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14. ABSTRACT

This goal of this project is to develop a large-scale, longitudinal registry of PTSD in combat-exposed OIF/OEF/OND male and female veterans. The objective of the current study is to systematically expand the longitudinal assessment by collecting follow-up data at additional time points for multiple domains of interest. Patterns of longitudinal change in the VALOR cohort will be empirically classified into trajectory subtypes by means of latent growth mixture modeling. The availability of comprehensive data on PTSD symptoms and related exposures and outcomes at multiple time points in a cohort of VA users with and without PTSD provide a unique opportunity to examine a number of hypotheses regarding longitudinal trajectories in combat-exposed veterans. In addition, the large proportion of women in our sample will allow us to examine variation in the associations by gender.

15. SUBJECT TERMS

Risk factors for PTSD, PTSD symptom development, VA healthcare utilization.

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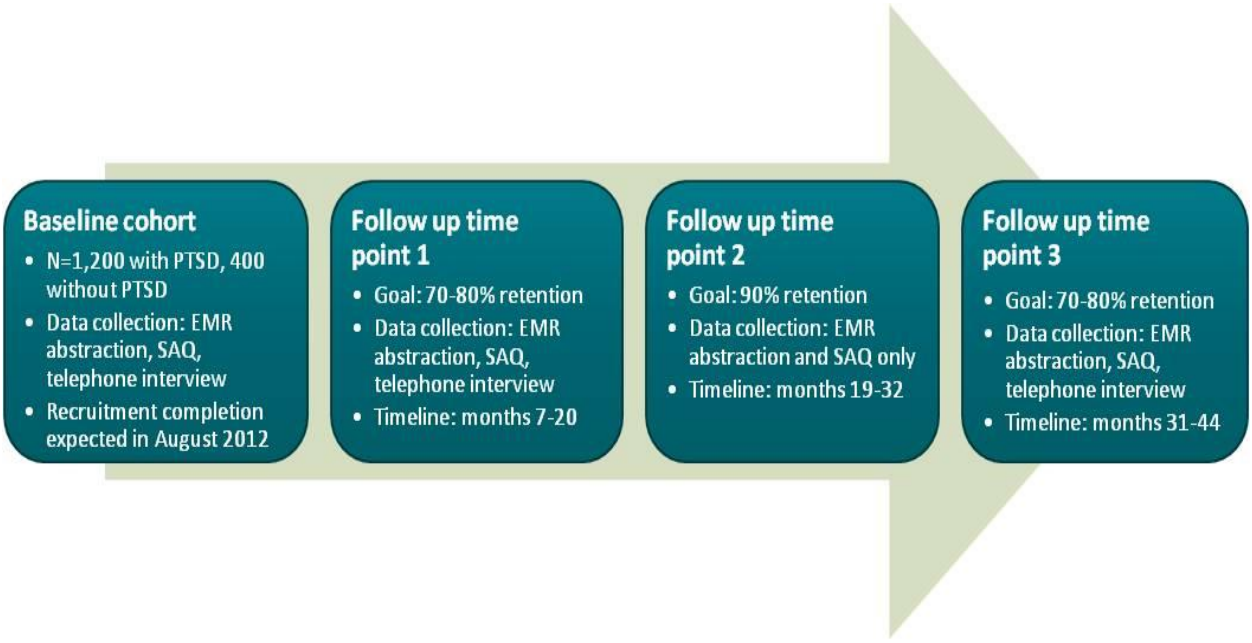
INTRODUCTION:

Project VALOR is a large-scale, longitudinal registry of PTSD in combat-exposed OIF/OEF/OND male and female veterans. The objective of the current study is to systematically expand the longitudinal assessment by collecting follow-up data at additional time points for multiple domains of interest. Patterns of longitudinal change in the VALOR cohort will be empirically classified into trajectory subtypes by means of latent growth mixture modeling. The availability of comprehensive data on PTSD symptoms and related exposures and outcomes at multiple time points in a cohort of VA users with and without PTSD provide a unique opportunity to examine a number of hypotheses regarding longitudinal trajectories in combat-exposed veterans. In addition, the large proportion of women in our sample will allow us to examine variation in the associations by gender.

Using baseline and follow-up data from participants in Project VALOR, we evaluated the following specific aims:

1. Examine trajectories of PTSD symptomatology and diagnosis by chart and diagnostic interview assessments in combat-exposed men and women.
2. Examine the nature and extent of military sexual trauma (MST) in combat-exposed men and women who have utilized the VA Healthcare System, including the contribution of MST to PTSD symptoms and diagnosis.
3. Examine associations of PTSD, mTBI, major depressive disorder (MDD), and treatment utilization in relation to changes in suicidal ideation.

Below is a graphic showing the basic design of the project and expected participant enrollments at each time point.



2. **KEYWORDS:**

Posttraumatic stress disorder (PTSD), military sexual trauma (MST), suicide, combat-exposed veterans, PTSD trajectory, longitudinal, VA utilization

3. **SUMMARY OF WORK ACCOMPLISHED:**

Year 1 (2012-2013)

In Year 1, we finalized the study protocol and the manual of operations, submitted them to local IRBs and received approvals, hired staff to fill vacant positions and trained them, and received approval from HRPO. We subsequently began data collection. During this year, we consented 156 participants and collected data from 72 participants. Throughout the year, we analyzed data collected during the earlier phase of the project to prepare multiple manuscripts and presentations.

Year 2 (2013-2014)

In Year 2, we completed the first round of data collection. Out of the total Project VALOR sample (n=1649), 1460 participants (88.5%) were consented for participation and 1348 participants (81.7%) completed their participation in the first phase of the study. This retention rate exceeded what we had expected and proposed in our grant application. In total, 49 participants (3% of the sample) declined to participate in the study. All the data from the first round of data collection were entered into our database. Staff worked on cleaning the data for future analyses. In September 2014, we started recruitment for the second round of data collection. We consented 98 participants to participate and collected data from 61 study participants in the second round of data collection. Throughout the year, we continued to analyze data from the first Project VALOR grant for multiple manuscripts and presentations.

Year 3 (2014-2015)

In Year 3, we completed the second round of data collection. Out of the total Project VALOR sample (n=1649), 1526 participants (92.5%) were consented for participation and 1347 participants (81.7%) completed their participation in the second phase of this study. This retention rate exceeded what we had expected and proposed in our grant application. In total, 56 participants (3.3% of the sample) declined to participate. All the data from the second round of data collection were entered and cleaned for use in future analyses. In September of 2015, we started recruitment for the third round of data collection. Three hundred thirty-nine participants completed their online questionnaire and 284 completed their phone interviews.

We also made progress on other aspects of the project. For quality assurance, assessors attended weekly reliability meetings in which they reviewed a sample of completed interviews. Additionally, we began the process of abstracting electronic medical record (EMR) data and merging it with previously collected data. Interim analyses using data collected during the three rounds of phase 2 continued. Several projects which are in line with study aims were presented to an international audience at a range of professional conferences. Each of these presentations included data collected via self-report, interview, and/or the EMR. Specifically, we presented data showing how PTSD symptoms are related to other outcomes across time. For example, our analyses provided insight into how psychopathology affects employment in our

sample longitudinally, how different types of combat affect PTSD prevalence, factors that influence treatment seeking behaviors, and how Veterans with unique presentations of PTSD (e.g., dissociative subtype; subthreshold PTSD) differ from those with a more traditional diagnosis. We also presented results of interim analyses showing how sex differences manifest in reporting of military sexual trauma (MST) exposure based on the type of assessment methodology used, how MST influences social support, and prevalence of MST in the LGBTQ community. In other interim analyses we examined associations of PTSD, mTBI, major depressive disorder (MDD), and treatment utilization in relation to changes in suicidal ideation. We have presented the results of our findings at various conferences. These results provide information about potential risk factors for suicidal behaviors, how functional impairment and anger interact with suicide risk, and how effective safety plans are at reducing risk of suicidality.

