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Award Number: W81XWH-08-2-0031

TITLE: Identification of and At-Risk Interventions for Pre-Deployment Psychophysiologic Predictors of PostDeployment Mental Health Outcomes

PRINCIPAL INVESTIGATOR: Jeffrey M. Pyne, MD

CONTRACTING ORGANIZATION:
Biomedical Research Foundation, Little Rock

Little Rock, AR 72205

REPORT DATE: June 2014

TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
June 2014	Final	15 Sep 2008 – 14 Mar 2014

4. TITLE AND SUBTITLE
Identification of and At-Risk Interventions for Pre-Deployment Psychophysiologic Predictors of PostDeployment Mental Health Outcomes

5a. CONTRACT NUMBER

5b. GRANT NUMBER
W81XWH-08-2-0031

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Jeffrey M. Pyne – PyneJeffreyM@uams.edu

Regina Stanley – Regina.Stanley2@va.gov
email: PyneJeffreyM@uams.edu

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Biomedical Research Foundation, Little Rock
Little Rock, AR 72205-5484

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U. S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

Objectives and Rationale: The primary objectives of this study (Warriors Achieving Resilience or WAR) were to develop objective pre-deployment predictors of PTSD and test two pre-deployment resiliency interventions. Objective predictors include: 1) physiologic reactivity to combat-related virtual reality environments and white noise startle and 2) cognitive bias assessment. We also will test two pre-deployment resiliency interventions: 1) video game-based heart rate variability biofeedback training and 2) computerized cognitive bias training. Objective assessment and training measures are more reliably measured and could be early indicators of resilience/vulnerability.

Study Design: Longitudinal prediction study and randomized controlled trial to prevent post-deployment PTSD symptoms. 600 soldiers were consented with the goal of completing 500 pre-deployment assessments. Pre-deployment data collection for was completed for 427 soldiers, 411 soldiers deployed. Subjects were randomized to one of three groups: heart rate variability (HRV) biofeedback training, cognitive bias feedback training, or no additional training. iPods with respective apps were provided to the soldiers in the resilience training groups. Follow-up data was collected at 3- and 12- months post-deployment, 308/411 (75%) and 236/411 (57%), respectively. PTSD symptom severity was measured using the PTSD Checklist.

Major Findings: Pre-deployment HRV (measured by the standard deviation of beat to beat intervals or SDNN) was a significant predictor of 3-month post-deployment PTSD symptoms. Low HRV is associated with increased physical and emotional stress. The time between pre-deployment SDNN and post-deployment PTSD symptom measurement was approximately one year. There was an expected inverse relationship between pre-deployment SDNN and 3-month post-deployment PTSD symptoms (beta=-0.002, p=0.006) in a multivariate model with a continuous measure of PTSD symptoms. When comparing the lowest SDNN quartile to the highest SDNN quartile the lowest SDNN quartile had 3.6 times greater odds of meeting or exceeding the PTSD threshold of 35. At 3-months post-deployment the HRV biofeedback group demonstrated significantly lower total PTSD scores compared to the control group in soldiers 26 years of age and older ($p<0.05$). There were no significant differences in the younger soldiers (25 years of age and younger) or in total PTSD scores at 12 months.

Soldiers were randomized at the company level to HRV biofeedback, cognitive bias feedback, or no feedback groups in order to minimize app sharing across intervention groups. In a multivariate model, there were significant two-way interactions (study group*time and study group*age where age was dichotomized using a median split at 26 years of age). The corresponding three-way interaction term (study group*time*age) was also significant. At 3-months post-deployment the HRV biofeedback group demonstrated significantly lower total PTSD scores compared to the control group in soldiers 26 years of age and older ($p<0.05$). There were no significant differences in the younger soldiers (25 years of age and younger) or in total PTSD scores at 12 months.

Project Status: Data collection complete, primary data analyses complete with ongoing secondary data analysis.

Potential Impact: Low pre-deployment HRV is a significant objective predictor of post-deployment PTSD symptom severity and HRV biofeedback decreases the risk of PTSD symptoms in soldiers 26 years of age and older. This study identified an objective risk factor and tested an intervention specific to this risk factor. The products from this study are an objective model for pre-deployment PTSD risk assessment and evidence to support HRV-based PSTD resiliency training.

15. SUBJECT TERMS

PTSD, Mental Health, Prevention, Prediction

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE	UU	128	USAMRMC
U	U	U			19b. TELEPHONE NUMBER *(include area code)*

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Introduction

The purpose of this research study is to identify objective pre-deployment predictors for post-deployment post-traumatic stress disorder (PTSD) and to test two pre-deployment interventions designed to reduce post-deployment mental health problems. A total of 600 Army National Guard or Reserve members who are planning to deploy for Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) operations within the next 12 months will be recruited for the study.

Body

All tasks outlined in the Statement of Work are addressed below.

Task 1: Complete IRB review and approval processes for this study (Mos. 1-4):

- Obtain IRB approval at Central Arkansas Veterans Healthcare System and sites for human subject data collection (Mos. 1-4). Pyne, CAVHS

Progress: Complete. This study received approval from the Central Arkansas Veterans Healthcare System (CAVHS) and DoD IRBs. Subjects were recruited from two Virginia National Guard units.

Gaining access to Army National Guard leadership to talk with them about participating in this study was more difficult than we had anticipated. Leaders from several states either refused to participate or did not have units deploying.

Task 2: Hire and train project coordinator and research assistants necessary to complete data collection (Mos. 1-9):

- Hire and train project coordinator and two research assistants (Mos. 1-6). Pyne, CAVHS
- Hire and train one research assistant (Mos. 1-6). Constans, SLVHCS

Progress: Complete. The project coordinator and research assistants were identified and/or hired and were trained to complete data collection.

Task 3: Modify existing virtual reality combat environments and interface with physiologic reactivity equipment (Mos. 1-6):

- Review with National Guard personnel at recruitment sites the most likely combat exposures for their personnel (Mos. 1-3). Pyne, CAVHS
- Modify virtual reality combat environments from existing library at VRMC to produce brief standardized virtual reality environments for study (Mos. 1-5). Wiederhold, VRMC
- Deliver virtual reality combat environments loaded on laptop computers with physiologic reactivity monitoring equipment interface (Mos. 6). Wiederhold, VRMC

Progress: Complete. Being transported in a convoy appeared to be the most ubiquitous combat exposure for OEF/OIF deployments. A virtual reality convoy scenario was developed and loaded on laptop computers.

Task 4: Modify existing video game stress inoculation biofeedback training for use in the study (Mos. 1-6):

- Modify existing video game stress inoculation biofeedback training (Mos. 1-6). Wiederhold, VRMC

- Deliver video game stress inoculation biofeedback training software on laptop computers (Mos. 6). Wiederhold, VRMC

Progress: Complete. The video game stress inoculation biofeedback training was adapted from a civilian version developed by Ease Interactive, Inc. and loaded on laptop computers.

Task 5: Modify existing cognitive bias assessment tool for use in military population (Mos. 1-6):

- Review with National Guard personnel the prototype military version of the cognitive bias assessment tool (Mos. 1-3). Constans, SLVHCS
- Modify existing non-military cognitive attribution bias assessment tool for use in military population (Mos.1-6). Constans, SLVHCS
- Load military cognitive bias assessment software loaded on laptop computers for use in proposed study (Mos. 6). Wiederhold, VRMC

Progress: Complete. The cognitive bias assessment tool was reviewed by approximately 15 National Guard and other deployed personnel. Modifications were made to make the scenarios more realistic and believable and loaded onto laptop computers.

Task 6: Modify existing cognitive attribution bias training for use in the proposed study (Mos. 1-6):

- Modify existing cognitive bias modification training for use in military population (Mos.1-5). Constans, SLVHCS
- Load cognitive bias modification training software on laptop computers and hand-held devices (Mos.6). Wiederhold, VRMC

Progress: Complete. The final laptop and handheld versions of the cognitive attribution bias training were completed and loaded onto laptop computers and handheld devices (iPod Touch). The training programs (Breath Pacer and IMAT apps) are available for downloading at the Apple Store.

Task 7: Train research assistants to deliver preventive trainings and collect pre-deployment data (Mos. 3-6):

- Train research assistants to deliver physiologic reactivity training (Mos. 3-6) Kimbrell, UAMS
- Train research assistants to collect cognitive bias data and deliver cognitive attribution training (Mos. 3-6) Constans, SLVHCS
- Train research assistants to collect pre-deployment data (Mos. 3-6) Kramer, UAMS

Progress: Complete. Several group training sessions were held to train research assistants. Individual training continued until the time of data collection.

