

VA TBI Model Systems/IMAP Newsletter

Issue 8 : Fall 2019

TBI & Comorbidities

Comorbidities are other health conditions you may have in addition to TBI

Rehabilitation therapy is intended to improve functional outcomes and enhance independent living. As such, rehabilitation is a key component of treatment following TBI. Once thought of as an event followed by a period of recovery and then static functioning, TBI is now considered a chronic health condition requiring lifelong management.

There is a need to identify factors that can slow or halt recovery. By identifying factors that we can change through and intervention, like physical and mental health conditions, we have the potential to improve outcomes. Recent TBI Model Systems studies investigated medial and psychological comorbidites (conditions that co-occur with TBI) in a cohort of 266 Veterans with mild, moderate, and severe TBI. Participants completed a follow-up interview 2 years after their TBI, which included questions about medical conditions, psychological health, daily functioning , and community reintegrations. Read more about the effect of the comorbidites on psychological health, community reintegration, and functional outcomes on pages 2 & 4.

New Research- Chronic Pain

The VA TBI Model Systems Program at the James A. Haley Veterans' Hospital is partnering with 9 civilian TBI Model Systems sites to identify successful treatments for Chronic Pain.

Project Funded by: National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR)

Goal: To further characterize chronic pain and to examine those who have the best and worst outcomes to provide information on which treatments are successful based on pain type and personal factors. This will improve the ability of clinicians to prescribe or recommend more effective treatments.



TBI Model Systems study staff from L-R: Shannon Miles, Risa Nakase-Richardson, Erin Brennan, Deveney Ching, Marc Silva, Amanda Royer, Leah Drasher-Phillips, Jennifer Boyce

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Medical Comorbidities Predict Psychological Health after TBI

While we know that depression and medical problems are common following TBI, research has yet to consider the specific role that medical conditions may have in psychological health after TBI. Thus, we examined the effect of medical conditions on symptoms of depression and satisfaction with life.

We found that even while considering age, employment status, previous mental health treatment, and level of functioning at discharge from rehabilitation, having more medical comorbidities was related to lower life satisfaction. Chronic pain was specifically related to more symptoms of depression. Providers should screen for depression in persons with TBI, especially those with chronic pain and multiple health comorbidities.

Noyes ET, Tang X, Ching D, Silva MA, Dams-O'Connor K, Finn JA, Hammond FM, Pugh MJ, Sander AM, Stevens LF, Walker WC, Nakase-Richardson R. Medical comorbidities predict psychological health after traumatic brain injury: a VA TBI Model Systems Study.

Medical Comorbidities Predict Functional Outcomes after TBI

Having a greater number of medical conditions was associated with higher levels of physical impairment, overall disability, and need for supervision. These results were true even when considering other known predictors of rehabilitation outcomes including age, injury severity, and functional status at time of discharge from rehabilitation.

Also, certain health conditions were more likely to be related to greater impairment. Specifically, sleep apnea and kidney stones were associated with greater physical impairment. Chronic pain was associated with greater overall disability. This study highlights health conditions that should be on the radar of health care providers as points of intervention.

Nakase-Richardson R, Tang X, Noyes ET, Ching D, Silva MA, Drasher-Phillips L, Dams-O'Connor K, Walker WC, Hammond FM, Finn JA, Stevens LF. Impact of medical comorbidities on rehabilitation outcomes following TBI: a VA TBI Model Systems Study.

Percent of Veterans and Service Members with TBI & other Medical Conditions (N= 266)