Year 4 (2015-2016)

In Year 4, we continued to work toward completion of the third round of data collection. Out of the total Project VALOR sample (n=1649), 1543 participants (93.6%) consented to participate and 1068 participants (64.8%) completed their participation in the third phase of the study. In total, 56 participants (3.3% of the sample) declined to participate in the study. We cleaned and entered these data in the database. We continued abstracting EMR data and merging it with other data. We conducted interim analyses for several projects that were consistent with the study aims and presented results at a variety of professional conferences. These presentations focused on factors that influence treatment utilization behaviors of Veterans, the longitudinal association between PTSD and metabolic syndrome, how Veterans with unique presentations of PTSD (e.g., dissociative subtype) differ from those with a more traditional diagnosis, the utility of repeated screening for MST, associations between childhood sexual trauma and the dissociative subtype of PTSD, and the prevalence of PTSD and depression among sexual minority and non-sexual minority female veterans exposed to MST. Presentations also focused on potential risk factors for suicidal behaviors, post deployment social support as a key protective factor for suicide risk, and the effectiveness of VA safety plans in reducing risk of suicidality.

Year 5 (2016-2017)

In Year 5 (first extension without funds; EWOF), in accordance with the approved statement of work (SOW), we completed data collection. Specifically, we consented 1544 participants and collected data from 1202 subjects completed this phase, representing 72.9% of the original Project VALOR sample (n=1649). This retention rate exceeded what we had expected and proposed in our grant application. While data collection was underway, assessors attended weekly reliability meetings in which they reviewed a sample of completed interviews for quality assurance. Additionally, we continued to gather data from the EMR. Specifically, we have updated data on variables of interest for all current participants, screened data for accuracy and consistency, merged data with other datasets, and de-identified data. We computed numerous variables of interest from EMR data.

In the latter half of the year, we began work on the analyses that addressed Specific Aim 1 (conduct PTSD symptom trajectory analyses). During the third and fourth quarters, we also began working on a public use dataset. Through working with NIMH,

we determined where the final database would be stored as well as completed all the necessary codebooks for each of our 4 time points. We conducted interim analyses for several projects which are in line with study aims. Findings were presented at a range of professional conferences. We applied for and received a second EWOF to continue gathering data from the EMR and continuing to run analyses on data previously collected.

Below is a table showing participant enrollment and retention at each time point for both the diagnostic interview and questionnaire.

	T1	T2	T3	T4
Questionnaire	1649	1377, 83.5%	1347, 81.7%	1243, 75.4%
SCID Interview	1649	1348, 81.7%	NA	1205, 73.1%

Year 6 (2017-2018)

In Year 6 (second EWOF), we continued work on the extraction of data from participant EMRs in line with Task 8 of the approved SOW. Preliminary work on a manuscript reporting results from these analyses began. We computed variables of interest with EMR data, including variables pertaining to medication use, mental health treatment utilization, service connection status, and appointment attendance. Analysis of longitudinal results pertaining to trajectories of change in PTSD (Aim 1) were finalized. We also prepared a presentation and manuscript sharing these results were prepared. Preliminary results from these analyses were presented at the annual convention of the Association for Depression and Anxiety of America (ADAA). During the second half of this year, we collected additional variables of interest from the EMR, specifically medical and mental health VA treatment cost data. It was determined that the public use dataset would be housed within the NIMH Data Archive (NDA) in late 2017.

A science advisory board meeting was held on August 13 to provide updates on our progress. We applied for a third EWOF, which would enable us to continue analyzing data related to our second and third study aims.

Year 7 (2018-2019)

In Year 7 (third EWOF), following execution of a Data Submission Agreement with the NIMH in February 2018, we began the process of converting the final VA datasets into the necessary format required by the NIMH. Over 2018 – 2019, this process was ongoing in order to comply with the necessary standards of the NDA. NERI began by providing the individual interview and questionnaire sections by timepoint. This was then reviewed by the NDA to determine which data structures already existed within the NDA Data Dictionary. For measures that were already defined, aliases were created to allow for the VALOR data to be mapped correctly to the already existing data structures. For measures that were not yet defined in the NDA Data Dictionary, the NDA helpdesk created these data structures. Although the VALOR data were already de-identified, the NDA requires an NDA GUID to be applied to each subject ID. Per the NIMH website, “The NDA GUID is a universal subject ID that allows researchers to share data specific to a study participant without exposing personal identifiable

information (PII) and makes it possible to match participants across labs and research data repositories." Once data structures were defined and GUIDs assigned to each patient ID, the datasets were uploaded to the NDA Validation Tool. Following upload, the NDA reviewed the data for errors. The initial submission of all datasets was performed on July 16, 2019. Two errors were found by the NDA reviewers across multiple datasets. The corrected datasets were uploaded on December 10, 2019. Data submitted to the NDA are shared in approximately 4 months from submission. During that time, data remain in a private state to allow time for the quality of the data to be reviewed by our group and the NDA. Datasets are then shared for those users with appropriate access to the NDA. Along with the final datasets, the final VALOR protocol and publications will be available once shared. In order to download the shared dataset, an NDA account is required. Individuals must visit the NDA Request Access page, https://nda.nih.gov/get/access-data.html, to gain access.

At the same time the public dataset was being constructed, we were also finishing the abstraction of the EMR data for our study participants. We now have the following EMR datasets for all VALOR study participants. These datasets are available to be integrated with the other diagnostic and self-report data collected from VALOR participants over the course of this study.

1) **Outpatient MH visits:**
    - Contains all MH visits occurring in the year before T1 through T4, with information including dates, CPT procedure codes, service connection or MST related, service category (individual therapy, group therapy, psychiatry, etc.), and diagnoses assigned.
2) **Pharmacy data**
    - Contains specific psychiatric prescriptions of interest dispensed to patients between the year before T1 through each participant's T4 date (imputed if no T4). Each line of the dataset is a separate prescription that was dispensed by VA pharmacy services.
    - Contains name of drug, dates, amount dispensed, days supply, month supply, etc.
    - Variables have been added to code the category that the drug belongs to (i.e., antidepressant, sedative, opioid, antipsychotic)
3) **VA Healthcare Cost data**
    - Master cost file contains total costs per participant broken down by fiscal year and various categories (inpatient, outpatient, pharmacy costs, mental health costs)
    - There are also raw data files and example syntax that can be used to create different cost variables depending on specific dates of interest or types of visits, etc.
4) **Mental Health Survey data:**
    - Total and subscale scores on a variety of measures administered during VA visits and captured electronically. Includes CAPS, MMPI2, PCL, AUDC, PC-PTSD, etc. The date range for these scores is the year between T1 and the T4 date.
5) **Emergency and urgent care visits**

- Contains all ER and urgent care visits occurring from the year before T1 through T4, with data about whether the visit was ER or UC, diagnoses assigned, CPT procedures codes, dates, service connection related, MST related.

6) **No show data**
   - Contains dates of all VA appointment no shows for all VALOR participants from the year before their T1 date through T4 (with a imputed T4 date if they didn't complete T4)
   - Includes information on what clinic the visit was scheduled in, which may be useful for identifying mental health no shows, etc.

We also were able to collect a large table file that includes ALL VA outpatient encounters (labs, pharmacy, visits) for all VALOR participants, for all available dates as well as data on service-connected disability data at several different timepoints that will allow us to track changes in disability status over time. Of note, none of these EMR data were part of the public use dataset we created because these data contain PHI and PII.

4. KEY RESEARCH ACCOMPLISHMENTS:

All specific aims of the study were completed.

Specifically, with regards to Aim 1 (examine trajectories of PTSD symptomatology and diagnosis by chart and diagnostic interview assessments in combat-exposed men and women), Project VALOR is the only study to use an accelerated longitudinal design to examine long term PTSD symptom trajectories. We found that, on average, veterans in our sample experienced initial PTSD symptom severity above the diagnostic threshold following trauma exposure, which worsen slightly in the first few years following trauma exposure, then subsequently improve. Although results indicate symptoms eventually begin to decline, this effect was gradual; most participants continued to meet or exceed the PTSD symptom severity diagnostic threshold for over 15 years following trauma exposure. The strongest observed predictors of symptom course were the included time varying covariates depression, SI, and alcohol abuse as well as exposure to aftermath of battle injuries and PTSD service-connected disability status (see Lee et al, in revision).

