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# VA TBI Model Systems/IMAP Newsletter

Issue 5: Behavioral Health (Winter 2016)

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## Introduction

We are pleased to introduce the 5<sup>th</sup> issue of the VA TBIMS/IMAP newsletter. Recent studies have shown that social and behavioral health factors are major contributors to overall health. As such, this issue focuses on such factors that co-occur with TBI. Research is underway investigating weight gain after TBI, re-hospitalization, and predictors of life satisfaction after TBI in military and Veteran study participants. Information on these topics can be found within the pages of this newsletter.

Previous issues of the VA TBIMS/IMAP newsletter are available at the following web sites:

National Data and Statistical Center:

<http://va.tbindsc.org>

VA Polytrauma Website:

<http://www.polytrauma.va.gov/news-and-resources/index.asp>

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## Special Recognition

Thank you to our Veterans and Military personnel for volunteering your time participating in TBI Model Systems and IMAP research interviews and completing research questionnaires. Your time completing interviews and completing questionnaires for this research has resulted in two awards that were presented at the 2016 American Congress of Rehabilitation Conference in Chicago, IL.

Dr. Leah Gause's poster titled "**Satisfaction with Life after Traumatic Brain Injury**" won the Military and Veterans Networking Group Overall Best Poster Award. Study findings are summarized on page 2.

Dr. Marc Silva's poster titled "**Prevalence and Predictors of Tobacco Smoking 1-year After Traumatic Brain Injury**" received the 2016 Military and Veterans Networking Group Early Career Best Poster Award. This research explored frequency of tobacco smoking after TBI as well as characteristics that predict who smokes tobacco after TBI. His findings will be presented in a forthcoming issue of this newsletter.

Your participation led to these award winning projects. The entire research team appreciates your dedication to the project which will help improve healthcare for all Veterans and Service Members with TBI.

## VA TBIMS and IMAP

The VA Traumatic Brain Injury Model Systems (TBIMS) is a longitudinal multi-center research program that examines TBI outcomes among Veterans and Military Personnel following comprehensive inpatient rehabilitation. The goal of TBIMS is to conduct research that contributes to evidence-based rehabilitation interventions and practice guidelines that improve the lives of individuals with TBI.

**Improved Understanding of Medical and Psychological Needs in Veterans and Service Members with TBI (IMAP)** is an extension of TBIMS. The goals of IMAP are to examine types of long-term physical and psychological health conditions in persons with TBI, the impact of those health conditions on recovery, and chronic rehabilitation needs including accessibility of needed services.

Principal Investigator: Risa Nakase-Richardson, Ph.D.

# Research Spotlight – TBI & Behavioral Health

## **Poor psychological health is associated with employment instability in the first two years after TBI.**

Gainful employment is an important part of daily life for individuals with and without TBI. Employment stability refers to maintaining stable employment. This study examined predictors of employment stability in a sample of 110 Veterans discharged from TBI rehabilitation. They were primarily Caucasian (76%) and male (93%). Many had sustained a severe TBI (52%), while others had moderate (21%), and mild TBI (26%).

Participants were followed 1-2 years post-injury. The researchers discovered that individuals with mild TBI were less likely to be stably employed compared to those with moderate or severe TBI who were able to return to work. They suspected that other issues besides brain injury might be playing a role, such as psychiatric symptoms. They found that those with greater symptoms of depression, anxiety, and PTSD were less likely to be stably employed at follow up. Future research should address these conditions, their impact on employment stability, and the overall well-being of Veterans and Service Members.

*This study was a collaborative effort between the University of South Florida, HSR&D CINDRR, DVBIC, James A. Haley Veterans' Hospital, Audie L. Murphy VA Hospital, and University of Arkansas for Medical Sciences and is under review for publication.*

## **Helpful Resources**

**DVBIC TBI Recovery Program:** This program ensures that Veterans with TBI and their family are supported and have access to the appropriate resources as they progress through recovery. For more information visit: <http://dvbic.dcoe.mil/tbi-recovery-support-program>

**VA Mental Health Guide:** This informational packet provides information on TBI and mental health. Information on other occurring conditions is provided. For more information visit: [www.mentalhealth.va.gov/docs/tbi.pdf](http://www.mentalhealth.va.gov/docs/tbi.pdf)

**VA Vocational Rehabilitation:** This division within the VA provides employment services to help with job training, employment accommodations, resume development, and job-seeking skills coaching. To view the services, benefits, and more, visit: <http://www.benefits.va.gov/vocrehab/index.asp>

**State Vocational Rehabilitation Agency:** Every state has a vocational rehabilitation agency that is designed to help individuals with disabilities meet their employment goals. Vocational rehabilitation agencies assist individuals with disabilities to prepare for, obtain, maintain, or regain employment. For a list of agencies near you, visit: <http://www.fda.gov/downloads/AboutFDA/WorkingatFDA/UCM277757.pdf>

## **Being older, married, and sustaining a combat injury are associated with greater life satisfaction after TBI. Disruption in meaningful activities contributes to lower life satisfaction.**

Life satisfaction is a person's feelings and attitude about their own life; it is an important aspect in recovery from TBI. Dr. Gause and colleagues examined predictors of life satisfaction in 278 Veterans and Military Personnel one year following TBI. The majority of Veterans were between ages 23 and 43. Most had sustained a moderate or severe TBI (83%), while 17% had sustained a mild TBI. Interestingly, severity of the TBI was not related to life satisfaction.