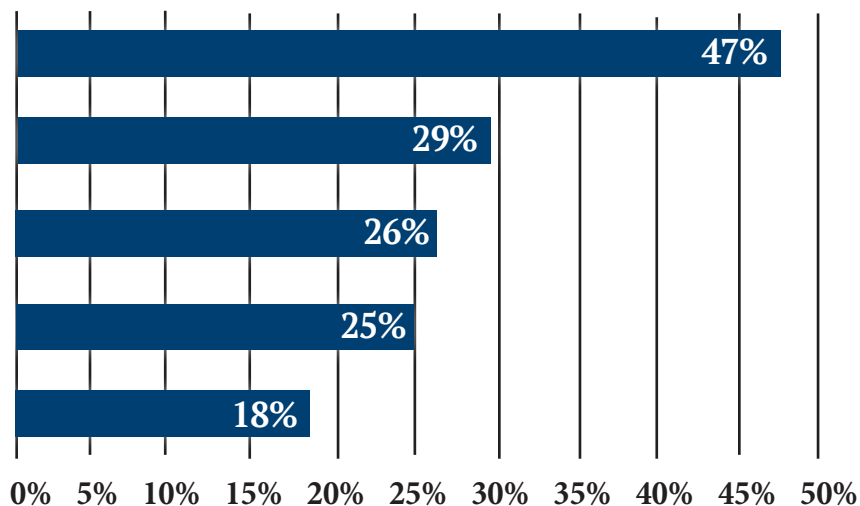
Chronic Pain

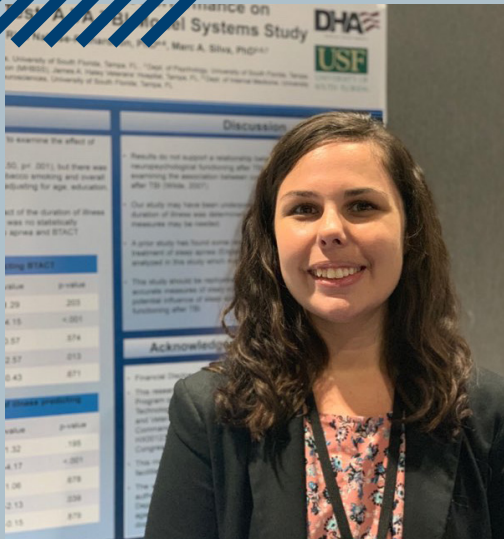
Fractures of the Hip, Wrist, or Spine

Sleep Apnea

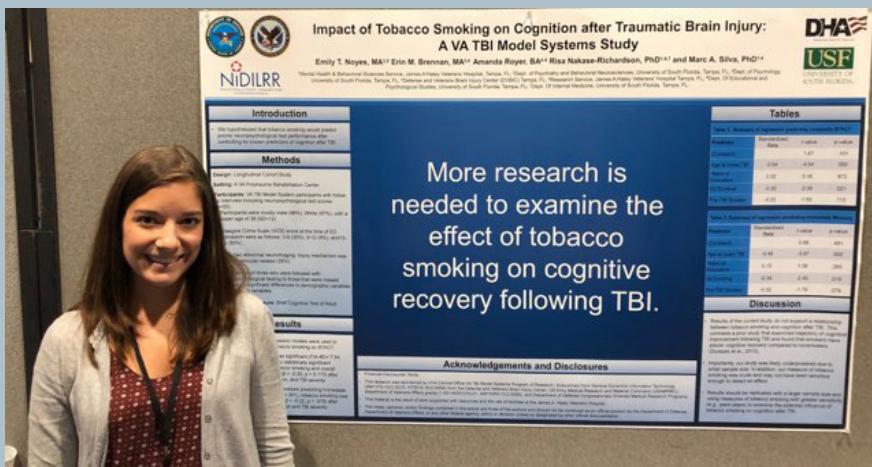
Hypertension or High Blood Pressure

Sexual Dysfunction





Pictured left: Erin Brennan, MA, presenting on cognitive testing performance & disability severity after TBI
 Pictured right: Dr. Shannon Miles presenting on arrests and premorbid behavioral health issues after TBI
 *Presentations at the Military Health System Research Symposium, August 2019



Emily Noyes, MA, presenting on the impact of tobacco smoking and TBI at the Military Health System Research Symposium, August 2019

Dr. Bridget Cotner presenting on caregiver quality of life at the 2019 James A. Haley Veterans' Hospital Annual Research Day

Thank You!

It is an honor to have the overwhelming support of our military service members, veterans, and their family members for the TBI Model Systems research program. We aim to better understand your recovery following brain injury – not just while hospitalized, but over your lifetime. By volunteering your time year after year, you are helping us better understand how TBI affects your life, and the lives of your loved ones. This information is used to inform clinicians and policy makers involved in TBI health care, with the ultimate goal of improving the health and well-being of our military service members and veterans with TBI.