With regards to Aim 2 (examine the nature and extent of military sexual trauma (MST) in combat-exposed men and women who have utilized the VA Healthcare System, including the contribution of MST to PTSD symptoms and diagnosis), Project VALOR is one of the only studies to employ different methods of assessing prevalence of MST among sample participants. We found that both assessment modality and demographic membership influenced MST endorsement. MST endorsement on the study measures was consistently twice as large as on the VA screen, across demographic groups. For men, MST endorsement varied by a factor of 11 across measures, with endorsement being lowest on the VA screen and highest on the study questionnaire. Although differences were also detected for sexual minority and Black participants, these

findings may have been better explained by gender differences. Our findings have very clear implications for how both VA and DoD should be assessing MST among Veterans and service members. Both assessment modality and demographic membership substantially influenced MST endorsement. Providing a clear rationale for screening and increasing privacy around screening results, particularly for male veterans, may help to facilitate MST disclosure (see Bovin et al., 2019).

With regards to Aim 3 (examine associations of PTSD, mTBI, major depressive disorder (MDD), and treatment utilization in relation to suicidal ideation and suicide attempts), we found that Results indicated that current depressive symptoms, PTSD, and history of prior TBI were all significantly associated with current suicidal ideation. After adding a number of variables to the model, including psychiatric comorbidity, TBI history was associated with increased risk of current suicidal ideation among male veterans only. Our study shows that TBI is an important variable to consider in future research on suicide among veterans of the wars in Iraq and Afghanistan, particularly among male veterans (see Wisco et al., 2014). We also found that seventy-four participants (4.49%) attempted suicide between T1 and T2. The strongest predictors of suicide attempts among the full sample were suicidal intent, attempt history, suicide ideation, PTSD symptoms, alcohol use disorder (AUD) symptoms, and depression. Veterans with multiple risk factors were particularly vulnerable; of veterans with 0, ≥1, ≥2, ≥3, or ≥ 4 of these risk factors, 0%, 7.81%, 10.31%, 18.45%, and 20.51% made a suicide attempt, respectively. Using data from Project VALOR, we prospectively identified several strong predictors of suicide attempts among OEF/OIF veterans which may be important targets for suicide prevention efforts. Further, co-occurrence of multiple risk factors was associated with markedly greater risk for suicide attempts; veterans with multiple risk factors appear to be at the highest risk among OEF/OIF veterans enrolled in VA care. There are several other manuscripts currently in progress that report results of additional analyses of risk factors associated with suicide and identification of those at risk.

We also had several other notable accomplishments above and beyond accomplishing all study aims. Specifically:

Using Project VALOR data, we collaborated with others to publish some of the earliest and most widely cited papers on the prevalence and factor structure of the DSM-5 PTSD diagnostic criteria (Miller et al., 2013; Wolf et al., 2015), diagnostic utility of DSM-5 PTSD symptoms (Green et al., 2017) and on ICD-11 PTSD diagnostic criteria (Wisco et al., 2016).

Using Project VALOR data, we published the first network analysis of DSM-5 PTSD symptoms (Mitchell et al., 2018).

Using Project VALOR data, we published the first longitudinal analysis of the relation between PTSD symptoms and metabolic syndrome (Wolf et al., 2016).

Using Project VALOR data, we published the first study to show that over 25% of PTSD diagnoses in Veterans' EMR may be incorrect, with varying proportions of false positives and false negatives. Overall, those individuals with the most and least severe symptom presentations in the diagnostic interview were more likely to be accurately classified (Holowka et al., 2014).

Using Project VALOR data, we published the first study showing that there may be racial disparities in who receives disability compensation for service-connected PTSD. Specifically, we found that among veterans with current SCID diagnosed PTSD, Black veterans were significantly less likely than White veterans to receive a PTSD diagnosis from their C&P examiner. Among veterans without current SCID diagnosed PTSD, White veterans were significantly more likely than Black veterans to receive a PTSD diagnosis from their C&P examiner. Splitting the sample by use of psychometric testing revealed that examinations that did not include psychometric testing demonstrated the same relation between veteran race and diagnostic concordance. However, for examinations in which psychometric testing was used, the racial disparity between SCID PTSD status and disability exam PTSD status was no longer significant. Our results suggest that psychometric testing may reduce disparities in VA PTSD disability exam outcomes (Marx et al, 2016).

Using Project VALOR data, we found that, although safety plans (SPs) are mandated for veterans presenting with moderate to high suicide risk in VA, this mandate is not being met, and that most SPs that are completed are of poor quality (Green et al., 2017).

Using Project VALOR data, we published the first crosswalk translation between the PCL-IV and PCL-5. This paper will be of great utility to many researchers and clinicians (Moshier et al., 2019).

In total, 27 papers using Project VALOR data have been published or are under review. Even more are still in planning stages. Dozens of presentations using Project VALOR data have been presented at various national and international conferences.

We have created a public use dataset that is now available for download and use.

Finally, we have extracted thousands of data points from VALOR study participants' EMRs and we plan to use them in other follow-up projects and papers.

5. CONCLUSION:

The Project VALOR PTSD registry has and will continue to provide information to assist researchers, military leaders, and treatment providers to better understand PTSD and related problems, with a specific focus on the course of

the disorder, suicidal ideation, and military sexual trauma. This knowledge will be of benefit to health care providers, policy makers and current service members as well as victims of trauma in the broader community. It has included:

- Evaluation of long-term outcomes of PTSD;
- A more accurate assessment of current theoretical models of symptom development,
- Documentation of health resource utilization and development of a database that will serve as a resource for health services planning and policy.

Furthermore, this study has or will contribute:

- The formation of a potential cohort of subjects for ancillary studies, ranging from genomic influences to quality of life and psychosocial outcomes, as well as future clinical trials;
- The creation of a representative sample of PTSD OEF/OIF/OND Veterans who use the VA medical system available for use in epidemiologic studies, particularly for comparisons with active duty and other Veteran or civilian populations;
- Utility to clinicians, patient advocacy groups, and health policy planners;
- Publications and dissemination of the registry results to provide a representative perspective of what is achieved in actual current care settings, thereby augmenting outcomes data from clinical trials.

6. PUBLICATIONS, ABSTRACTS, AND PRESENTATIONS:

PUBLICATIONS

1. Rosen, R.C., et al. (2012). Project VALOR: design and methods of a longitudinal registry of post-traumatic stress disorder (PTSD) in combat exposed Veterans in the Afghanistan and Iraqi military theaters of operations. *International Journal of Methods in Psychiatric Research.* 21(1), 5-16.

2. Gates, M.A., et al. (2012). Posttraumatic Stress Disorder in Veterans and Military Personnel: Epidemiology, Screening, and Case Recognition. *Psychological Services*. 9(4), 361-82.

3. Miller, M.W. et al. (2013). The Prevalence and Latent Structure of Proposed DSM-5 Posttraumatic Stress Disorder Symptoms in U.S. National and Veteran Samples. *Psychological Trauma: Theory, Research Practice and Policy*. 5(6), 501-512.

4. Holowka, D.W., (2014). PTSD Diagnostic Validity in Veterans Affairs Electronic Records of Iraq and Afghanistan Veterans. *Journal of Consulting and Clinical Psychology*. 82(4), 569-579.

5. Wisco, B.E. et al. (2014). Traumatic Brain Injury, PTSD, and Current Suicidal Ideation Among Iraq and Afghanistan U.S. Veterans. *Journal of Traumatic Stress*. 27: 244-248.

6. Wolf, E.J. et al. (2015). ICD–11 Complex PTSD in U.S. National and Veteran Samples: Prevalence and Structural Associations With PTSD. *Clinical Psychological Science*. 3(2), 215-229.
7. Green J.D. et al. (2015). The Effect of Enemy Combat Tactics on PTSD Prevalence Rates: A Comparison of Operation Iraqi Freedom Deployment Phases in a Sample of Male and Female Veterans. *Psychological Trauma: Theory, Research Practice and Policy.* 8(5), 634-640.