**Higher Life Satisfaction.** Married persons reported higher life satisfaction compared to individuals who were not married. The researchers suspected that this is because spouses provide emotional and social support needed during recovery from TBI. Life satisfaction was higher in persons injured while on active duty compared to those not on active duty. Persons injured while on active duty may have easier access to medical treatment and financial compensation for their injury which could explain this finding. Additionally, although active duty status at the time of injury does not necessarily equate to a combat injury, an injury sustained while fighting for one's country may hold more importance or significance. Older age was also associated with higher life satisfaction which the researchers believed could be because older individuals may feel more accomplished in their life. Younger individuals may not yet have had the opportunity to achieve an accomplished feeling which may have contributed to decreased life satisfaction.

**Lower Life Satisfaction.** Veterans or Service Members who were productive (i.e., employed or enrolled in school) prior to their TBI reported lower life satisfaction at follow-up. In other words, an interruption in resuming meaningful activities (such as returning to work or school) may lead to decreased life satisfaction.

Life satisfaction is driven by many factors in one's life. Veterans and Service Members should work closely with health care providers to address issues they face that contribute to lower life satisfaction. Future research should address ways to improve life satisfaction among our Veterans and Service Members such as improving community reintegration including returning to work, school, or volunteering in the community.

*This study was a collaborative effort between the Minneapolis VAMC, Hunter Holmes McGuire VAMC, Audie L. Murphy VA Hospital, James A. Haley Veterans' Hospital, and the University of Arkansas for Medical Sciences. This study is currently under review for publication.*

# Research Spotlight – TBI & Behavioral Health

## **Rehospitalization is common in the first year post-TBI. This is particularly true for those with more severe injuries.**

Dr. Jo Tran examined the rate of hospital re-admission in 401 Veterans with TBI. All were previously discharged from inpatient TBI rehabilitation and were interviewed one year following their TBI. Of those followed, 41% returned to the hospital at least once within the first year after their TBI. More concerning was that of those rehospitalized, 30% were re-admitted twice or more often. The most common reasons for readmission included more inpatient rehabilitation (33%), orthopedic problems (10%), infection (8%), seizures (8%), and psychiatric issues (7%).

Individuals who were re-admitted to the hospital were more likely to have had a more severe TBI compared to those not re-hospitalized. For example, those who went back to the hospital had a longer period of coma (9 days versus 2 days) and longer period of confusion, also called posttraumatic amnesia (28 days vs 19 days). In some cases, like infection, the reason for return to the hospital was obvious. However, in many cases, the reason was unclear (26% of readmissions were categorized as “other not specified”). Nearly 33% of participants returned to inpatient rehabilitation in the first year after discharge. Possibly, these individuals experienced a functional decline of some sort. It is also possible these patients improved after discharge and reached a point where they would benefit from additional intensive TBI rehabilitation or had a planned admission for focused follow-up care. Both possibilities may be true for different individuals. These findings highlight the importance of high quality hospital care and follow-up for Veterans during their first year after a TBI. Policy makers and researchers are considering these results and ways to prevent such high rates of illness and hospital readmission after TBI.

*This study was a collaborative effort between the James A. Haley Veterans' Hospital, Indiana University School of Medicine, Mt. Sinai School of Medicine, University of Arkansas for Medical Sciences, and Audie L. Murphy Memorial VA Hospital, and is currently in press in the Journal of Head Trauma Rehabilitation.*

## **Helpful Resources**

MOVE! is a weight management program designed to improve the lives of Veterans. In 2015 more than 75% of Veterans receiving care in VHA facilities were considered to be overweight. This program screens Veterans receiving care, refers to weight management services, and provides unique treatment to accommodate Veterans. Encouraging healthy eating behavior, increasing physical activity, and promoting small weight losses can reduce health risks, prevent certain diseases, and improve quality-of-life. For more information on Move! visit:

<http://www.move.va.gov>

Center for Disease Control Fact Sheet for Physical Activity: Adults who are active are less likely to develop chronic health conditions and have better aerobic fitness than those who are inactive. To learn more about, aerobic and muscle-strengthening activities, visit:  
[http://www.cdc.gov/physicalactivity/downloads/pa\\_fact\\_sheet\\_adults.pdf](http://www.cdc.gov/physicalactivity/downloads/pa_fact_sheet_adults.pdf)

TBI is a Chronic Health Condition: The Center for Disease Control and Prevention provides information about TBI prevention and ways to help individuals recognize, respond to, and recover from TBI. For additional information visit: <https://www.cdc.gov/traumaticbraininjury>

CDC TBI Fact Sheet: This overview provides readers with background information, risk factors, and common problems that are experienced in persons with a TBI. For more information visit: [http://www.cdc.gov/traumaticbraininjury/get\\_the\\_facts.html](http://www.cdc.gov/traumaticbraininjury/get_the_facts.html)

## **Obesity, which has been linked to poor health, occurs in a sizeable number of Veterans and Military Service Members with TBI.**

Obesity has been linked to poorer health and premature death, and rates of obesity are increasing in the U.S. population. Notably, there is limited research about obesity in persons with traumatic brain injury (TBI), particularly among Veterans and Military personnel. Whether obesity affects TBI recovery remains unclear, as prior research has produced conflicting findings. Two studies showed obese individuals have poorer outcome after TBI, but another study found no such association.