Task 8: Pilot test virtual reality combat environment physiologic reactivity assessment, video game stress inoculation biofeedback training, cognitive bias assessment, and cognitive attribution bias training (Mos. 6-9):

- Pilot test above assessments and trainings in 10-20 civilian and OIF/OEF combat veterans (Mos. 6-9). Pyne, CAVHS
- Pilot testing will be completed without the use of DoD funding (Mos. 6-9). Pyne, CAVHS

- Make appropriate modifications to virtual reality combat environments and video game stress inoculation biofeedback training based on pilot testing results (Mos. 6-9). Wiederhold, VRMC
- Make appropriate modifications to cognitive bias assessment and training based on pilot testing results (Mos. 6-9). Constans, SLVHCS

Progress: Complete. The above trainings and assessments were pilot tested with approximately 15 civilian and OIF/OEF combat veterans. Modifications were based on feedback received and included changes in the virtual reality combat scene story boards and virtual reality environments to improve immersion and believability of portrayed military threats and the need to personalize cognitive bias scenarios.

Task 9: Collect pre-deployment physiologic reactivity and cognitive attribution bias data from Army National Guard members (N=500) (Mos. 9-15):

- Recruit and consent National Guard subjects within 6 months of OIF/OEF deployment (Mos. 9-15). Pyne, CAVHS
- Collect pre-deployment physiologic reactivity and cognitive attribution bias data (Mos. 9-15). Pyne, CAVHS

Progress: Complete. A protocol modification was approved to recruit 600 soldiers in order to complete 500 pre-deployment assessments because we realized that not all recruited soldiers would be able to complete a separate pre-deployment assessment. A total of 600 subjects were recruited from two Virginia Army National Guard units. Consenting took place during pre-deployment Solider Readiness Check (SRC) weekends. Of the 600 subjects that consented to be in the study, 427 completed pre-deployment baseline assessments during pre-deployment training. The remaining 173 subjects either voluntarily dropped from the study or did not contact research personnel to schedule appointments for their baseline assessment.

All baseline assessments were completed on an Army National Guard training base (Ft. Pickett, VA) during the time that the soldiers were completing their pre-deployment training. The major barrier to completing the assessments was the soldier's rigorous training schedules. That being said, soldiers were willing to complete assessments well into the early morning hours.

- Define baseline physiologic reactivity variables (Mos. 7-18). Tan, MEDVAMC
- Refine analysis plan for pre-deployment data (Mos. 7-18). Williams, UAMS

Progress: Pre-deployment data collection was completed in May 2011.

Task 10: Randomize pre-deployment National Guard members and/or Army reserve members to resiliency training or no intervention (Mos. 9-15):

- Use block randomization design to randomize pre-deployment National Guard and/or Army Reserve members to physiologic reactivity training, cognitive attribution training, or no intervention (Mos. 9-15). Pyne, CAVHS

Progress: Complete. See attached randomization procedures (Appendix A) and randomization results (Appendix B).

Task 11: Modify existing virtual reality civilian environments and interface with physiologic reactivity equipment (Mos. 18-24):

- Modify virtual reality civilian environments from existing library at VRMC to produce brief standardized civilian virtual reality environments for study (Mos. 18-23). Wiederhold, VRMC
- Deliver virtual reality civilian environments loaded on laptop computers with physiologic reactivity monitoring equipment interface (Mos. 24). Wiederhold, VRMC

Progress: Complete. The virtual reality civilian environment was modified to improve virtual reality immersion and the believability of the civilian stressors and loaded on laptop computers.

Task 12: Pilot test virtual reality civilian environment physiologic reactivity assessment (Mos. 24-27):

- Pilot test above assessments and trainings in 10-20 civilian and OIF/OEF combat veterans (Mos. 24-27). Pyne, CAVHS
- Pilot testing will be completed without the use of DOD funding (Mos. 24-27). Pyne, CAVHS
- Make appropriate modifications to virtual reality civilian environment based on pilot testing results (Mos. 24-27). Wiederhold, VRMC

Progress: Complete. The above assessment was been pilot tested with approximately 15 civilian and OIF/OEF combat veterans. Modifications were based on feedback received and included equal time (90 seconds) for the low and high simulated stress and fading to black screen at the completion of the virtual reality scenarios.

Task 13: Train research assistants to collect post-deployment data (Mos. 21-27):

- Train research assistants to collect post-deployment interview data (Mos. 21-27) Kramer, UAMS
- Train research assistants to collect post-deployment physiologic reactivity data (Mos. 21-27) Kimbrell, UAMS
- Train research assistants to collect cognitive bias data (Mos. 21-27) Constans, SLVHCS

Progress: Complete. Several group and individual training sessions were held to train research assistants to collect the post-deployment data. Training sessions were held for each individual task listed above to include role playing between research assistants until all were comfortable with the data collection procedures.

Task 14: Collect post-deployment data (Mos. 27-42):

- Collect 3-month post-deployment physiologic reactivity, cognitive attribution bias, and interview data (Mos. 27-33). Pyne, CAVHS

Progress: Complete: The 3-month (early post-deployment) data collection was completed on September 14, 2012. Assessments were completed both in-person and over the phone.

The pre-deployment data collection took an average of 1 hour and 20 minutes. The only physiologic reactivity measurement that was not done in follow-up was the eye-blink startle (the other acoustic startle measures were collected) and this did not change the time to any appreciable extent. Heart rate and skin conductance startle reactivity measures were collected but the eye-blink startle was not because the data recording rate is too slow to provide meaningful eye-blink response but is fine for heart rate and skin conductance. The Virginia Army National Guard advised us that a 2-hour post-deployment assessment was not feasible

and it would be best to keep it close to 1 hour and 30 minutes. Therefore, we deleted measures that either were duplicative to some degree or replaced longer with shorter measures in order to stay within this time frame. In addition, we collected physiologic reactivity data at the early post-deployment follow-up but not the one year post-deployment follow-up because physiologic reactivity data will be used to predict future symptoms and assessments beyond one year were not planned.

The in-person assessments (includes physio measurements) were completed during a total of 4 drill weekends and 1 Reverse SRP (Soldier Readiness Program). The major barriers to completing the in-person assessments were competing with the soldier's busy schedules and the amount of time required per assessment (1.5 hours per soldier). A total of 282 early post-deployment assessments were completed in-person.

Attempts were made to contact the remaining soldiers by phone to complete paper and pencil assessments (no physio). Completing the remaining assessments by phone proved to be a major challenge. Many of the soldiers had incorrect contact information, others did not answer their phone, and several were scheduled for interviews but did not answer when the research assistant called them back to conduct the interview. A total of 26 assessments were completed by phone which brought the total number of assessments completed to 308 (in-person and phone) and resulted in a follow-up rate of 74% (308/418). Although we did not meet our follow-up goal of 80%, we are satisfied with 74% in light of the barriers that were encountered. See the table (Appendix C) for details.

- Collect 12-month post-deployment physiologic reactivity, cognitive attribution bias, and interview data (Mos. 36-42). Pyne, CAVHS

Progress: Partially complete. We did not collect physiologic reactivity or cognitive attribution bias data at 12-months because this was the last interview and there were no plans to collect outcome data after 12-months post-deployment.

The 12-month post-deployment data collection was completed in-person, over the phone, and by mail.

The assessments included paper and pencil questionnaires only. The in-person assessments were completed during a total of 4 Medical Readiness Events and 1 drill weekend. The major barriers to completing the in-person assessments were competing with the soldier's busy drill weekend schedules and the lack of available incentives to complete the follow-up assessments. A total of 165 12-month post-deployment assessments were completed in-person.

A total of 240 participants that did not complete the 12-month post-deployment interview in person received questionnaires in the mail (some participants received more than one questionnaire in the mail). Participants were asked to complete the questionnaires and return them in a self-address postage-paid envelope. Participants who did not return the questionnaires were contacted by phone and given the option of having the interviewer administer the questionnaires to them over the phone or completing and returning them by mail. Follow-up calls were made to participants who agreed to return the questionnaires but did not. The major barriers to completing the assessments by mail included incorrect contact information, soldiers not answering the phone, and not following through after they agreed to complete and return the questionnaires. A total of 69 assessments were completed by mail and 2 assessments were completed over the phone. Overall, a total of 236 12-month post-

deployment assessments were completed and resulted in a 12-month follow-up rate of 57% (236/411). See the table (Appendix D) for details.

- Define post-deployment physiologic reactivity variables (Mos. 27-42). Tan, MEDVAMC

Progress: Complete. Heart rate variability variables were defined in consultation with HeartMath and members of the Advisory Panel. The inter-beat interval (IBI) data collected for use in calculating heart rate variability required an additional (unplanned) data conversion step. The data collected as IBI was recorded at a fixed frequency (every 250 msec) and needed to be converted to a true IBI value. This conversion was completed by personnel at HeartMath.

- Refine analysis plan for post-deployment data (Mos. 27-42). Williams, UAMS

Progress: Complete

Task 15: Data analysis and report writing (Mos. 42-48):

- Complete data analysis and report writing (Mos. 42-48). Pyne, CAVHS

Progress: Primary data analysis is complete for HRV predictors for 3-month post-deployment PTSD symptoms and for the resilience trainings (HRV and cognitive bias) at 3- and 12-months post-deployment. Cognitive bias prediction of post-deployment PTSD is ongoing as is the predictors of 12-month PTSD symptom severity.