8. Fang, S.C. et al. (2015). Psychosocial Functioning and Health-Related Quality of Life Associated with Posttraumatic Stress Disorder in Male and Female Iraq and Afghanistan War Veterans: The VALOR Registry. *Journal of Women's Health*. 24(12).

9. Wolf, E.J. et al. (2016). Longitudinal associations between post-traumatic stress disorder and metabolic syndrome severity. *Psychological Medicine.* 1(10).

10. Marx, B.P. et al (2016). Validity of Posttraumatic Stress Disorder Service Connection Status in Veterans Affairs Electronic Records of Iraq and Afghanistan Veterans. *Journal of Clinical Psychiatry.* 1-6.

11. Breyer, B.N. et al. (2016). Sexual Health in Male and Female Iraq and Afghanistan U. S. War Veterans with and Without PTSD: Findings from the VALOR Cohort. *Journal of Traumatic Stress*. 29(3), 229-236.

12. Kearns, J.C., et al. (2016). The Effect of Military Sexual Assault, Combat Exposure, Postbattle Experiences, and General Harassment on the Development of PTSD and MDD in Female OEF/OIF Veterans. *Translational Issues in Psychological Science*. 2(4),418- 428.

13. Jackson, C.E. et al. (2016). Mild Traumatic Brain Injury, PTSD, and Psychosocial Functioning Among Male and Female U.S. OEF/OIF Veterans. *Journal of Traumatic Stress.* 29(4), 309-316.

14. Wisco, B.E. et al. (2016). The impact of proposed changes to *ICD-11* on estimates of PTSD prevalence and comorbidity. *Psychiatric Research*. 240: 226-233.

15. Engel-Rebitzer, E. et al. (2016). A longitudinal examination of peritraumatic emotional responses and their association with posttraumatic stress disorder and major depressive disorder among veterans. *Journal of Trauma and Dissociation*. 18(5), 1-8.

16. Marx, B.P. et al. (2017). The Influence of Veteran Race and Psychometric Testing on Veterans Affairs Posttraumatic Stress Disorder (PTSD) Disability Exam Outcomes. *Psychological Assessment*. 29(6), 710-719.

17. Mitchell, K.S. et al. (2017). Network Models of *DSM–5* Posttraumatic Stress Disorder: Implications for ICD–11*. Journal of Abnormal Psychology.* 126(3), 355-366.
18. Green, J.D. et al. (2017). Examining the diagnostic utility of the *DSM-5* PTSD symptoms among male and female returning veterans. *Depress Anxiety*. 34, 752-760.

19. Lee, D.J. et al. (2018). A longitudinal study of risk factors for suicide attempts among Operation Enduring Freedom and Operation Iraqi Freedom veterans. *Depress Anxiety*. 2018; 1-10.

20. Green, J.D. et al. (2018). Evaluating the Effectiveness of Safety Plans for Military Veterans: Do Safety Plans Tailored to Veteran Characteristics Decrease Suicide Risk? *Behavior Therapy*. 49, 931-938.

21. Moshier, S.J. et al. (2019). An Empirical Crosswalk for the PTSD Checklist: Translating *DSM-IV* to *DSM-5* Using a Veteran Sample. *Journal of Traumatic Stress*. 32, 799-805.

22. Rosen, R.C., Marx, B.P. Keane, T.M. (2019). Project VALOR – Exploring PTSD Risk Factors and Outcomes in Combat-exposed Veterans. Health and Medicine, Social Sciences.

23. Marshall, G.N. et al. (2019). PTSD symptoms are differentially associated with general distress and physiological arousal: Implications for the conceptualization and measurement of PTSD. Journal of Anxiety Disorders. 62, 26-34.

24. Rosen, R.C. et al. (In-Press). Posttraumatic Stress Disorder Severity and Insomnia-Related Sleep Disturbances: Longitudinal Associations in a Large, Gender-Balanced Cohort of Combat-Exposed Veterans. *Journal of Traumatic Stress*.

25. Bovin, M.J. et al. (2019). The Impact of Assessment Modality and Demographic Characteristics on Endorsement of Military Sexual Trauma. *Women's Health Issues*. 29- S1, S67-S73.

26. Lee, D.J. et al. (Under Review). The Twenty-Year Course of Posttraumatic Stress Disorder Symptoms among Veterans. *Journal of Abnormal Psychology*.

27. Mahoney, C.T. et al. (Under Review). Parallel process modeling of PTSD symptoms and alcohol use severity in returning veterans. *Psychology of Addictive Behaviors.*

PRESENTATIONS

Bovin, M. J., Wisco, B. E., Holowka, D. W., Marx, B. P., Gates, M. A., Guey, L. T., Rosen, R. C., & Keane, T. M. (April 2012) Peritraumatic response, PTSD and functional impairment among OEF/OIF veterans. Paper presented at the 32nd annual meeting of the Anxiety Disorders Association of America, Arlington, VA.
Fink, H. L., Han, S. C., Franz, M. R., Chen, M. S., Holowka, D. W., Marx, B. M., Gates, M. A., Rosen, R. C. & Keane, T. M. (April 2012) Post-Deployment Social Support as a Mediator Between Military Sexual Trauma and PTSD among OIF/OEF Veterans. Poster presented at 32nd Annual Anxiety Disorders Association of America, Arlington, VA.

Lachowicz, M., Gorman, K., Holowka, D., Gates, M., Rosen, R., Marx, B., Keane, T. (April 2012) Posttraumatic Stress and Depressive Symptoms in a Sample of Returning OIF/OEF Veterans. Poster presented at 32nd Annual Anxiety Disorders Association of America, Arlington, VA.

Holowka, D.W., Marx, B.P., Chen, M.S., Ranganathan, G., Gates, M.A., Rosen, R.C., Vasterling, J.J. & Keane, T.M. (June 2012). Posttraumatic Stress Disorder, Mild Traumatic Brain Injury, & Psychosocial Functioning among Iraq and Afghanistan Veterans. Poster presented at Boston Consortium TBI/PTSD Lecture Series, Boston, MA.

Marx, B.P., Holowka, D.W., Gates, M.A., Guey, L. Rosen, R.C., Vasterling, J.J. & Keane, T.M. (August 2012). Posttraumatic Stress Disorder, Mild Traumatic Brain Symposium presented at American Psychological Association, Chicago, IL.

Rosen, R.C., Gates, M.A., Holowka, D.W., Marx, B.P., Vasterling, J.J., & Keane, T.M. (August 2012). Psychosocial Outcomes in OEF/OIF Veterans with PTSD. Poster presented at 2012 Military Health System Research Symposium, Fort Lauderdale, FL.

Chen, M.S., Han, S.C., Holowka, D.W., Marx, B.P., Gates, M.A., Rosen, R.C. & Keane, T.M. (November 2012). Problem Drinking Moderates the Effect of Social Support on PTSD and Suicide Risk. Poster presented at International Society for Traumatic Stress Studies, Los Angeles, CA.

Chen, M.S., Holowka, D.W., Marx, B.P., Gates, M.A., Rosen, R.C. & Keane, T.M. (November 2012). Anger Mediates the Relationship between Combat Exposure and Functioning. Poster presented at International Society for Traumatic Stress Studies, Los Angeles, CA.

Han, S.C., Chen, M.S., Fink, H.L., Holowka, D.W., Marx, B.P., Gates, M.A., Rosen, R.C. & Keane, T.M. (November 2012). PTSD Symptoms and Parental Functioning among Male and Female OEF/OIF Veterans. Poster presented at International Society for Traumatic Stress Studies, Los Angeles, CA.

Lachowicz, M.J., Franz, M.R., Gorman, K.R., Holowka, D.W., Marx, B.P., Gates, M.A., Rosen, R.C., Keane, T.M. (November 2012). Deployment and post-deployment experiences in Iraq-deployed soldiers: comparison of soldiers deployed during the Iraq invasion, insurgency, and surge. Poster presented at Association for Behavioral and Cognitive Therapies, National Harbor, MD.

Holowka, D.A. (April 2013). Concordance between PTSD diagnoses in electronic medical records and standardized diagnostic interviews among veterans deployed to Iraq and Afghanistan. Presentation at Anxiety Disorders and Depression Conference, La Jolla, CA.

