

## Manuscript Title

Effects of Fatigue, Driving Status, Cognition, and Depression on Participation in a Chronic Sample of Adults with Traumatic Brain Injury

## Author(s)

Shannon B. Juengst<sup>1\*</sup>, Candice L. Osborne<sup>1</sup>, Kimberly S. Erler<sup>2</sup>, and Ketki D. Raina<sup>3</sup>

<sup>1\*</sup>Department of Physical Medicine & Rehabilitation, University of Texas Southwestern Medical Center, USA

<sup>2</sup>Department of Occupational Therapy, Massachusetts General Hospital Institute of Health Professions, USA

<sup>3</sup>School of Exercise and Rehabilitation Sciences, College of Health and Human Services, University of Toledo, USA

## Summary

*The manuscript was received on September 23, 2017 and was peer reviewed by two reviewers and an editor.*

*The initial recommendation of Major Revision was made on November 16, 2017.*

*The first revision was submitted on November 28, 2017 and was re-evaluated by the editor.*

*The manuscript was accepted for publication on December 05, 2017.*

## Consolidated Peer Review Comments

This manuscript presents a cross-sectional study examining whether driving and fatigue independently predicts participation in a sample of community-dwelling adults with mild to severe TBI (n = 64) as well as in a subset of those with clinical fatigue (n = 31). The manuscript is well-written and provides important information on a relevant topic. However, there were several issues detailed below that will be important to address prior to publication.

### Introduction:

- While the authors have provided information regarding participation in moderate to severe TBI, there is no information regarding participation in mild TBI. In fact, mild TBI is not mentioned at all in the Introduction. This seems to be important to address in some fashion given that a third of the study sample is mild TBI.
- The introduction describes fatigue as a unidimensional construct, yet is examined as bi-dimensional in analyses. It seems as though some discussion of cognitive and physical fatigue should be discussed in the Introduction.

### Methods:

- Participants: The study examined an extremely heterogeneous sample - from mild to severe TBI and 6 months to 38 years post-injury, aged 18-86. Mild and severe TBI can have very different profiles, as can post-acute vs. chronic phases of injury. Were there any differences in findings between mild v. mod-severe groups? Did any of the participants have any other medical conditions that weren't neurodegenerative (e.g., epilepsy)? How was dementia measured (i.e., self-report or via neuropsychological testing)?
- More descriptive regarding TBI would be helpful (e.g., LOC/AOC, PTA, number of injuries, type of injury) in order to better characterize the sample.

- The fatigue subgroup was determined using a cut-off established in an MS population. Why not use a cut-off validated in a TBI sample? If the MS cut-offs are justified, please address this as a limitation.
- Were fatigue, sleep disturbance, and/or cognitive symptoms included in the determination of depression via the PHQ?

Results:

- Although VIF and tolerance statistics were acceptable, the correlation between cognitive and physical fatigue is strong (.81). It could be advantageous to analyze fatigue as a singular variable in addition to examining the subscales separately. This seems appropriate as the introduction and discussion discuss fatigue as a singular concept.

Discussion:

- On p. 22 the authors propose that future research examine "item level participation". Does the PART-O have items that could determine in-home vs. outside participation? If so, could the authors analyze this data to answer the hypothesis presented regarding in-home vs. out-of-home participation? If not, it is suggested that the authors clarify this statement to propose examining in home vs. outside participation via alternative measures or interviews.

Additional comments:

- There were numerous typos throughout the manuscript (e.g., p. 1: "mild to TBI..."; p. 6: "batter"; p. 20: "Model 3").