Key Research Accomplishments

- IRB approval obtained from Central Arkansas Veterans Healthcare System and DoD
- Hired Project Coordinator and Research Assistants
- Modified pre-deployment assessments and trainings
- Trained research assistants to deliver preventive trainings and collect pre-deployment data
- Pilot tested pre-deployment assessments and trainings
- Modified and pilot tested the virtual reality civilian environment
- Identified a recruitment site
- Training apps approved by Apple Store - Getting new apps into the Apple Store was more difficult than anticipated due to criteria for acceptance changed while we were in the process of submitting the apps for approval. We were told that the apps were not entertaining enough and that they did not appeal to a wide enough audience. With more justification (e.g. potential use by thousands of soldiers), we succeeded in getting approval.
- Collecting data from 427 soldiers during their pre-deployment training was a huge accomplishment. Contributing factors included 1) Use of iPod Touch device; 2) Willingness of research team to collect data on soldiers whenever they were available; 3) Support of commanders – providing space and allowing soldiers time to participate in the study.
- Collecting the Early Post-deployment data from 308 soldiers during their drill weekends, Reverse SRP, and over the phone was a huge accomplishment. Contributing factors included 1) Willingness of research team to collect data on soldiers whenever they were available; 2) Support of commanders – providing space and allowing soldiers time to participate in the study.
- Collecting the 12-month Post-deployment data from 236 soldiers during their drill weekends, Medical Readiness Events, by mail, and over the phone was a huge accomplishment. Contributing factors included 1) Willingness of research the team to travel to various locations in Virginia to collect data on soldiers whenever they were available; 2) Support of commanders – providing space and allowing soldiers time to participate in the study.

Reportable Outcomes

Presentations to date

- Identification of and At-Risk Interventions for Pre-deployment Psychophysiologic Predictors of Post-deployment Mental Health Outcomes – Progress Review. Oral presentation at Military Operational Medicine Research Program (MOMRP) In Progress Review. August 2012, 2013, and 2014, Fort Detrick, MD.

Products/tools developed by this project

- **Physiologic reactivity assessment using virtual reality convoy stimulus** – heart rate, heart rate variability, and skin conductance will be measured before, during, and after the virtual reality stimulus.

- **Alive** – Self-paced learning software program designed to facilitate rapid acquisition of the emotional self-management skills needed for resilience under pressure. Alive fuses Heart Rate Variability feedback cues with the engagement of computer games.

- **Cognitive Bias Assessment Program** – Serves as a non-self-report measure of negative cognitive bias. Use of this program will allow researchers to determine participants who may be at high risk for trauma-related distress because of negative cognitive bias.

- **Cognitive Bias Training Program** – Modification of negative cognitive bias is the target of the Cognitive Training Program. By learning how to make positive attributions about events, one can change biases in thinking and lessen their chance for psychological distress.

Publications to date

- In press. Nanney JT, Constans JI, Kimbrell TA, Kramer TL, Pyne JM. Differentiating between appraisal process and product in cognitive theories of posttraumatic stress. Psychological Trauma: Theory, Research, Practice, and Policy. This paper makes use of the cognitive bias assessment data and examines the relationship between cognitive appraisal process (cognitive bias data) and appraisal products (post-traumatic cognitions inventory) and confirmatory factor analysis suggest that the appraisal process and the products of that process (i.e., beliefs) are indeed distinct. Structural equation modeling results are consistent with cognitive bias and social information processing literatures which posit that biased appraisal process may contribute to the development of dysfunctional beliefs and emotional disorders following trauma. The potential utility of distinctly conceptualizing and measuring the appraisal process in both clinical and research settings is discussed. A follow-up paper which examines the longitudinal relationship between pre-deployment cognitive bias and post-deployment PTSD is in preparation.

- In review. Call DW, Pitcock J, Pyne JM. Longitudinal evaluation of the relationship between mindfulness, general distress, anxiety, and PTSD in a recently deployed National Guard sample.

- In preparation. Heart rate variability: an objective pre-deployment predictor of post-deployment PTSD symptoms. Results from this paper are summarized below.

- In preparation. Results from a pre-deployment heart rate variability and cognitive bias feedback interventions to prevent post-deployment PTSD. Results from this paper are summarized below.

Conclusions: Results of the prediction analyses which address Specific Aim 1 (pre-deployment heart rate variability predicting 3-month post-deployment PTSD symptom severity) are summarized in the tables below. As mentioned above, 308 soldiers completed the 3-month post-deployment assessment. Usable pre-deployment HRV data was available for 91.9% (283/308) of soldiers who completed the 3-month post-deployment assessment. Reasons for unusable HRV data included: excessive movement artifact and equipment malfunction. Approximately The PTSD checklist (PCL) score was the primary outcome measure and was not normally distributed; therefore, generalized linear models were used and best fit was with a gamma distribution and log link. The dichotomous PCL outcome used a cut-off score of 35 or greater which is recommended for samples where the prevalence is expected to be less than 15%. The dichotomous measure of SDNN was derived using the lowest and highest SDNN quartiles in logistic regression equations. Candidate sociodemographic and military experience covariates were chosen based on literature review and included in the multivariate analysis predicting post-deployment PTSD symptom severity (dependent variable) based on bivariate association with post-deployment PTSD symptom severity, $p<0.2$. Tables 1 and 2 summarize the results for reduced and full models with a continuous and dichotomous PCL outcome, respectively. Specific Aim 2 (3-month post-deployment heart rate variability predicting 12-month post-deployment PTSD symptom severity) results are pending.

Table 1. Reduced and Full Models of Pre-deployment Continuous Heart Rate Variability Predicting Post-deployment PCL (n=283)

Reduced Model		
Variable	Beta	p-value
Age	0.0005	0.804
Pre-deployment PCL	0.0214	<0.001
Pre-deployment SDNN	-0.003	<0.001
Full Model		
Age	-0.0007	0.764
Race (1=Caucasian, 0=non-Caucasian)	-0.108	0.008
Marital (1=Married/Cohabitating, 0=Other)	-0.020	0.624
Tobacco Use (1=Yes, 0=No)	0.004	0.911
Childhood Abuse (1=Yes, 0=No)	0.134	0.005
Previous Deployment to Combat Zone (1=Yes, 0=No)	0.004	0.929
Most Recent Combat Experiences	0.053	<0.001
Pre-deployment PCL	0.018	<0.001
Pre-deployment SDNN	-0.002	0.006

Table 2. Reduced and Full Models of Pre-deployment Dichotomous Heart Rate Variability Predicting Post-deployment PCL (n=141)

Reduced Model		
Variable	OR (95% CI)	p-value
Age	0.977 (0.922, 1.035)	0.429
Pre-deployment PCL	1.164 (1.094, 1.237)	<0.001
Pre-deployment SDNN Quartiles (lowest quartile (n=70) vs highest quartile (n=71))	3.678 (1.240, 10.905)	0.019
Full Model		

Age	0.992 (0.925, 1.064)	0.823
Race (1=Caucasian, 0=non-Caucasian)	0.128 (0.037, 0.449)	0.001
Tobacco Use (1=Yes, 0=No)	1.400 (0.452, 4.333)	0.560
Childhood Abuse (1=Yes, 0=No)	1.665 (0.488, 5.674)	0.415
Previous Deployment to Combat Zone (1=Yes, 0=No)	0.531 (0.149, 1.897)	0.330
Most Recent Combat Experiences	1.239 (0.929, 1.653)	0.144
Pre-deployment PCL	1.209 (1.111, 1.316)	<0.001
Pre-deployment SDNN Quartiles (lowest quartile (n=70) vs highest quartile (n=71))	3.633 (1.066, 12.383)	0.039

Reduced model Wald=23.782, df(3), p<0.001
Full model Wald=25.504, df(8), p=0.001

To our knowledge, this is the first study to demonstrate pre-deployment HRV to be a significant predictor of post-deployment PTSD symptom severity. The inverse relationship between HRV and PTSD symptom severity is expected as low pre-deployment HRV was hypothesized as a risk factor for post-deployment PTSD symptoms.

Results of the resilience training outcomes which address Specific Aim 3 are summarized in the table and graph below. Soldiers were randomized at the company level to HRV biofeedback, cognitive bias feedback, or no feedback groups in order to minimize app sharing across intervention groups. HRV biofeedback and cognitive bias feedback interventions included one hour self-paced training using laptop computers and orientation to iPod with an app which corresponded to the soldier's assigned study group. Randomization was done at the company level to minimize app sharing. To account for the clustering of subjects within company and the positive skewness of the continuous PCL-M score, generalized linear mixed models were used and a gamma distribution with log link was the best fit for the data. Covariates were chosen for the full model if there were differences between the study arm groups at p<0.2 or bivariate correlations between PCL-M follow-up scores and candidate covariates at p<0.2. Interaction terms were also tested and the only significant two-way interaction terms were study group*time and study group*age where age was dichotomized using a median split at 26 years of age. The corresponding three-way interaction term (study group*time*age) was also significant. Therefore, the predicted means in Table 3 are presented by age group and time.

