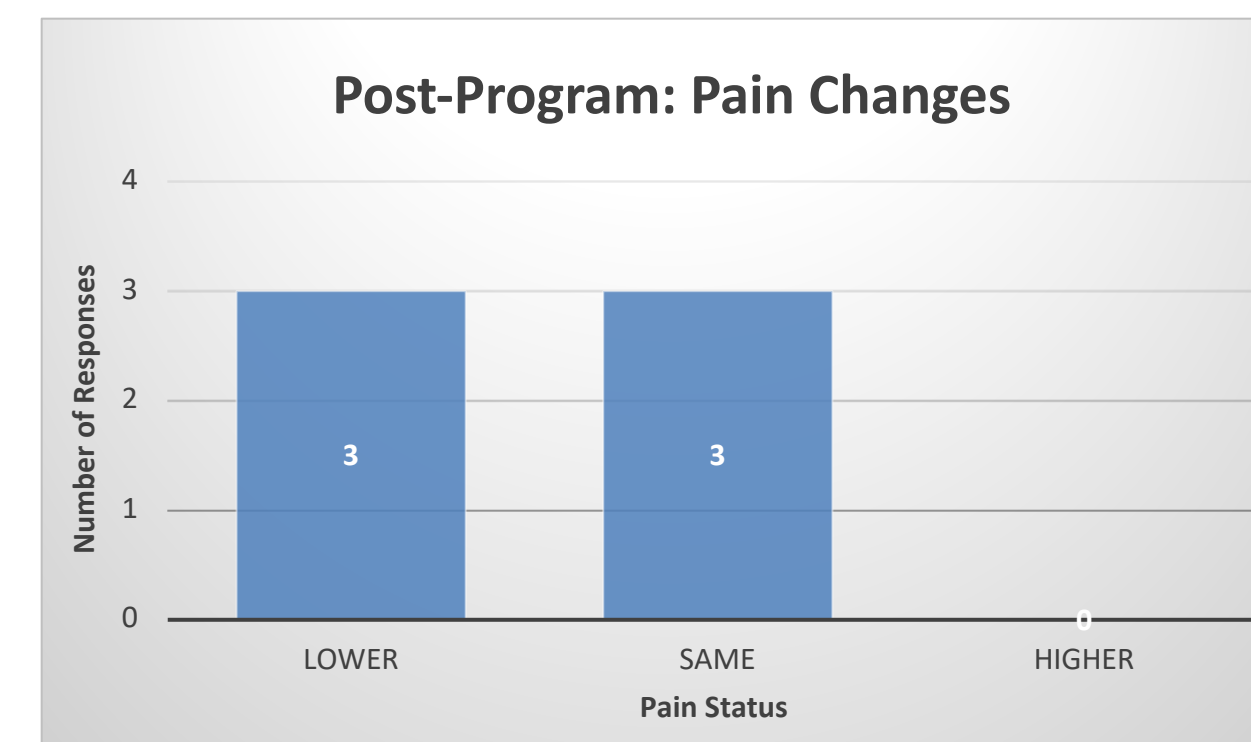
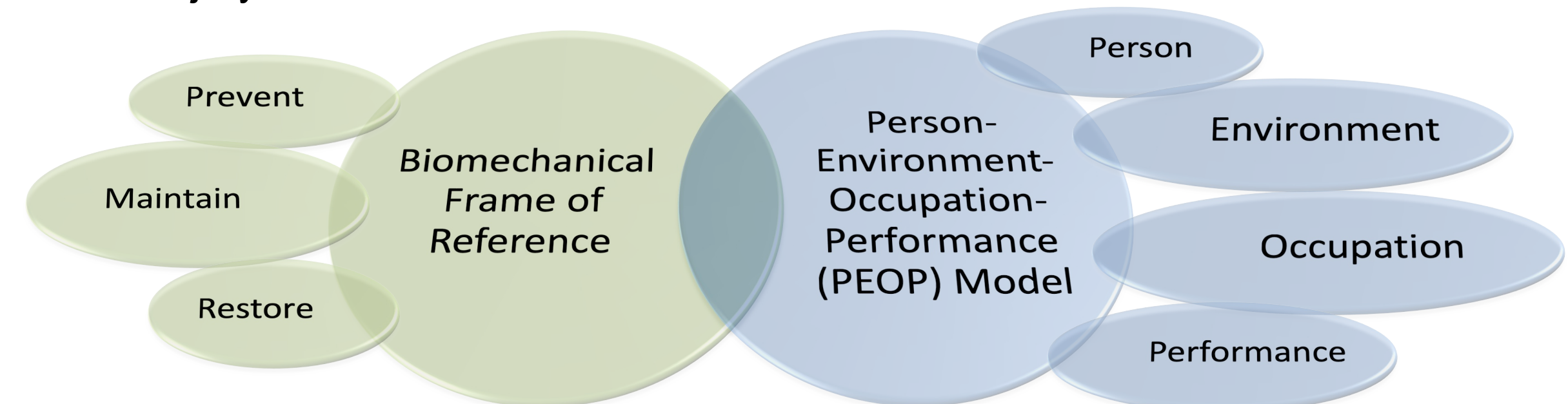
Primary focus on what the athlete can do now to reduce future potential chances for injury.

Interventions:

1. Instruction on upper extremity anatomy.
 - Nuances of each landmark.
 - Organized proximally to distally.
2. Education of mechanisms of injury and UE pathology.
3. Ergonomic strategy implementation.
4. Instruction on UE exercises to support Musculoskeletal (MSK) health & longevity.

Outcomes:

- Pain (Pain scales, 0-10)
- Ergonomic Risk (RULA)
- Mastery Over Environment (Surveys)



Acknowledgement: Special thanks to Gwen Morris, OTD, OTR, CHT, CLT