

A.T. Still University

Still ScholarWorks

OT Student Capstones

Occupational Therapy Department

2021

The Role of Occupational Therapy in a Multidisciplinary Outpatient Concussion Setting: Persistent-Post Concussion Symptoms

Lina Rivera
A. T. Still University

Follow this and additional works at: <https://scholarworks.atsu.edu/ot-capstones>



Part of the [Occupational Therapy Commons](#)

Recommended Citation

Rivera, Lina, "The Role of Occupational Therapy in a Multidisciplinary Outpatient Concussion Setting: Persistent-Post Concussion Symptoms" (2021). *OT Student Capstones*. 22.
<https://scholarworks.atsu.edu/ot-capstones/22>

This Capstone is brought to you for free and open access by the Occupational Therapy Department at Still ScholarWorks. It has been accepted for inclusion in OT Student Capstones by an authorized administrator of Still ScholarWorks. For more information, please contact mohammadaslam@atsu.edu.

Paulina Rivera, OTDS¹, Madison Harris, OTD, MA, OTR/L²,
Jyothi. Gupta, PhD, OTR/L, FAOTA¹, Christopher Giza, MD² & David L. McArthur, PhD, MPH²

¹Occupational Therapy, A.T. Still University, Arizona School of Health Sciences, Mesa, AZ
²UCLA Steve Tisch BrainSPORT Program, Los Angeles, CA

Introduction

Background Information

- The Center for Disease Control and Prevention (CDC) defines a concussion as "mild traumatic brain injury (mTBI) caused by a bump, blow or jolt to the head or by a hit to the body which causes the head and brain to rapidly move back and forth, resulting in chemical changes"
 - Estimated 1.6 - 3.8 million concussions are reported in the United States per year due to sports and recreational activities
 - Prevalent etiology: sports related accidents, motor vehicle accidents, falls, military injury and domestic violence
 - Earlier concussion management recommendations emphasized rest after a concussive event (Carson et al., 2014)
 - Recent studies shows individuals who have had a concussion should rest for 1 to 2 days after their injury and then slowly return incorporate graded return to activity (DiFazio et al., 2016; Brayton- Chung, 2016)
 - Symptoms secondary to a concussion may disrupt an individual's daily activities (occupations) including work, school, exercise and socialization
 - Occupational therapists (OTs) are trained in providing patient-centered interventions for graded-return to activity for concussion management
- #### Persistent-Post Concussion Symptoms (PPCS)
- Majority of patients who sustain a concussion recover within 10 days. 15-20% of individuals experience prolonged recovery longer than 10 days or suffer from persistent-post concussion symptoms (Brogolio et al., 2014; Cogan et al., 2014)
 - According to the DSM-V, persistent post- concussive symptoms have persisting symptoms 3 months after the precipitating concussion event. Most include at least 3 of the following: *headache, fatigue, dizziness, irritability, sleep disturbances, reduced concentration, sensitivity to light & noises, impaired memory, and decline in processing speed and concentration* 3 months after the TBI event (American Psychiatric Association, 2013)
 - Changes in mood and personality, a loss of sense of self and effects on one's mental health and cognition are commonly reported for individuals who sustained a concussion (Brogolio et al., 2014; Harmon et al., 2018)

Purpose

The purpose of this retrospective study is to explore the relationship between increased symptom burden in PPCS and role of occupational therapy in a multidisciplinary clinic. The author hypothesizes patients with increased cognitive symptoms after a concussive event are more likely to be referred to occupational therapy compared to those with less cognitive symptoms.

Methods: Participants

Inclusion Criteria:

- 18 years old and older
- Traumatic Brain Injury Referral
- Completed Graded Symptom Checklist (GSC) or Standardized Assessment of Concussion (SAC)
- Seen at UCLA BrainSPORT by a neurologist from July 2020— December 2020

Retrospective Chart Analysis

- 91 identified patients were deidentified and coded, and stored securely for HIPAA compliance
- Each deidentified patient's neurological concussion evaluation were analyzed and coded
- Deidentified patients were categorized into "referred to OT" & "not referred to OT" cohorts
- GSC symptoms were categorized in somatic, emotional cognitive and sleep categories

Graded Symptom Checklist Categories

| | |
|-------------------------|--|
| Somatic/Physical | Headache Pressure Neck pain Nausea or vomiting Dizziness Blurred vision Balance Sensitivity to light Sensitivity to noise Fatigue or low energy "Don't feel right" |
| Cognitive | Feeling slowed down Feeling in a fog Difficulty remembering Difficulty Concentrating Confusion |
| Emotional | More emotional Irritability Sadness Nervous or anxious |
| Sleep | Trouble falling asleep |



Results

Quantitative Analysis

- Patients who were referred to OT reported higher GSC scores in majority of the categories (somatic, cognitive, and total scores) than those who were referred not referred to OT
- Logistic regression did not demonstrate a significant outcome for increased total symptom load burden and probability of being referred to OT