Table 3. Predicted mean PTSD severity score by time, age groups and study arms

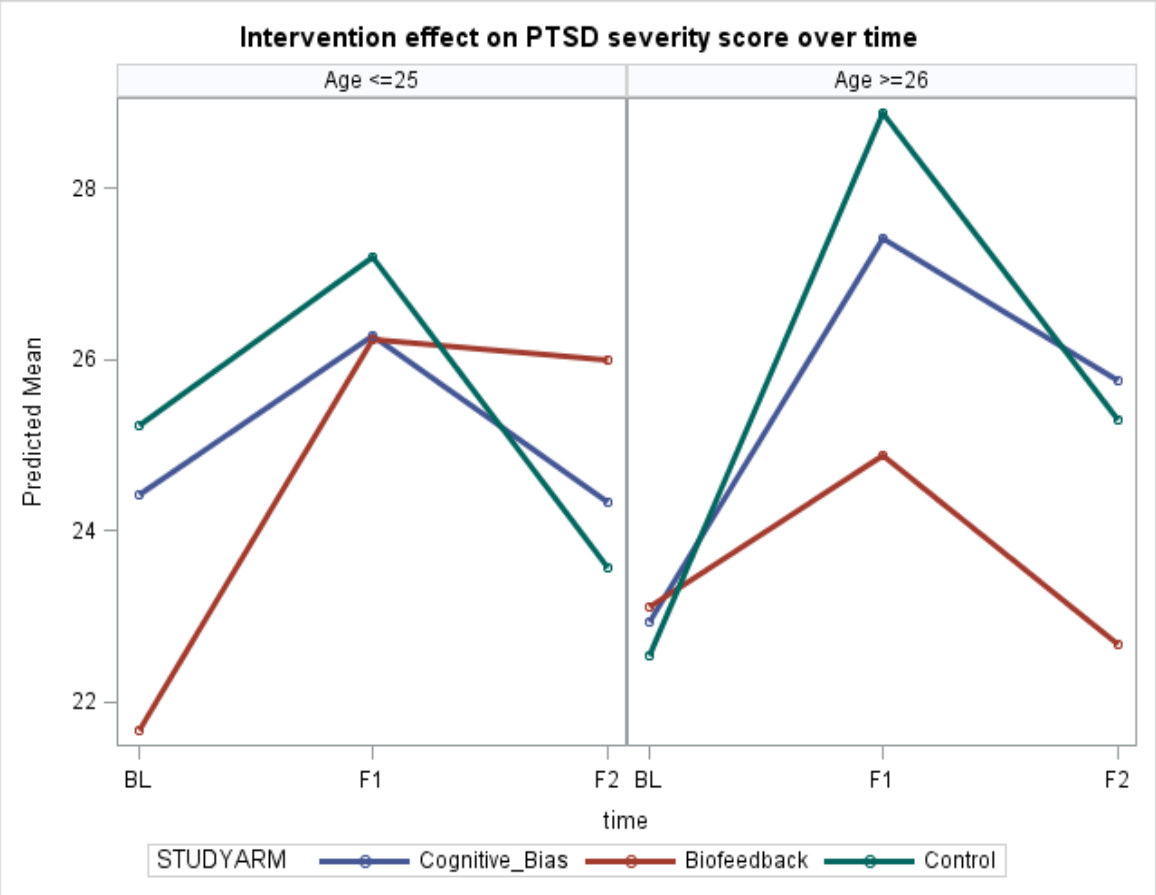
Time	**Age 25 years or younger**			**Age 26 years or older**		
	Cognitive Bias	**Biofeedback**	**Control**	**Cognitive Bias**	**Biofeedback**	**Control**
Baseline (n=343)[1]	24.42	21.67*	25.22	22.94	23.10	22.55
3 month follow-up (n=307)	26.29	26.24	27.20	27.42	24.88*	28.89
12 month follow-	24.34	25.99	23.57	25.76	22.68	25.30

Time	Age 25 years or younger			Age 26 years or older		
	Cognitive Bias	Biofeedback	Control	Cognitive Bias	Biofeedback	Control
up (n=235)						

*p<.05 for comparisons between the resilience training and control group.

Covariates included: time, age, gender, race, marital status, income, childhood abuse, military rank, combat experiences during most recent deployment, and interaction terms described above.

1. Baseline n=343 because 65 soldiers did not have childhood abuse data.



At 3-months post-deployment the HRV biofeedback group demonstrated significantly lower total PTSD scores compared to the control group in soldiers 26 years of age and older ($p<0.05$). There were no significant differences in the younger soldiers (25 years of age and younger) or in total PTSD scores at 12 months.

Low pre-deployment HRV is a significant objective predictor of post-deployment PTSD symptom severity and HRV biofeedback decreases the risk of PTSD symptoms in soldiers 26 years of age and older. This study identified an objective risk factor and an intervention to decrease this risk. The products from this study are an objective model for PTSD risk assessment and evidence to support pre-deployment HRV-based PSTD resiliency training.

APPENDICES.

A. Randomization Procedure
B. Randomization Results
C. Summary of 3-month Post-Deployment Follow-up Assessments
D. Summary of 12-month Post-Deployment Follow-up Assessments
E. Personnel Receiving Pay from the Research Effort
F. Variable Codebook

APPENDIX A

Randomization Procedures

- Participants were randomized to one of three training arms: breath pacing, cognitive bias, or no additional training.

- The unit of randomization was the smallest naturally occurring unit that was most likely be in close proximity during deployment (e.g. squad or platoon). This was done in order to limit training intervention cross-over that is very likely if soldiers who work in close proximity are assigned to different training intervention arms. The precise unit of randomization was decided in consultation with command leadership. The randomization scheme was 1:1:1 by unit across training intervention arms and was based on results from a random number generator.

- Randomization was stratified by company or troop under the assumption that there may be factors that could affect outcomes that were specific to a given company or troop, e.g., assignment, culture, etc. Headquarter companies were randomized separately. We monitored the number of subjects who were recruited into each arm and modified randomization strategies such that at the end of recruitment we had equal numbers of subjects in each of the training arms. A larger number of subjects was in the no additional training arm and this will enhance our power to detect outcome differences between the training arms and the control group.

APPENDIX B

Randomization Results

Arm	Battalion 1	Battalion 2	Totals
Biofeedback	40	86	**126**
Cognitive	31	95	**126**
Control	47	128	**175**
Totals	**118**	**309**	**427**

APPENDIX C

Summary of 3-month Post-Deployment Follow-up Assessments

Unit	PI Dropped[1]	Subject Withdrew	Did Not Deploy[2]	Unable to Contact (attempt average, range)	Follow-ups Completed In-person	Follow-ups Completed by Phone (attempt average, range)	Total Follow-ups Completed	Completio Rate[3]
2-224th	1	2	1	34 (5.2, 1-9)	71	9 (4.4, 2-9)	80	69%
2-183rd	0	3	7	71 (4.7, 1-12)	211	17 (4.5, 1-9)	228	75%
Total	**1**	**5**	**8**	**105** (4.9, 1-12)	**282**	**26** (4.5, 1-9)	**308**	**74%**

Total Pre-deployment Baseline Assessments Completed = 427 (2-224th (Aviation) = 118, 2-183rd (CAV) = 309)

[1]Withdrawn from the study, due to the fact that we have reason to believe that another individual completed the baseline assessment in his place

[2]No longer eligible for the study

[3]Completion Rate = Total follow-ups completed divided by eligible post-deployment assessments (# baselines completed – # PI dropped, # did not deploy)

APPENDIX D

Summary of 12-month Post-Deployment Follow-up Assessments

Unit	PI Dropped[1]	Subject Withdrew	Did Not Deploy[2]	Unable to Contact (attempt average, range)	Follow-ups Completed In-person	Follow-ups Completed by Mail & Phone (attempt average, range)	Total Follow-ups Completed	Completio Rate[3]
2-224th	1	6	3	41 (2.4, 0-4)	36	31 (2.0, 0-6)	67	59%
2-183rd	0	5	12	123 (2.4, 0-6)	129	40 (1.7, 0-5)	169	57%
Total	**1**	**11**	**15**	**164** (2.4, 0-6)	**165**	**71** (1.9, 0-6)	**236**	**57%**

Total Pre-deployment Baseline Assessments Completed = 427 (2-224th (Aviation) = 118, 2-183rd (CAV) = 309)

Total early Post-deployment Assessments Completed = 308 (2-224th (Aviation) = 80, 2-183rd (CAV) = 228)

[1]Withdrawn from the study, due to the fact that we have reason to believe that another individual completed the baseline assessment in his place

[2]No longer eligible for the study

[3]Completion Rate = Total follow-ups completed divided by eligible post-deployment assessments (# baselines completed – # PI dropped (n=1), # did not deploy (n=15)

APPENDIX E

Personnel Receiving Pay from the Research Effort

Co-Investigators

- Joseph Constans, PhD
- Douglas Gibson, Psy. D., MPH
- Teresa Kramer, PhD
- Mark Wiederhold, MD, PhD