Keane, T.M. and Rosen, R.C. (Symposium Chairs). (April 2013). The impact and outcomes of PTSD on combat exposed veterans: Project VALOR. Presentation at Anxiety Disorders and Depression Conference, La Jolla, CA.

Keane T.M. (April 2013). Prevalence and latent structure of proposed DSM-5 Posttraumatic Stress Disorder symptoms among veteran enrolled in Project VALOR. Presentation at Anxiety Disorders and Depression Conference, La Jolla, CA.

Marx, B.P. (April 2013). Posttraumatic Stress Disorder, mild traumatic brain injury and psychosocial functioning among Iraq and Afghanistan veterans. Presentation at Anxiety Disorders and Depression Conference, La Jolla, CA.

Rosen, R.C. (April 2013). Gender effects in PTSD presentation and outcomes: findings from a large cohort of male and female OEF/OIF veterans in Project VALOR. Presentation at Anxiety Disorders and Depression Conference, La Jolla, CA.

Fang, S., Rosen, R., Holowka, D., Marx, B., Vasterling, J., Litman, H., Akeroyd, J., & Keane, T. (June 2013). Psychosocial Outcomes in OEF/OIF Veterans with PTSD: Initial Findings from the VALOR Registry. Presentation at Society for Epidemiologic Research, Boston, MA.

Kulish, A., Holowka, D., Marx, B., Fang, S., Rosen, R.,& Keane, T. (November 2013) The Influence of Race/Ethnicity and Gender on Psychosocial Functioning in Combat-Exposed Veterans Post- OEF/OIF Deployment. Presentation at 47th Annual Convention, Association for Behavioral and Cognitive Therapies, Nashville, TN.

Engel-Rebitzer, E., Holowka, D., Rosen, R., Marx, B.P & Keane, T.M. (December 2013) Peritraumatic Anger and Current PTSD. Poster at Second Annual BUMC and VA Boston Joining Forces TBI/PTSD Conference, Boston, MA.

Engel-Rebitzer, E., Bovin, M., Marx, B.P, Rosen, R. & Keane, T.M. (May 2014). Peritraumatic Numbness and Posttraumatic Stress Disorder. Poster at VA Research Week, Boston, MA.

Ledoux, A.M., Green, J.D., Harte, C.B., Marx, B.P., Rosen, R.C. & Keane, T.M. (May 2014). Associations between posttraumatic stress, TBI and sexual function in male OIF/OEF veterans. Poster at National Veterans Affairs Research Week, Boston, MA.

Engel-Rebitzer, E., Marx, B.P, Szafranski, D., Gallagher, M., Holowka, D., Rosen, R. & Keane, T.M. (March 2014). Race as a Predictor of Concordance between PTSD Diagnosis and Service Connection for PTSD. Poster at 7th Annual Anxiety and Depression Association of America Conference, Chicago, IL.

Ledoux, A.M., Green, J.D., Harte, C.B., Marx, B.P., Rosen, R.C. & Keane, T.M. (March 2014). Posttraumatic stress disorder symptom severity as a predictor of sexual function in OIF/OEF veterans**.** Poster at 7th annual Anxiety and Depression Association of America conference, Chicago, IL.

Bovin, M.J., Green, J.D., Marx, B. P., Keane, Litz, B.T., T. M. & Rosen, R.C. (November 2014). The association between military trauma types and psychopathology among OIF/OEF veteran. Paper in sympoisum at International Society for Traumatic Stress Studies 30th Annual Meeting. Miami, FL.

Engel-Rebitzer, E. (Novemebr 2014). Predictors of Concordance and Discordance between PTSD Diagnosis and Service Connection for PTSD. Paper in 30th Annual Meeting of the International Society for Traumatic Stress Studies, Miami, FL.

Engel-Rebitzer, E., Bovin, M., Marx, B., Rosen, R. & Keane, T. (November 2014). Peritraumatic Numbness as a Longitudinal Predictor of PTSD and MDD. Poster at 48th Annual Convention of the Association for Behavioral and Cognitive Therapies, Philadelphia, PA.

Ledoux, A.M., Green, J.D., Harte, C.B., Marx, B.P., Rosen, R.C. & Keane, T.M. (November 2014). Symptoms of PTSD as Predictors of Sexual Function in OIF/OEF Veterans. Poster at 48th Annual Convention of the Association for Behavioral and Cognitive Therapies, Philadelphia, PA.

Green, J., Marx, B., Bovin, M., Rosen, R & Keane, T. (August 2015). Veterans' Barriers to Help Seeking: Relationship Between Sex and Mental Health Service Utilization. Presentation at American Psychological Association, Toronto, CAN.

Green, J., Jackson, C., Kearns, J., Black, S., Marx, B., Rosen, R. & Keane, T. (August 2015). Evaluating the Effects of Safety Plans and High Risk for Suicide Flags on Suicide Risk and Related outcomes in Operation Enduring Freedom and Operation Iraqi Freedom Veterans. Poster at Military Health System Research Symposium, Fort Lauderdale, FL.

Rosen, R., Breyer, B., Seal, K., Fang, S., Marx, B. & Keane, T. (August 2015). PTSD and Sexual Dysfunction in Operation Iraqi Freedom/Operation Enduring Freedom Combat Veterans: Gender Differences in Self-Report and Medical Record Results in Project VALOR. Poster at Military Health System Research Symposium, Fort Lauderdale, FL.

Rosen, R.C., Fang, S., Wilkinson, A., Marx, B.P. & Keane, T.M. (August 2015). Sleep Health and Sleep Disturbances in Combat-Exposed, OIF/OEF Veterans: Relationship to Medical and Psychosocial Outcomes. Poster at Military Health System Research Symposium, Fort Lauderdale, FL.

Fang,S., Schnurr, P.P., Kulish, A.L., Holowka, D.W., Marx, B.P., Keane, T.M. & Rosen, R.C. (August 2015). Psychosocial functioning and health-related quality of life associated with posttraumatic stress disorder in male and female Iraq and Afghanistan war veterans: the VALOR Registry. Poster at Military Health System Research Symposium, Fort Lauderdale, FL.

Erb, S., Bovin, M., Annunziata, A., Marx, B., Rosen, R. & Keane, T. (August 2015). The Impact of Demographic Variables, Comorbid Diagnoses, Psychosocial Impairment, and Service Connected Status on Psychotherapy Utilization among Veterans Diagnosed with PTSD. Poster at Military Health System Research Symposium, Fort Lauderdale, FL.

Black, S., Erb, S., Bovin, M., Green, J., Marx, B., Rosen, R. & Keane, T. (November 2015). Utility of repeated screening for Military Sexual Trauma. Presentation at International Society for Traumatic Stress Studies, New Orleans, LA.

Bovin, M., Black, S., Erb, S., Street, A., Marx, B., Rosen, R. & Keane, T. (November 2015). Reports of Military Sexual Trauma Among Returning Veterans: Who are we missing? Poster at International Society for Traumatic Stress Studies, New Orleans, LA.

Bovin, M.J., Marx, B.P., Black, S.K., Barretto, K.M., Schnurr, P.P., Rosen, R.C. & Keane, T.M. (November 2015). Understanding Unemployment Longitudinally Among Returning Veterans. Poster at International Society for Traumatic Stress Studies, New Orleans, LA.

Erb, S.E., Bovin, M.J., Black, S., Marx, B.P., Rosen, R.C. & Keane, T.M. (November 2015). Social Support and PTSD in Veterans with and without Exposure to Military Sexual Assault. Poster at International Society for Traumatic Stress Studies, New Orleans, LA.

Green, J.D., Kearns, J.C., Marx, B.P., Rosen, R.C. & Keane, T.M. (November 2015). Risk Factors and Correlates of the PTSD Dissociative Subtype. Presentation at International Society for Traumatic Stress Studies, New Orleans, LA.

Gorman, K.R., Kearns, J.C., Green, J.D., Rosen, R.C., Keane, T.M. & Marx, B.P. (November 2015). Prevalence Rates of Military Sexual Trauma in a Sample of LGBQ Combat-Exposed Veterans. Poster at International Society for Traumatic Stress Studies, New Orleans, LA.