Dr. Racine Brown and colleagues examined obesity rates in Veterans and Military personnel with mild, moderate, or severe TBI who were admitted for inpatient rehabilitation. Most were male (95%) and White (70%) with a median age of 30. Common TBI causes were motor vehicle accidents and falls. Rate of obesity prior to TBI was low (20.2%) and was slightly higher 1 year post-TBI (23.8%). Among the 17 who were obese before the TBI, 52.9% remained obese at follow up. Among the 67 who were not obese prior to the TBI, 16.4% were obese at follow up. Overall, most TBI survivors remained in the same weight class over time, yet a substantial minority were obese before and/or after their TBI. Given prior research on the health consequences of obesity, this is concerning. Although results are preliminary, this research suggests that obesity is a problem among Veterans and Service Members with TBI. Collaboration among rehabilitation and behavioral health experts may be prudent to address this issue.

*This study was a collaborative effort between the University of Arkansas for Medical Sciences, University of South Florida, Ohio State University Department of Physical Medicine and Rehabilitation, Baylor Rehabilitation Institute, James A. Haley Veterans' Hospital, Audie L. Murphy Memorial VA Hospital, Palo Alto Health Care System VA Hospital, DVBIC, and the University of Miami Department of Physical Medicine and Rehabilitation. This research will be presented at the upcoming International Brain Injury Association (IBIA) conference in 2017.*

## Educational Resources

### Brain Injury Association of America

Phone: 703-761-0750

Brain Injury Information Only: 1-800-444-6443

Website: [www.biausa.org](http://www.biausa.org)

### Brain Injury Association of Florida

Toll-Free: 800-992-3442

Phone: 850-410-0103

Email: [biaftalla@biaf.org](mailto:biaftalla@biaf.org)

Website: [www.biaf.org](http://www.biaf.org)

### Brainline.org

Phone: 703-998-220

Email: [info@brainline.org](mailto:info@brainline.org)

Website: [www.brainline.org](http://www.brainline.org)

### Family Caregiver Alliance

Phone: 1-800-445-8106

Website: [www.caregiver.org](http://www.caregiver.org)

### Defense and Veterans Brain Injury Center

Crisis Intervention: 1-800-273-8255

National Headquarters: 1-800-870-9244

DVBIC Information and Referral: 1-866-966-1020

Website: <http://dvbic.dcoe.mil/fact-sheets>

## Thank you to our study participants.

As of January 2016, there were 986 Veterans and Military personnel enrolled in the VA TBI Model Systems study. Thank you to all our Veterans and Military personnel for your participation. Your involvement makes this research possible.

*TBIMS/IMAP is an interagency collaboration between the Department of Veteran Affairs, Department of Defense, and Department of Health and Human Services.*

## Veterans and Service Member Data in recently published VA TBIMS Research

### Community Reintegration Problems Among Veterans and Active Duty Service Members With Traumatic Brain Injury

Dr. Susan McGarity and Colleagues

*Journal of Head Trauma Rehabilitation* (in press)

### Predictors of employment outcomes in Veterans with TBI

Dr. Tina Dillahunt-Aspillaga and Colleagues

*Journal of Head Trauma and Rehabilitation* (in press)

### Improving the Significance and Direction of Sleep Management in TBI

Dr. Risa Nakase-Richardson

*Journal of Head Trauma Rehabilitation* (2016)

### Implementation of actigraphy in acute TBI neurorehabilitation admissions

Dr. Stephanie Towns and Colleagues

*Physical Medicine & Rehabilitation* (2016)

### Incidence, characterization, and predictors of sleep apnea in consecutive brain injury rehabilitation admissions

Dr. Erin Holcomb and Colleagues

*Journal of Head Trauma Rehabilitation* (2016)

### The relationship between sleep-wake cycle disturbance and trajectory of cognitive recovery during acute traumatic brain injury

Dr. Erin Holcomb and Colleagues

*Journal of Head Trauma Rehabilitation* (2016)

### Rehospitalization in the First Year following Veteran and Service Member TBI: A VA TBI Model Systems Study

Dr. Johanna Tran and Colleagues

*Journal of Head Trauma and Rehabilitation* (in press)

### International collaboration to advance the science and care for those with severe brain injury.

Dr. Risa Nakase-Richardson and Colleague

*International Neurotrauma Letter* (2016)

## Contact Information

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**Veteran's Crisis Hotline: 1-800-273-8255 (Press 1)**



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of Veterans Affairs