Programmers

- Silas Williams

Research Assistants

- Hilary Adams, BS
- Lauren Anthony, MPA
- Lauren Gay, BA
- Debbie Hodges
- Cliff Hudson, BA
- Susan Jegley, MSW
- Mitzi Mosier
- Kelly Peters, PhD
- Pat Savary, BS

Statisticians

- Xiaotong Han, MS
- Liya Lu, MS
- Jeff Pitcock, PhD

Other

- Valorie Shue, BA, Technical Writer
- Regina Stanley, BS, Project Coordinator

APPENDIX F. Variable Codebook

TABLE OF CONTENTS:

ID Participant Identification Number

STUDYARM Randomized Study Arm

1 = Cognitive Bias

2 = Biofeedback

3 = Control

UNIT Assigned Unit

1 = Aviation

2 = CAV

COMPANY Company/Platoon/Troop/Battalion

1 = Alpha

2 = Bravo

3 = Delta

4 = Echo

5 = HHC

6 = Troop A, HQ

7 = Troop A, 1st Platoon

8 = Troop A, 2nd Platoon

9 = Troop B, HQ

10 = Troop B, 1st Platoon

11 = Troop B, 2nd Platoon

12 = Comp A BSTB, HQ

13 = Comp A BSTB, 1st Platoon

14 = Comp A BSTB, 2nd Platoon

15 = Comp C-116, HQ

16 = Comp C-116, 1st Platoon

17 = Comp C-116, 2nd Platoon

18 = Troop C, HQ

19 = Troop C, 1st Platoon

20 = Troop C, 2nd Platoon

21 = Troop C, 3rd Platoon

22 = Troop C, 4th Platoon

23 = Company D-3-116, HQ

24 = Company D-3-116, 1st Platoon

25 = Company D-3-116, 2nd Platoon

26 = Company D-3-116, 3rd Platoon

27 = Company D-3-116, 4th Platoon

28 = Company D-3-116, 5th Platoon

29 = Company D-3-116, 6th Platoon

30 = HQ (Entire Battalion)

DEPLOYED — To the best of our knowledge, did solider deploy between Baseline and First Follow-up?

0 = Not deployed

1 = Deployed

WITHDREW — Participant Withdrew from study

0 = No

1 = Yes

DROPPED Participant was dropped from study

0 = No

1 = Yes

Date of Assessment

BLDATE Baseline

F1DATE First Post-Deployment
F2DATE Final Post-Deployment

NOTE: The following codes were used consistently through the coding process unless otherwise specified:

77 = Not applicable

88 = Missing

99 = Refused

Interview Mode (post-deployment assessments only)

F1LOCATION First Post-Deployment

F2LOCATION Final Post-Deployment

1 = In Person

2 = Phone

3 = Mail (1-year post deployment assessment only)

Demographics

What is your age?

AGE Baseline

F1AGE First Post-Deployment
F2AGE Final Post-Deployment

GENDER What is your gender?

1 = Male

2 = Female

RACE Which of the following best describes your racial background?

1 = American Indian or Alaskan Native

2 = Asian/Oriental or Pacific Islander

3 = Black/African American

4 = White/Caucasian, not of Hispanic origin

5 = Hispanic

6 = Other

RACEOTH If RACE=6, OTHER specified (Text field)

Which of the following best describes your current marital status?

MARITAL Baseline

F1MARITAL First Post-Deployment

F2MARITAL Final Post-Deployment

1 = Married/Cohabitating

2 = Widowed

3 = Separated

4 = Divorced

5 = Never Married

What is the highest grade you completed in school?

EDUC Baseline

F1EDUC First Post-Deployment

F2EDUC Final Post-Deployment

1 = 8th grade or less

2 = Some high school

3 = GED

4 = High school graduate

5 = Some college/technical school

6 = College graduate

7 = Any post-graduate work

8 = Graduate degree (masters or doctorate)

What is your employment status?

EMPLOY Baseline

F1EMPLOY First Post-Deployment

F2EMPLOY Final Post-Deployment

1 = Employed full-time (35 + hours per week)

2 = Employed part time (less than 35 hours per week)

3 = Unemployed, looking for work

4 = Unemployed, disabled

5 = Unemployed, volunteer work

6 = Unemployed, retired

7 = Unemployed, not looking for work

8 = Other

	If EMPLOY=8, OTHER specified (text field)
EMPOTH	Baseline
F1EMPOTH	First Post-Deployment
F2EMPOTH	Final Post-Deployment

Which of the following categories best describes your household's total income before taxes last year? Please include income from all sources such as salaries and wages, Social Security, retirement income, investments and other sources.

INCOME Baseline

F1INCOME First Post-Deployment

F2INCOME Final Post-Deployment

1 = Less than $20,000

2 = $20,000 - $39,999

3 = $40,000 - $59,999

4 = $60,000 - $79,999

5 = $80,000 or more

Has a medical professional told you that you have moderate to severe hearing loss in the past year?

HEARLOSS Baseline

F1HEARLOSS First Post-Deployment Assessment

F2HEARLOSS Final Post-Deployment Assessment

0 = No

1 = Yes

Do you currently use tobacco products?

TOBACCO Baseline

F1TOBACCO First Post-Deployment

F2TOBACCO Final Post-Deployment

0 = No

1 = Yes

If TOBACCO = 1, continue

If YES, what type of tobacco product to you use?

TOBTYPE	Baseline
F1TOBTYPE	First Post-Deployment
F2TOBTYPE	Final Post-Deployment

1 = Cigarettes

2 = Chewing (smokeless)

3 = Both

4 = Other

If TOBTYPE = 4, OTHER specified (text field)

TOBTYPEOTH Baseline

F1TOBTYPEOTH First Post-Deployment

F2TOBTYPEOTH Final Post-Deployment

If TOBTYPE = 1 or 3, ask CIGPACKS AND CIGLAST

If you use cigarettes, which of the following best describes how many packs you typically smoke per day?

CIGPACKS Baseline

F1CIGPACS First Post-Deployment

F2CIGPACS Final Post-Deployment

1 = Less than half a pack

2 = Half a pack

3 = One pack

4 = Two packs

5 = More than two packs

When was your last cigarette?

CIGLAST Baseline

F1CIGLAST First Post-Deployment

F2CIGLAST Final Post-Deployment

1 = Less than 30 minutes ago

2 = 30-60 minutes ago

3 = 1-2 hours ago

4 = More than 2 hours ago

If TOBTYPE = 2 or 3 ask TOBCANS and TOBLAST

If you use chewing tobacco, which of the following best describes how many cans you typically use per week?

TOBCANS Baseline

F1TOBCANS First Post-Deployment

F2TOBCANS Final Post-Deployment

1 = Less than one can

2 = One can

3 = Two cans

4 = Three cans

5 = Four or more cans

When was your last dip?

TOBLAST Baseline

F1TOBLAST First Post-Deployment

F2TOBLAST Final Post-Deployment

1 = Have dip in now

2 = Less than 30 minutes ago

3 = 30-60 minutes ago

4 = 1-2 hours ago

5 = More than 2 hours ago

HANDEDNESS Right or left handed

1 = Right handed

2 = Left handed

Medications:

NOTE: In the field name, the _1 changes to the next consecutive number for each medication. Total possible – 5 at Baseline; 4 at lst follow-up; 11 at final follow-up

Medication mode

MEDTYPE_1 Baseline

F1MEDTYPE_1 First Post-Deployment

F2MEDTYPE_1 Final Post-Deployment

1 = Every day

2 = As needed

Medication Name (text field)

MEDNAME_1 Baseline

F1MEDNAME_1 First Post-Deployment

F2MEDNAME_1 Final Post-Deployment

Last date taken (date field)

MEDLAST_1 Baseline

F1MEDLAST_1 First Post-Deployment

F2MEDLAST_1 Final Post-Deployment

Last time taken (text field)

MEDTIME_1 Baseline

F1MEDTIME_1 First Post-Deployment

F2MEDTIME_1Final Post-Deployment

MILITARY HISTORY

1. Which of the following best describes your current military status?

MILSTATUS Baseline **NOTE: Not asked of Aviation Unit**

F1MILSTATUS First Post-Deployment **NOTE: Not asked of Aviation Unit**

F2MILSTATUS Final Post-Deployment

1 = Active duty

2 = Reserve

3 = National Guard

4 = Retired

5 = Honorable discharge (not retired)

6 = Other than honorable discharge

7 = Other

If MILSTATUS = 7, specify other (text field)

MILSTATUSOTH Baseline **NOTE: Not asked of Aviation Unit**

F1MILSTATUSOTH First Post-Deployment **NOTE: Not asked of Aviation Unit**

F2MILSTATUSOTH Final Post-Deployment

2. Which branch of military service are you in or were you in?

MILBRANCH1 – MILBRANCH5 are coded as follows:

NOTE: Not collected at either post-deployment assessment

0 = No

1 = Yes

MILBRANCH1	Army
MILBRANCH2	Navy
MILBRANCH3	Air Force
MILBRANCH4	Marines
MILBRANCH5	Coast Guard

MILRANK

3. What is your current military rank (if retired or discharged, enter you rank at the time you retired or were discharged)

NOTE: Since this information was not collected from the Aviation Unit at Baseline, this field was extracted from the first post-deployment data if collected. If the first post-deployment data was not collected but the final post-deployment data was collected, then this field was extracted from the final post-deployment data.