Marx, B.P., Green, J.D., Bovin, M.J., Wolf, E.J., Annunziata, A.M., Rosen, R.C. & Keane, T.M. (November 2015). Risk Factors and Correlates of the PTSD Dissociative Subtype. Poster at International Society for Traumatic Stress Studies, New Orleans, LA.

Erb, S.E, Green, J.D., Bovin, M.J., Marx, B.P., Keane, T.M. & Rosen, R.C. (November 2015). The effect of combat tactics on PTSD Prevalence: A comparison of Operation Iraqi Freedom Deployment Phases in a sample of male and female veterans. Poster at 49th Annual Association of Behavioral and Cognitive Therapies, Chicago, IL.

Green, J., Bovin, M., Wolf,W., Annunziata, A., Marx, B., Rosen, R. & Keane, T. (November 2015). Risk Factors and Correlates of the PTSD Dissociative Subtype. Presentation at 49th Annual Association of Behavioral and Cognitive Therapies, Chicago, IL.

Green, J., Bovin, M., Marx, B., Rosen, R. & Keane, T. (November 2015). Longitudinal Predictors of Help-Seeking Behaviors in OEF/OIF/OND Veterans. Presentation at 49th Annual Association of Behavioral and Cognitive Therapies, Chicago, IL.

Black, S. K., Erb, S. Green, J. D., Bovin, M., Sloan, D. M., & Marx, B. (November 2015). Alcohol consumption, emotional regulation, and reactivity in sexual revictimization. Presentation at 49th Annual Association of Behavioral and Cognitive Therapies, Chicago, IL.

Kearns, J.C., Green, J.D., Gorman, K.R., Barretto, K.M., Rosen, R.C., Marx, B.P. & Keane, T.M. (November 2015). Anger and Suicide Risk in a National Sample of Combat-Exposed Iraq and Afghanistan Veterans. Poster at 49th Annual Association of Behavioral and Cognitive Therapies, Chicago, IL.

Barretto, K.M., Clark, J.B., Black, S.K., Bovin, M.J., Marx, B.P., Rosen, R.C., & Keane, T.M. (November 2015). Sex differences between self-report and clinician-assessed Military Sexual Trauma (MST) in Operation Enduring Freedom (OEF) & Operation Iraqi Freedom (OIF) Veterans. Poster at 49th Annual Association of Behavioral and Cognitive Therapies, Chicago, IL.

Klein, A.B., Moshier, S.J., Parker-Guilbert, K.S., Bovin, M.J., Schnurr, P.P., Friedman, M.J., Rosen, R.C., Keane, T.M. & Marx, B.P. (March 2016). Subthreshold DSM-5 posttraumatic stress disorder among a sample of veterans. Poster at ADAA Annual Conference, Philadelphia, PA.

Marx, B.P. (March 2016). Suicide risk and resliency in active duty military personnel and returning military veterans. Symposoium at ADAA Annual Conference, Philadelphia, PA.

Cikesh, B., Rosen, R.C., Wilkinson, A.M., Bliwise, D., Seal, K., Trachtenberg F.L., Marx, B.P. & Keane, T.M. (August 2016). Sleep Health and Sleep Disturbances in Combat-Exposed OIF/OEF Veterans: Longitudinal Findings from Project VALOR. Poster at Military Health System Research Symposium, Kissimmee, FL.

Parker-Guilbert K.S., Erb, S., Moshier, S.J., Trachtenberg F.L., Rosen, R.C., Keane, T.M. & Marx, B.P. (August 2016). The Influence of PTSD Service Connection on Mental Health Treatment Utilization. Poster at Military Health System Research Symposium, Kissimmee, FL.

Trachtenberg F.L., Rosen, R.C., Marx, B.P., Fang, S.C., Karen Seal, Bovin, M.J., Green, J.D., Moshier,S., K Parker-Guilbert, K., Wilkinson, A.M/ & Keane, T.M (August 2016). Accuracy of PTSD diagnosis and mental health service utilization: Longitudinal Findings from Project VALOR. Poster at Military Health System Research Symposium, Kissimmee, FL.

Trachtenberg F.L., Rosen, R.C., Marx, B.P., Fang, S.C., Karen Seal, Bovin, M.J., Green, J.D., Moshier,S., K Parker-Guilbert, K., Wilkinson, A.M/ & Keane, T.M (August 2016). Mental health treatment utilization among male and female

combat-exposed OEF/OIF veterans with and without PTSD. Poster at Military Health System Research Symposium, Kissimmee, FL.

Black, S.K., Harwell, A.M., Klein, A.B., Bovin, M.J., Green, J.D., Keane, T.M. Rosen, R.C., & Marx, B.P. (October 2016). Implications of the recent and upcoming diagnostic changes to posttraumatic stress disorder: A comparison of DSM-5 and ICD-11. Poster at Association for Behavioral and Cognitive Therapy 50th Annual Meeting, New York, NY.

Green, J.D., Kearns, J.C., Marx, B.P., Nock, M.K., Rosen, R.C., & Keane, T.M. (October 2016). Evaluating safety plan effectiveness: Do safety plans tailored to individual veteran characteristics decrease risk. Symposium at Association for Behavioral and Cognitive Therapy 50th Annual Meeting, New York, NY.

Gorman, K.R., Klein, A.B., Kearns, J.C., Parker-Guilbert, K.S., Bovin, M.J., Rosen, R.C., Keane, T.M. & Marx, B.P. (October 2016). Comparison of PTSD and depression in sexual minority and non-sexual minority female veterans exposed to military sexual assault, combat, and harassment. Poster at Association for Behavioral and Cognitive Therapy 50th Annual Meeting, New York, NY.

Harwell, A.M., Klein, A.B., Erb, S.E., Green, J.D., Holowka, D.W., Barretto, K.M., Bovin, M.J., Marx, B.P., Keane, T.M. & Rosen, R.C. (October 2016). Wartime atrocity exposure and PTSD symptom severity among OEF/OIF veterans: Evaluating the role of gender. Poster at Association for Behavioral and Cognitive Therapy 50th Annual Meeting, New York, NY.

Klein, A.B., Green, J.D., Gorman, K.R., Bovin, M.J., Rosen, R.C., Keane, T.M. & Marx, B.P. (October 2016). Associations between childhood trauma and the dissociative sexual type of PTSD in OEF/OIF veterans. Poster at Association for Behavioral and Cognitive Therapy 50th Annual Meeting, New York, NY.

Liang, J.J., Romano, A.S., Klein, A., Harwell, A., Bovin, M.J., Green, J.D., Marx, B.P. & Rasmusson, A.M. (November 2016). VALOR investigation of reproductive/ gynecological health problems among deployed women veterans exposed to military sexual trauma. Joining Forces Conference. Boston, MA.

Bovin, M.J., Black, S.K., Rodriguez, P., Lunney, C.A., Weathers, F.W., Schnurr, P.P., Keane, T.M. & Marx, B.P. (November 2016). The Inventory of Psychosocial Functioning (IPF): Development and utility of a measure of PTSD-specific impairment. Paper presented as part of symposium at International Society for Traumatic Stress Studies, 32nd Annual Meeting, Dallas, TX.

Harwell, A.M., Moshier, S.J., Klein, A.B., Rosen, R.C., Keane, T.M. & Marx, B.P. (November 2016). Wartime atrocity exposure type, PTSD diagnosis and symptom severity prediction among OEF/OIF Veterans. Poster at International Society for Traumatic Stress Studies, 32nd Annual Meeting, Dallas, TX.

Klein, A.B., Moshier, S.J., Harwell, A.M., Rosen, R.C., Keane, T.M. & Marx, B.P. (November 2016). Associations between treatment satisfaction and one-year

clinical outcomes in OEF/OIF veterans with PTSD. Poster at International Society for Traumatic Stress Studies, 32nd Annual Meeting, Dallas, TX.

Marx, B.P., Bovin, M.J., Lee, D., Parker-Guilbert, K., Rosen, R.C. & Keane, T.M. (November 2016). Examining the longitudinal associations among functional impairment, quality of life outcomes, and PTSD status with OEF/OIF veterans. Paper presented as part of symposium at International Society for Traumatic Stress Studies, 32nd Annual Meeting, Dallas, TX.