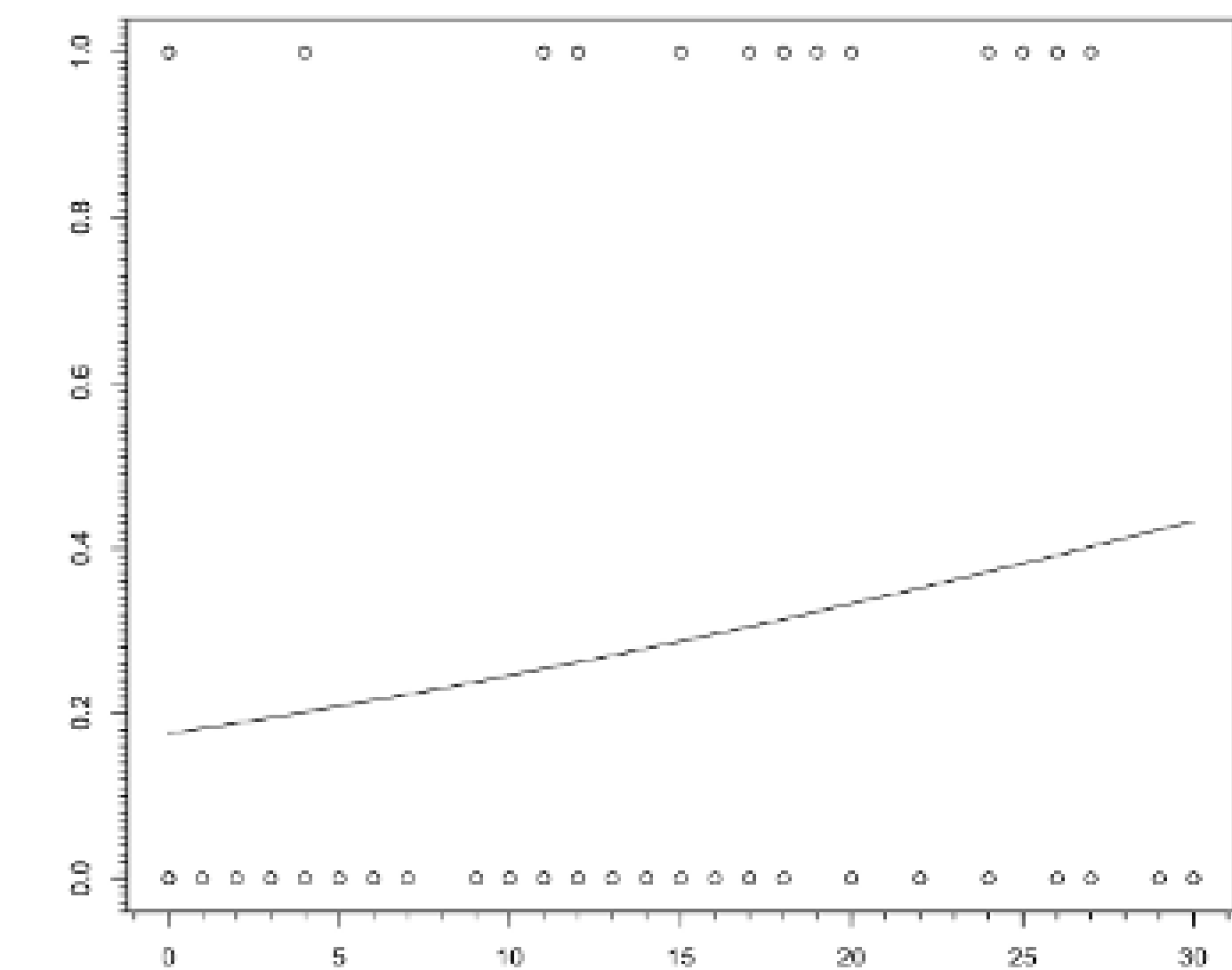


Figure 1 illustrates a plotted logistic curve for GSCognitive Symptoms.

- The logistic regression for cognitive symptom load and referral to OT demonstrated a modest trend, however, the trendline never reaches 50:50
- No significant differences between GSC and SAC scores

Implications for Occupational Therapy Practice

- Increase symptom load burden resulting in difficulty with participation in daily occupations
- Addition of occupational therapy practice to multidisciplinary concussion clinics provides more frequent and comprehensive concussion management treatment improving functional outcomes for graded return to activity
- OTs are trained to address physical, emotional, cognitive and sleep concerns through patient-centered therapeutic strategies and activity modification for graded return to activity
- Occupational therapy interventions approaches for return to work, school, sport/exercise or desired activity may include non-pharmacological symptom management, exercise protocols, mental health interventions, vestibular therapy, visual-ocular rehabilitation, cognitive rehabilitation and education, and lifestyle management
- Comorbidities are a significant factor in OT referral, concussion management and patient outcomes, OT
- Future studies can improve this study by expanding the timeline of the retrospective chart review, analyzing the pediatric population and determining the role comorbidities play in OT referral

Acknowledgements

The author of this study would like to thank the UCLA BrainSPORT team for their continued support and guidance with this occupational therapy doctorate capstone study.

IRB

The occupational therapy doctorate capstone study is supported and approved by UCLA A.T. Still's Institutional Review Board

Results

| | Referred to OT (n=23) | Not Referred to OT (n=68) |
|---|---|---|
| Number of Patients with Prior Concussions, Total** | 16 (69.6%) | 30.9 (44.1%) |
| Number of Patients with Other Comorbidities, Total Comorbidities | Headache= 9 Psychiatric Hx (anxiety/depression) = 16 Other Psychiatric Hx= 8 Learning Problems= 4 ADHD= 4 Sleep= 8 Other relevant medical Hx= 5 | Headache= 25 Psychiatric Hx (anxiety/depression) = 30 Other psychiatric Hx= 14 Learning Problems= 7 ADHD= 6 Sleep= 20 Other relevant medical Hx= 24 |

** Significant difference