1 = E1-E3

2 = E4-E6

3 = E7-E9

4 = Warrant Officer

5 = O1-O3

6 = O4-O6

7 = O7 and above

MILYEARS

4. How many total active and reserve years of military service have you completed?

NOTE: Since this information was not collected from the Aviation Unit at Baseline, this field was extracted from the first post-deployment data if collected. If the first post-deployment data was not collected but the final post-deployment data was collected, then this field was extracted from the final post-deployment data.

Number entered or 88 for Missing

** DO NOT USE THE DEPLOYNUM VARIABLE!!

DEPLOYNUM

5. What is the total number of your overseas military deployments? (as reported by participant)

Number entered or 88 for Missing

Deployment History:

NOTE: In the field name, the _1 changes to the next consecutive number for each deployment. Total possible – 9

DEPLOYLOCATION_1 Where were you deployed (Location)? (text field)

DEPLOYMONTHS_1 Duration of deployment in months

COMBATEXPOSURE_1 Combat Exposure

0 = No

1 = Yes

88 = Missing

CASUALTIES_1 Number of casualties in your unit

Number entered or

88 = Missing

99 = Refused

TOTALDEPLOY Total number of deployments (calculated by deployments listed)

88 = Missing

TOTALDEPLOYMTHS Total number of months deployed (calculated by adding participants account of deployment months)

TOTCOMBATEXP Total number of combat exposure (calculated by adding deployments with combat exposure reported by participant at baseline) - CAV only – AVI all coded as missing.

PREVCOMBATEXP

Previous deployment to combat zone prior to baseline (obtained for both units from first follow-up variable F1CEB (Have you been deployed to a combat zone prior to your most recent deployment?)

0 = No

1 = Yes

BLDEPLOY

Total number of deployments reported at Baseline

The Aviation Unit was not asked this at Baseline so number given is one reported at F1 Follow-Up -1. If the F1 follow-up data has not been collected, the value is 88.

F1DEPLOY

Total number of deployments reported between Baseline and F1 Follow-up data collection. If Follow-up has not been collected yet, the value is 88.

TOTALCASUALTIES

Total number of casualties reported by participant for all deployments. If no deployment data has been collected on participant, this field is coded as 88.

HOSTDEPL

Did participant have any Hostile Fire Deployments?

-1 = No previous deployments

0 = No

1 = Yes

Blank = Missing deployment information

PTSD Checklist – Military Version (PCL-M)

Below is a list or problems and complaints that veterans sometimes have in response to stressful life experiences. Indicate how much you have been bothered by that problem in the last month.

Instrument Administered:

Baseline – Field names are as below

First Post-Deployment – Add "F1" as prefix to Baseline field names

Final Post-Deployment – Add "F2" as prefix to Baseline field names

PCLM1 – PCLM17 coded as follows:

1 = Not at all

2 = A little bit

3 = Moderately

4 = Quite a bit

5 = Extremely

PCLM1 1. Repeated, disturbing memories, thoughts, or images of a stressful military experience from the past.

PCLM2 2. Repeated, disturbing dreams of a stressful military experience from the past.

PCLM3 3. Suddenly acting or feeling as if a stressful military experience were happening again (as if you were reliving it)?

PCLM4	4. Feeling very upset when something reminded you of a stressful military experience?
PCLM5	5. Having physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something reminded you of a stressful military experience?
PCLM6	6. Avoid thinking about or talking about a stressful military experience or avoid having feelings related to it?
PCLM7	7. Avoid activities or situations because they remind you of a stressful military experience?
PCLM8	8. Trouble remembering important parts of a stressful military experience?
PCLM9	9. Loss of interest in things that you used to enjoy?
PCLM10	10. Feeling distant or cut off from other people?
PCLM11	11. Feeling emotionally numb or being unable to have loving feelings for those close to you?
PCLM12	12. Feeling as if your future will somehow be cut short?
PCLM13	13. Trouble falling or staying asleep?
PCLM14	14. Feeling irritable or having angry outbursts?

PCLM15 15. Having difficulty concentrating?

PCLM16 16. Being “super alert” or watchful on guard?

PCLM17 17. Feeling jumpy or easily startled?

Scoring:

PCLM_C1 Cluster 1 Score (# of Items 1-5 >= 3) – Reexperiencing

0 = Did not meet criteria

1 = Met criteria of 1 or more items

PCLM_C2 Cluster 2 Score (Items 6-12 >=3) Avoidance/Numbing

0 = Did not meet criteria

1 = Met criteria of 3 or more items

PCLM_C3 Cluster 3 Score (Items 13-17 >=3) Hyperarousal

0 = Did not meet criteria

1 = Met criteria of 2 or more items

PCLSCR PCLM Score (sum of all)

BSI

Read each of the following items carefully, then indicate how much that problem distressed or bothered you during the past 30 days including today.

Instrument Administered:

Baseline – Field names are as below

First Post-Deployment – Add "F1" as prefix to Baseline field names

Final Post-Deployment – Add "F2" as prefix to Baseline field names

BSI1 – BSI23 are coded as follows:

1 = Not at all

2 = A little bit

3 = Moderately

4 = Quite a bit

5 = Extremely

BSI1	1.	Faintness or dizziness
BSI2	2.	Feeling no interest in things
BSI3	3.	Nervousness and shakiness inside
BSI4	4.	Feeling easily annoyed or irritated
BSI5	5.	Pains in heart or chest
BSI6	6.	Feeling lonely
BSI7	7.	Feeling tense or keyed up
BSI8	8.	Nausea or upset stomach

BSI9	9.	Feeling blue
BSI10	10.	Temper outbursts that you could not control
BSI11	11.	Suddenly scared for no reason
BSI12	12.	Trouble getting your breath
BSI13	13.	Feelings of worthlessness
BSI14	14.	Spells or terror or panic
BSI15	15.	Numbness or tingling in parts of your body
BSI16	16.	Feeling hopelessness about the future
BSI17	17.	Having urges to beat, injure, or harm someone
BSI18	18.	Having urges to break or smash things
BSI19	19.	Feeling so restless you couldn't sit still
BSI20	20.	Feeling weak in parts of your body
BSI21	21.	Thoughts of ending your life
BSI22	22.	Getting into frequent arguments
BSI23	23.	Feeling fearful

Scoring:

I could not find scoring specifically for the 23-item BSI so I used the subscale scoring for the larger 53-item BSI. The 4 subscales below matched exactly with the larger item BSI, however, the Somatization subscale was lacking 1 item.

BSI_SOM	Somatization Subscale score (sum of items 1, 5, 8, 12, 15, and 20)
BSI_HOS	Hostility Subscale score (sum of items 4, 10, 17, 18, and 22)
BSI_DEP	Depression Subscale score (sum of items 2, 6, 9, 13, 16, and 21)

BSI_ANX	Anxiety Subscale score (sum of items 3, 7, 11, 14, 19, and 23)
BSI_TOTSCR	Sum of all items

CD-RISC

Please indicate how much you agree with the following statements as they apply to you over the past month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

Instrument Administered:

Baseline – Field names are as below

First Post-Deployment – Add "F1" as prefix to Baseline field names

Final Post-Deployment – Add "F2" as prefix to Baseline field names

RISC1 – RISC25 are coded as follows:

0 = Not at all true

1 = Rarely true

2 = Sometimes

3 = Often true

4 = Nearly always

RISC1	I am able to adapt when changes occur.
RISC2	I have at least one close and secure relationship which helps me when I am stressed.
RISC3	When there are no clear solutions to my problems, sometimes fate or God can help.
RISC4	I can deal with whatever comes my way.
RISC5	Past successes give me confidence in dealing with new challenges and difficulties.

RISC6 I try to see the humorous side of things when I am faced with problems.

RISC7 Having to cope with stress can make me stronger.

RISC8 I tend to bounce back after illness, injury, or other hardships

RISC9 Good or bad, I believe that most things happen for a reason.

RISC10 I give my best effort, no matter what the outcomes may be.

RISC11 I believe I can achieve my goals, even if there are obstacles.

RISC12 Even when things look hopeless, I don't give up.

RISC13 During times of stress/crisis, I know where to turn for help.

RISC14 Under pressure, I stay focused and think clearly.

RISC15 I prefer to take the lead in solving problems, rather than letting others make all the decisions.

RISC16 I am not discouraged by failure.

RISC17 I think of myself as a strong person when dealing with life's challenges and difficulties.

RISC18 I can make unpopular or difficult decisions that affect other people if it is necessary.