Mitchell, K.S., Wolf, E.J., Bovin, M.J., Lee, L., Green, J.D., Rosen, R.C., Keane, T.M. & Marx, B.P. (November 2016). Network models of DSM-5 posttraumatic stress disorder: Implications for ICD-11. Paper at International Society for Traumatic Stress Studies, 32nd Annual Meeting, Dallas, TX.

Moshier, S.J., Erb, S., Parker-Guilbert, K., Trachtenberg, F., Rosen, R.C., Keane, T.M., & Marx B.P. (November 2016). Less symptomatic but more impaired: Correlates of early treatment termination among returning veterans with PTSD. Poster at International Society for Traumatic Stress Studies, 32nd Annual Meeting, Dallas, TX.

Moshier, S.J., Klein, A.B., Harwell, A.M., Parker-Guilbert, K., Erb, S., Trachtenberg, F., Rosen, R.C., Keane, T.M., Marx, B.P. (November 2016). Who can't get no satisfaction? Satisfaction with VA and non-VA mental health care among OIF/OEF veterans with PTSD. Poster at International Society for Traumatic Stress Studies, 32nd Annual Meeting, Dallas, TX.

Green, J.D., Parker-Guilbert, K.S., Marx, B.P., Rosen, R.C., Keane, T.M. (April 2017). Mental Health Utilization in OEF/OIF Veterans: The Role of Diagnostic Accuracy and Service Connection as Determinants of Care Seeking. Presentation as part of symposium at Anxiety and Depression Association of America, 37th Annual Meeting, San Francisco, CA.

Keane, T.M., Rosen, R.C., Marx, B.P., Wiltsey-Sterman, S., Nugent, K., Green, J. & Ruzek, J. (April 2017). PTSD Treatment among Military Service Members and Veterans: Determinants of Service Utilization and Outcomes. Presentation as part of symposium at Anxiety and Depression Association of America, 37th Annual Meeting, San Francisco, CA.

Klein, A.B., Bovin, M.J., Brown, M.E. Rosen, R.C., Keane, T.M., & Marx, B.P. (April 2017). Associations Among Dimensions of Childhood Adversity and Internalizing and Externalizing Symptoms in a Sample of OEF/OIF Veterans. Presentation at Anxiety and Depression Association of America, 37th Annual Meeting, San Francisco, CA.

Marx, B.P., Trachtenberg, Green, J., F., Fang, Bovin, M., Seal, K., Moshier, S., Wilkinson, A., Kleiman, S., Ranganathan, G., Keane, T., Rosen, R.C. (April 2017). Determinants of Care Seeking and Mental Health Utilization among OIF/OEF Veterans: The Role of Gender, Co-Morbidities and PTSD Diagnosis. Presentation as part of symposium at Anxiety and Depression Association of America, 37th Annual Meeting, San Francisco, CA.

Moshier, S.J., Klein, A.B., Kleiman, S., Parker-Guilbert, K., Harwell, A.M., Trachtenberg, F., Rosen, R.C., Keane, T.M., & Marx, B.P. (April 2017). Treatment satisfaction and early termination in US veterans seeking treatment for PTSD. Presentation as part of symposium at Anxiety and Depression Association of America, 37th Annual Meeting, San Francisco, CA.

Pedersen, S.R., Bovin, M.J., Klein, A.B., Jackson, C.E., Green, J.D., Harwell, A.H., Rosen, R.C., Keane, T.M., Marx, B.P. (May 2017). The influence of veteran gender on applying for and receiving TBI-related service connection. Poster at Association for Psychological Science (APS) Annual Convention, 29th Annual Convention, Boston, MA.

Brown, M.E., Klein, A.B., Harwell, A.M., Pedersen, S.R., Lee, D.J., Bovin, M.J., Rosen, R.C., Keane, T.M. & Marx, B.P. (June 2017). Childhood abuse as a predictor of military sexual trauma. Paper presented as part of symposium at European Society for Traumatic Stress Studies 15th Annual Meeting. Odense, Denmark.

Green, J.D., Hatgis, C., Kearns, J.C., Nock, M.K. & Marx, B.P. (June 2017). Using the Direct and Indirect Self-Harm Inventory (DISH) to explore differences in self-harm among male and female veterans. Paper presented as part of symposium at International Society for the Study of Self-Injury, 12th annual meeting, Philadelphia, PA.

Brown, M.E., Pedersen, S.R., Green, J.D., Kearns, J.C., Rosen, R.C., Keane, T.M. & Marx, B.P. (August 2017). Suicide Prevention & Treatment – Evaluating the Effectiveness of Safety Plans for Military Veterans: Do Safety Plans Tailored to Veteran Characteristics Decrease Suicide Risk? Poster at Military Health Services Research Symposium, Kissimmee, FL.

Pedersen, S.R., Brown, M.E., Moshier, S.J., Kleiman, S.E., Parker-Guilbert, K.S., Seal, K., Trachtenberg, F., Magnavita, A., Rosen, R.C., Keane, T.M. & Marx, B.P. (August 2017). Complementary and Integrative Health Approaches: Engagement and Interest in Veterans with Posttraumatic Stress. Poster at Military Health Services Research Symposium, Kissimmee, FL.

Rosen, R.C., Green, J.D., Bovin, M.J., Kleiman, S., Moshier, S., Magnavita, A., Ranganathan, G., Trachtenberg, F., Marx, B.P. & Kean, T.M. (August 2017). Optimizing enrollment, retention and successful data collection in large, observational studies in military populations: The Project VALOR experience. Poster at Military Health Services Research Symposium, Kissimmee, FL.

Klein, A.B., Dutra, S.J, Bovin, M.J., Rosen, R.C., Keane, T.M. & Marx, B.P. (November, 2017). The Role of Negative Affect in PTSD Symptom Presentations. Poster presented at the International Society for Traumatic Stress Studies 33rd Annual Convention. Chicago, IL.

Pedersen, S.P., Kleiman, S.E., Klein, A.B., Green, J.D., Harwell, A.M., Rosen, R.C., Keane, T.M., & Marx, B.P. (November, 2017). Associations between PTSD severity and risky driving behaviors in male and female OEF/OIF veterans.

Poster presented at the International Society for Traumatic Stress Studies 33rd Annual Convention. Chicago, IL.

Lee, D. J., Kearns, J. C., Wisco, B. E., Green, J. D., Gradus, J. L., Sloan, D. M., Nock, M. K., Rosen, R. C., Keane, T. K., & Marx, B. P. (November, 2017). Independent and cumulative associations between risk factors and subsequent suicide attempts among Operation Enduring Freedom and Operation Iraqi Freedom veterans. Symposium presented at the 33rd annual convention of the International Society for Traumatic Stress Studies, Chicago, IL.

Klein, A. B., Dutra, S. J., Bovin, M. J., Rosen, R. C., Keane, T. M. & Marx, B. P. (November, 2017). The Role of Negative Affect in PTSD Symptom Presentations. Poster presented at the 33rd annual meeting of the International Society for Traumatic Stress Studies, Chicago, IL.

Green, J. D., Lee, D. J., Rosen, R. C., Keane, T. M., & Marx, B. P. (November, 2017). Longitudinal Prediction of Non-Suicidal Self-Injury among Operation Enduring Freedom and Operation Iraqi Freedom Veterans. Symposium presented at the 33rd annual convention of the International Society for Traumatic Stress Studies, Chicago, IL.

Bovin, M.J., Moshier, S.J., Rosen, R.C., Keane, T.M. & Marx, B.P. (March 2018). The Impact of PTSD Treatment Volitional Non-Attendance on Changes in Clinical Outcomes. Presentation at Anxiety and Depression Association of America, 39th Annual Meeting, Chicago, IL.

Lee, D. J., Nock, M. K., Sloan, D. M., Rosen, R. C., Keane, T. M. & Marx, B. P. (March 2018). Differential association between risk factors and future suicide attempts among demographically homogenous groups of OEF/OIF veterans. Symposium at Presentation at Anxiety and Depression Association of America, 39th Annual Meeting, Chicago, I.