Our study continues to grow year after year. As of August 2019, we have enrolled over 1300 participants from across the five VA Polytrauma Rehabilitation Centers into the TBI Model Systems (634 from the Tampa-based James A. Haley Veterans' Hospital). Our participants include Veterans from the Vietnam era, Persian Gulf War era, as well as post-9/11 Service Members. Approximately 30% of our participants are members of the elite Special Forces. Hearing your stories is both inspiring and humbling. We thank you for your continued participation in this important research.

Risa Nakase-Richardson, Principal Investigator

Recent Team Awards

- Mitchell Rosenthal Award for Best Scientific TBI Model System Publication in 2019 Hammond F, Giacino JT, Nakase-Richardson R, Sherer M, Zafonte RD, Whyte J, Arciniegas DB, Tang X. Prolonged disorder of consciousness due to traumatic brain injury: courses of recovery and functional status at ten years post-injury. *J Neurotrauma* 2019; 36(7):1136-1146. Epub 2018 Oct 19. PMID: 30226400
- Dr. Marc Silva was awarded the 2019 Rosenthal Early Career Research Award from the American Psychological Association Division 22, Rehabilitation Psychology
- Garcia A, Vanderploeg R, Wilde L, Kenney K, Pagoda T, Nakase-Richardson R. Obstructive Sleep Apnea Risk is Associated with Cognitive Impairment After Controlling for TBI: A Chronic Effects of Neurotrauma Consortium Study. Oral presentation presented at: International Brain Injury Association's 13th World Congress. (AWARDED THE 13th WORLD CONGRESS ON BRAIN INJURY TOP ABSTRACT AWARD)



Community Reintegration and Medical Comorbidities after TBI

Participation after TBI is an important outcome that includes returning to roles in the family, community, and workplace, otherwise known as community reintegration. We know that employment and health are interconnected. Addressing actual or anticipated employment and health-related problems is necessary to enhance community participation. As such, we examined whether medical comorbidities following TBI influences community reintegration.

We found that at two years after TBI, people with comorbid chronic pain and sleep apnea were less integrated into community life. Persons with TBI who were more integrated into their community were younger when they sustained their TBI, married, and had higher levels of functional independence compared persons who were poorly integrated after their TBI. Comorbid diagnoses of chronic pain, sexual dysfunction, and high cholesterol negatively impacted returning to work specifically. These medical conditions should be screened for in persons with TBI. If present, treatment should be offered to improve the community integration following TBI.

Ching D, Tang X, Noyes ET, Hammond FM, Walker WC, Dams-O'Connor K, Sander AM, Nakase-Richardson R. Comorbidity Burden Contributes to Community Reintegration and Employment after Traumatic Brain Injury. A VA TBI Model Systems Study.

TBI Resources

Brain Injury Association of America

General information about brain injuries, research, and treatment options:

BIAUSA.org/Brain-Injury

Finding BIA in your state:

BIAUSA.org/Find-BIA

BrainLine Community and Support

BRAINLINE.org/People-Brain-Injury/Community-Support

BrainLine Resource Directory

BRAINLINE.Org/Resource-Directory

Mild TBI Symptom Management Fact Sheet

These fact sheets provide coping and recovery tips to help patients manage mild TBI symptoms such as neck pain, headaches, and dizziness.

DVBIC.DCOE.Mil/Fact-Sheets

Model Systems Knowledge Translation Center

Learn about depression, emotional problems, sexuality, relationships, self-awareness, and fatigue that occurs after a Traumatic Brain Injury.

MSKTC.org/tbi/Hot-Topics

MSKTC.org/tbi/videos

MSKTC.org/tbi/infocomics

Past Versions of Newsletter

Find past versions of our TBIMS/IMAP Newsletter at the following Website

VA.TBINDSC.ORG/Default

National Brain Injury Information Center (NBIIC)

Call the NBIIC to speak with a professional brain injury expert

1-800-444-6443

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*Photos courtesy of James A. Haley Veterans' Hospital and TBI Model Systems Staff



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