RISC19 I am able to handle unpleasant or painful feelings like sadness, fear, and anger.

RISC20 In dealing with life's problems, sometimes you have to act on a hunch, without knowing why.

RISC21 I have a strong sense of purpose in life.

RISC22 I feel in control of my life.

RISC23 I like challenges.

RISC24 I work to obtain my goals, no matter what roadblocks I encounter along the way.

RISC25 I take pride in my achievements.

Scoring:

RISCSCR	Sum of all items

PTCI

We are interested in the kind of thoughts you may have had after a distressing experience. Below are a number of statements that may or may not be representative of your thinking. Please think of a recent distressing event. Please read each statement carefully and tell us how much you AGREE or DISAGREE with each statement in relation to that event.

Instrument Administered:

Baseline – Field names are as below

First Post-Deployment – Add "F1" as prefix to Baseline field names

Final Post-Deployment – Add "F2" as prefix to Baseline field names

PTCI1 – PTCI36 are coded as follows:

1 = Totally disagree

2 = Disagree very much

3 = Disagree slightly

4 = Neutral

5 = Agree slightly

6 = Agree very much

7 = Totally agree

PTCI1 1. The event happened because of the way I acted.

PTCI2 2. I can't trust that I will do the right thing.

PTCI3 3. I am a weak person.

PTCI4 4. I will not be able to control my anger and will do something terrible.

PTCI5 5. I can't deal with even the slightest upset.

PTCI6 6. I used to be a happy person but now I am always miserable.

PTCI7 7. People can't be trusted.

PTCI8 8. I have to be on guard all of the time.

PTCI9 9. I feel dead inside.

PTCI10 10. You can never know who will harm you.

PTCI11 11. I have to be especially careful because you never know what can happen next.

PTCI12 12. I am inadequate.

PTCI13 13. I will not be able to control my emotions, and something terrible will happen.

PTCI14 14. If I think about the event, I will not be able to handle it.

PTCI15 15. The event happened to me because of the sort of person I am.

PTCI16 16. My reactions since the event mean that I am going crazy.

PTCI17 17. I will never be able to feel normal emotions again.

PTCI18 18. The world is a dangerous place.

PTCI19 19. Somebody else would have stopped the event from happening.

PTCI20 20. I have permanently changed for the worse.

PTCI21 21. I feel like an object, not like a person.

PTCI22 22. Somebody else would not have gotten into this situation.

PTCI23 23. I can't rely on other people.

PTCI24 24. I feel isolated and set apart from others.

PTCI25 25. I have no future.

PTCI26 26. I can't stop bad things from happening to me.

PTCI27 27. People are not what they seem.

PTCI28	28. My life has been destroyed by the trauma.
PTCI29	29. There is something wrong with me as a person.
PTCI30	30. My reactions since the event show that I am a lousy coper.
PTCI31	31. There is something about me that made the event happen.
PTCI32	32. I will not be able to tolerate my thoughts about the event, and I will fall apart.
PTCI33	33. I feel like I don't know myself anymore.
PTCI34	34. You never know when something terrible will happen.
PTCI35	35. I can't rely on myself.
PTCI36	36. Nothing good can happen to me anymore.

Scoring:

PTCISELF	Negative Cognitions about the Self (Sum of Items 2, 3, 4, 5, 6, 9, 12, 14, 16, 17, 20, 21, 24, 25, 26, 28, 29, 30, 33, 35, and 36) divided by 21
PTCIWORLD	Negative Cognitions about the World (Sum of Items 7, 8, 10, 11, 18, 23, and 27) divided by 7
PTCIBLAME	Self-Blame (Sum of Items 1, 15, 19, 22, and 31) divided by 5
PTCISCR	Total Score (sum of PTCISELF, PTCIWORLD, and PTCIBLAME)

NOTE: Items 13, 32, and 34 are not scored

PHQ-9

Instrument Administered:

Baseline – Field names are as below

First Post-Deployment – Add "F1" as prefix to Baseline field names

Final Post-Deployment – Add "F2" as prefix to Baseline field names

Over the last 2 weeks, how often have you been bothered by any of the following problems?
PHQ1 – PHQ9 are coded as follows:

0 = Not at all
1 = Several days
2 = More than half the days
3 = Nearly every day

PHQ1	1. Little interest or pleasure in doing things?
PHQ2	2. Feeling down, depressed, or hopeless?
PHQ3	3. Trouble falling or staying asleep, or sleeping too much?
PHQ4	4. Feeling tired or having little energy?
PHQ5	5. Poor appetite or overeating?
PHQ6	6. Feeling bad about yourself – or that you were a failure or have let yourself or your family down?
PHQ7	7. Trouble concentrating on things, such as reading the newspaper or watching television?
PHQ8	8. Moving or speaking so slowly that other people have noticed? Or the opposite-being so fidgety or restless that you have been moving around a lot more than usual?
PHQ9	9. Thoughts that you would be better off dead or of hurting yourself in some way?
PHQ10	10. PHQ Total Score
PHQ11	11. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Current Mental Health Treatment Questions

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

F1MHTX1 1. Are you currently receiving treatment for any mental health problem?

1 = Yes

2 = No

If F1MHTX1 = No, F1MHTX2 and F1MHTX3A-F1MHTX3F should be coded as 1 (No Treatment)

F1MHTX2 2. What type of mental health treatment are you receiving?

1 = No treatment

2 = Antidepressant medication

3 = Counseling

4 = both medication and counseling

5 = Other

F1MHTX2OTH If F1MHTX2 = 5, specify other (text field)

3. Who is providing your mental health treatment?

F1MHTX3A-F1MHTX3F are coded as follows:

0 = No

1 = Yes

F1MHTX3A No treatment

F1MHTX3B Primary care doctor

F1MHTX3C Psychiatrist

F1MHTX3D Psychologist

F1MHTX3E Social Worker

F1MHTX3F Other counselor

F1MHTX3OTH If F1MHTX3F=1, specify other (text field)

Past Mental Health Treatment Questions (do not include current episode)

F1MHTX4 4. Have you ever been treated for a previous mental health problem?

1 = Yes

2 = No

If F1MHTX4 = No, F1MHTX5 and F1MHTX6A-F1MHTX6F should be coded 1 (no treatment)

F1MHTX5 5. What type of mental health treatment did you receive in the past (include all past treatments if multiple past episodes)?

1 = No treatment

2 = Antidepressant medication

3 = Counseling

4 = both medication and counseling

5 = Other

F1MHTX5OTH If F1MHTX5 = 5, specify other (text field)

6. Who provided your mental health treatment in the past (include all past providers if multiple past episodes)?

F1MHTX6A-F1MHTX6F are coded as follows:

0 = No

1 = Yes

F1MHTX6A No treatment

F1MHTX6B Primary care doctor

F1MHTX6C Psychiatrist

F1MHTX6D Psychologist

F1MHTX6E Social Worker

F1MHTX6F Other counselor

F1MHTX6OTH If F1MHTX6F = 1, specify other (text field)

F1MHTX7 7. Have you ever been hospitalized for mental health problems?

1 = Yes

2 = No

TBI

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

F1TBI1 1. Were you exposed to a blast(s) during your most recent deployment?

0 = No

1 = Yes

2. Did you have any injury(ies) during your most recent deployment from any of the following?

F1TBI2A- F1TBI2F are coded as follows:

0 = No

1 = Yes

F1TBI2A	Fragment
F1TBI2B	Blast (improvised Explosive Device, PPG, Land mine, Grenade, etc.)
F1TBI2C	Bullet
F1TBI2D	Vehicular (any type of vehicle, including airplane)
F1TBI2E	Fall
F1TBI2F	Other

F1TBI2FOTH If F1TBI2F=1 (Yes), specify (text field)

3. Did any injury received during your most recent deployment result in any of the following?

F1TBI3A- F1TBI3H are coded as follows:

0 = No

1 = Yes

F1TBI3A	Being dazed, confused or “seeing stars”
F1TBI3B	Not remembering the injury
F1TBI3C	Losing consciousness (knocked out) less than one minute
F1TBI3D	Losing consciousness (knocked out) 1-20 minutes
F1TBI3E	Losing consciousness (knocked out) longer than 20 minutes
F1TBI3F	Having any symptoms of concussion afterward (headache, dizziness, irritability)
F1TBI3G	Head injury
F1TBI3H	None of the above

4. Are you currently experiencing any of the following problems?

F1TBI4A- F1TBI4H are coded as follows:

0 = No

1 = Yes

F1TBI4A	Frequent headaches
F1TBI4B	Dizziness
F1TBI4C	Memory problems
F1TBI4D	Balance problems
F1TBI4E	Ringing in ears
F1TBI4F	Irritability
F1TBI4G	Sleep problems
F1TBI4H	Other
F1TBI4HOTH	If F1TBI4H=1 (Yes), specify (text field)

F1TBI5 5. Have you deployed to a combat zone prior to this most recent deployment?

0 = No

1 = Yes

If F1TBI5=1 (YES), continue. Otherwise, skip to PTCI Section

F1TBI6 6. Were you exposed to a blast(s) during any deployment prior to your most recent deployment?