Moshier, S.J., Bovin, M.J., Kleiman, S., Abdulkerim, H., Rosen, R.C., Keane, T. M. & Marx, B. P. (March 2018). Understanding VA psychotherapy utilization and clinical outcomes in veterans with PTSD. Presentation at Anxiety and Depression Association of America, 39th Annual Meeting, Chicago, IL.

Bovin, M. J., Klein, A. B., Sanyal, S., Brown, M. E., Rosen, R. C., Keane, T. M., & Marx, B. P. (April, 2018). Comparing PTSD diagnostic status according to DSM-IV versus DSM-5: How do concordant and discordant groups differ? In B. P. Marx (Chair), Understanding the nature and course of posttraumatic stress disorder symptoms: Implications of assessment and measurement strategies. Symposium presented at the annual convention of the Anxiety and Depression Association of America, Washington, DC.

Lee, D. J., Lee, L. O., Bovin, M. J., Green, J. D., Klein, A. B., Rosen, R. C., Keane, T. M., & Marx, B. P. (April, 2018). Examination of the nature and longitudinal course of PTSD and depression symptoms among OEF/OIF veterans: Preliminary results from the Veterans After-Discharge Longitudinal Registry (Project VALOR). In B. P. Marx (Chair), Understanding the nature and course of posttraumatic stress disorder symptoms: Implications of assessment

and measurement strategies. Symposium presented at the annual convention of the Anxiety and Depression Association of America, Washington, DC.

Moshier, S.J., Bovin, M.J., Kleiman, S.E., Lee, D.J., Sloan, D.M., Keane, T.M. & Marx, B.P. (April, 2018). Performance of the PCL-5 relative to the CAPS-5 in the assessment of individual PTSD symptoms. Presentation at Anxiety and Depression Association of America, 38th Annual Meeting, Washington, DC.

Rosen, R.C., Trachtenberg, F., Bovin, M.J., Moshier, S.J., Ranganathan, G., Magnavita, A., Marx, B.P., & Keane, T.M. (April, 2018). Trajectories of Diagnosis and Course of PTSD Outcomes: Implications of Assessment and Measurement Strategies using CART Methodology. In B. P. Marx (Chair), Understanding the nature and course of posttraumatic stress disorder symptoms: Implications of assessment and measurement strategies. Symposium presented at the annual convention of the Anxiety and Depression Association of America, Washington, DC.

Gauthier, G.M., Moshier, S.J., Zax, A.M., Bovin, M.J., Keane, T.M., & Marx, B.P. (April, 2018). Evaluating the association between cigarette smoking and suicide in veterans with PTSD. Poster presented at the 38th annual convention of the Anxiety and Depression Association of America. Washington, D.C.

Zax, A., Moshier, S., Gauthier, G., Bovin, M., Keane, T., Marx, B. (April, 2018). Clinical correlates of the Childhood Trauma Questionnaire Minimization and Denial Subscale in a sample of OEF/OIF veterans. Poster presented at the 38th annual convention of the Anxiety and Depression Association of America. Washington, D.C.

Brown, M. E., Klein, A. B., Harwell, A. M., Pedersen, S. R., Lee, D. J., Bovin, M. J., Rosen, R. C., Keane, T. M., & Marx, B. P. (May, 2018). Childhood abuse as a predictor of military sexual trauma. Poster presented at the annual meeting of the National Veterans Affairs Research Week, Boston, MA.

Pedersen, S.R., Gorman, K.R., Rosen, R.C., Keane, T.M., & Marx, B. P. (August, 2018). Examination of factors associate with future homelessness among OEF/OIF veterans. Poster presented at the 126th Annual Convention of the American Psychological Association (APA), San Francisco, CA.

Moshier, S.J., Kleiman, S.E., Abdulkerim, H., Bovin, M.J., Zax, A., Gauthier, G., Bertenthal, D., Magnavita, A., Rosen, R.C., Keane, T.M., Marx, B.P. (August, 2018). Demographic predictors of psychotherapy utilization at VA hospitals among veterans diagnosed with posttraumatic stress disorder: Who gets an adequate dose? Poster presented at the Military Health System Research Symposium (MHSRS), Orlando, FL.

Rosen, R.C, Cikesh, B., Trachtenberg, F., Magnavita, A., Fang, S., Seal, K., Bliwise, D., Green, J., Bovin, M.J., Marx, B.P., Keane, T.M. (August 2019). Posttraumatic Stress Disorder Severity and Insomnia-Related Sleep Disturbances: Longitudinal Associations in a Large, Gender-Balanced Cohort of

Combat Exposed Veterans. Presentation at Military Health Services Research Symposium, Kissimmee, FL.

Thompson-Hollands, J., Lee, D. J., Rosen, C. S., Keane, T. M., & Marx, B. P. (2019, November). *Trajectories and predictors of functioning among OEF/OIF veterans enrolled in VA care.* In J. Thompson-Hollands (Chair), Looking beyond symptom change: Attending to functioning in PTSD. Symposium presented at the 35th annual convention of the International Society for Traumatic Stress Studies (ISTSS), Boston, MA.

Lee, D. J., Nock, M. K., Sloan, D. M., Rosen, R. C., Keane, T. M., & Marx, B. P. (2019, March). *Differential association between risk factors and future suicide attempts among demographically homogenous groups of OEF/OIF veterans*. Symposium presented at the 39th annual convention of the Anxiety and Depression Association of America, Chicago, IL.

Bovin, M. J., Moshier, S. J., Rosen, R. C., Keane, T. M., & Marx, B. P. (March 2019). The impact of PTSD treatment no shows on changes in clinical outcomes. Paper presented as part of a symposium (Examining Assumptions Across PTSD Treatment; Chair: M. J. Bovin) at the annual convention of the Anxiety and Depression Association of America, Chicago, IL.

Moshier, S. J., Bovin, M. J., Kleiman, S. E., Abdulkerim, H., Rosen, R. C., Keane, T. M., & Marx, B. P. (March 2019). Understanding VA psychotherapy utilization and clinical outcomes in veterans with PTSD. Paper presented as part of a symposium (Examining Assumptions Across PTSD Treatment; Chair: M. J. Bovin) at the annual convention of the Anxiety and Depression Association of America, Chicago, IL.

Brown, M. E., Bovin, M. J**.**, Mahoney, C. T., Rosen, R. C., Keane, T. M., & Marx, B. P. (August 2019). Association between trauma-related externalizing behaviors and criminal activity in OEF/OIF/OND veterans. Poster presented at the 11th Annual Meeting of the Military Health System Research Symposium, Orlando, FL.

Brown, M. E., Bovin, M. J., Rosen, R. C., Keane, T. M., & Marx, B. P. (March 2019). Association between trauma-related externalizing behaviors and criminal activity in OEF/OIF/OND veterans. Poster presented at the annual convention of the Anxiety and Depression Association of America, Chicago, IL.

Moshier, S.J., Bovin, M.J., Kleiman, S., Abdulkerim, H., Rosen, R.C., Keane, T.M., & Marx, B.P. (2019, March). *Understanding VA psychotherapy utilization and clinical outcomes in veterans with PTSD.* In M.J. Bovin (Chair), Examining Assumptions Across PTSD Treatment. Symposium presented at the 39th annual convention of the Anxiety and Depression Association of America, Chicago, IL.

Moshier, S.J., Abdulkerim, H., Rosen, R.C., Keane, T.M., & Marx, B.P. (2019, November). *Predictors of benzodiazepine prescription among OIF/OEF veterans*

with PTSD. Flash talk presented at the 35th annual meeting of the International Society for Traumatic Stress Studies, Boston, MA.

7. INVENTIONS, PATENTS AND LICENSES:

N/A

8. REPORTABLE OUTCOMES:

All the study aims were achieved and objectives met. Please refer to #4 above (Key Research Outcomes).

Public use dataset was delivered to NIH for download and use by others outside Project VALOR team.

9. OTHER ACHIEVEMENTS:

Nothing to report

10. REFERENCES

N/A

11. APPENDICES

Attached