0 = No

1 = Yes

7. Did you have any injury(ies) during any deployment prior to your most recent deployment from any of the following?

F1TBI7A- F1TBI7F are coded as follows:

0 = No

1 = Yes

F1TBI7A	Fragment
F1TBI7B	Blast (improvised Explosive Device, PPG, Land mine, Grenade, etc.)
F1TBI7C	Bullet
F1TBI7D	Vehicular (any type of vehicle, including airplane)
F1TBI7E	Fall
F1TBI7F	Other
F1TBI7FOTH	If F1TBI7F=1 (Yes), specify (text field)

8. Did any injury received during any deployment prior to your most recent deployment result in any of the following?

F1TBI8A- F1TBI8H are coded as follows:

0 = No

1 = Yes

F1TBI8A	Being dazed, confused or “seeing stars”
F1TBI8B	Not remembering the injury
F1TBI8C	Losing consciousness (knocked out) less than one minute
F1TBI8D	Losing consciousness (knocked out) 1-20 minutes
F1TBI8E	Losing consciousness (knocked out) longer than 20 minutes
F1TBI8F	Having any symptoms of concussion afterward (headache, dizziness, irritability)
F1TBI8G	Head injury
F1TBI8H	None of the above

PITTSBURG SLEEP QUALITY INDEX

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month.

F1PSQI1 1. During the past month, what time have you usually gone to bed at night?

Time entered

F1PSQI2 2. During the past month, how long (in minutes) has it usually taken you to fall asleep each night?

Minutes entered or

888 = Don't know

999 = Refused

F1PSQI3 3. During the past month, what time have you usually gotten up in the morning?

Time entered

F1PSQI4 4. During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed).

Hours entered

888 = Don't know

999 = Refused

F1PSQIDIFF Difference (in hours) between going to bed and getting up

F1PSQI5A 5a. During the past month, how often have you had trouble sleeping because you cannot get to sleep within 30 minutes.

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI5B 5b. During the past month, how often have you had trouble sleeping because you wake up in the middle of the night or early morning.

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI5C 5c. During the past month, how often have you had trouble sleeping because you have to get up to use the bathroom.

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI5D 5d. During the past month, how often have you had trouble sleeping because you cannot breathe comfortably.

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI5E 5e. During the past month, how often have you had trouble sleeping because you cough or snore loudly.

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI5F

5f. During the past month, how often have you had trouble sleeping because you feed too cold.

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI5G

5g. During the past month, how often have you had trouble sleeping because you feel too hot.

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI5H 5h. During the past month, how often have you had trouble sleeping because you had bad dreams.

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI5I 5i. During the past month, how often have you had trouble sleeping because you have pain.

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI5OATH Other reasons, please describe (text field)

If other reason(s) given…

F1PSQI5J 5j. During the past month, how often have you had trouble sleeping because of this?

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI6 6. During the past month, how would you rate your sleep quality overall?

1 = Very good

2 = Fairly good

3 = Fairly bad

4 = Very bad

F1PSQI7 7. During the past month, how often have you taken medicine to help you sleep (prescribed or over the counter)?

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI8 8. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activities?

0 = Not during the past month

1 = Less than once a week

2 = Once or twice a week

3 = Three or more times a week

F1PSQI9 9. During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?

0 = No problem at all

1 = Only a very slight problem

2 = Somewhat of a problem

3 = A very big problem

F1PSQIDURAT Duration of Sleep

Minimum Score = 0 (better)

Maximum Sc ore = 3 (worse)

F1PSQIDISTB Sleep Disturbance

Minimum Score = 0 (better)

Maximum Score = 3 (worse)

F1PSQILATEN Sleep Latency

Minimum Score = 0 (better)

Maximum Score = 3 (worse

F1PSQIDAYDYS Day Dysfunction Due to Sleepiness

Minimum Score = 0 (better)

Maximum Score = 3 (worse)

F1PSQIHSE Sleep Efficiency

Minimum Score = 0 (better)

Maximum Score = 3 (worse)

F1PSQISLPQUAL Overall Sleep Quality

Minimum Score = 0 (better)

Maximum Score = 3 (worse)

F1PSQIMEDS Needs Meds to sleep

Minimum Score = 0 (better)

Maximum Score = 3 (worse)

F1PSQI Total Score (All Subscores summed)

Minimum Score = 0 (better)

Maximum Score = 21 (worse)

Interpretation: TOTAL <= 5 associated with good sleep quality

TOTAL > 5 associated with poor sleep quality

SHEEHAN DISABILITY SCALE

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

F1SDS1 – F1SDS3 are coded as follows:

0 = Not at all

1 = Mildly

2 = Mildly

3 = Mildly

4 = Moderately

5 = Moderately

6 = Moderately

7 = Markedly

8 = Markedly

9 = Markedly

10 = Extremely

11 = N/A (for Question F1SDS1 only)

F1SDS1	1. To what extent have emotional symptoms disrupted your work in the last month?
F1SDS2	2. To what extent have emotional symptoms disrupted your social life in the last month?

F1SDS3	3. To what extent have emotional symptoms disrupted your family life/home responsibilities in the last month?

SSRPH

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

Please read each statement carefully and circle the answer to indicate how much you agree or disagree with each item.

F1SSRPH1 – F1SSRPH5 are coded as follows:

0 = Strongly disagree

1 = Disagree

2 = Agree

3 = Strongly agree

F1SSRPH1	1. Receiving mental health treatment for emotional or interpersonal problems carries social stigma.
F1SSRPH2	2. It is a sign of personal weakness or inadequacy to receive mental health treatment for emotional or interpersonal problems.
F1SSRPH3	3. People will see a person in a less favorable way if they come to know that he/she had received mental health treatment.
F1SSRPH4	4. It is advisable for a person to hide from people that he/she had received mental health treatment.

F1SSRPH5	5. People tend to like less those who are receiving professional mental health treatment.

PRE-DEPLOYMENT LIFE EVENTS

Instrument Administered:

First Post-Deployment – Field names are as below

The statements below refer to events you may have experienced BEFORE YOUR MOST RECENT DEPLOYMENT. No one has had exactly the same experiences that you have had, so your input is important. There are no right or wrong answers. Please indicate YES or NO for each item below.
F1PRDEPLE1 – F1PRDEPLE14 and F1PRDEPLE15 are coded as follows:

0 = No
1 = Yes

Before I was deployed, I experienced...

F1PDLE1 1. a natural disaster (for example, a flood or hurricane), a fire, or an accident in which I was hurt or my property was damaged.

F1PDLE2 2. exposure to a toxic substance (such as dangerous chemicals, radiation)

F1PDLE3 3. combat or exposure to a war zone (in the military or as a civilian)

F1PDLE4 4. a mental illness (for example, clinical depression, anxiety disorder), or life-threatening physical illness (for example, cancer or heart disease) of someone close to me.

F1PDLE5 5. a parent who had a problem with drugs or alcohol

F1PDLE6 6. the death of someone close to me.

Before I was deployed, I had...

F1PDLE7 7. been through a divorce or been left by a partner or significant other

F1PDLE8 8. witnessed someone being assaulted or violently killed

F1PDLE9 9. been robbed or had my home broken into

F1PDLE10 10. lost my job

F1PDLE11 11. been emotionally mistreated (for example, shamed, embarrassed, ignored, or repeatedly told I was no good)

F1PDLE12 12. seen or heard physical fighting between my parents or caregivers

F1PDLE13 13. been physically punished by a parent or caregivers

F1PDLE14 14. been physically injured by another person (for example, hit, kicked, beaten up)

F1PDLE14A If F1PDLE14 = YES, did this occur...

1 = in childhood

2 = in adulthood

3 = In childhood AND adulthood

F1PDLE15 15. experienced unwanted sexual activity as a result of force, threat of harm, or manipulation.

F1PDLE15A If F1PDLE15 = YES, did this occur...

1 = in childhood

2 = in adulthood

3 = In childhood AND adulthood

COMBAT EXPERIENCES

Instrument Administered:

First Post-Deployment – Field names are as below

These questions ask about experiences you may have had ever encountered during your most recent deployment period. Please answer each question by indicating (YES or NO) which you feel most appropriately fits your experiences during deployment.

F1CEA1 – F1CEA16 are coded as follows:

0 = No

1 = Yes

F1CEA1	1. Being attached or ambushed
F1CEA2	2. Receiving incoming artillery, rocket, or mortar fires
F1CEA3	3. Being shot at or receiving small-arms fire
F1CEA4	4. Shooting or directing fire at the enemy
F1CEA5	5. Being responsible for the death of an enemy combatant
F1CEA6	6. Seeing dead bodies or human remains
F1CEA7	7. Handling or uncovering human remains
F1CEA8	8. Seeing dead or seriously injured Americans
F1CEA9	9. Knowing someone seriously injured or killed
F1CEA10	10. Participating in demining operations
F1CEA11	11. Seeing ill or injured women or children whom you were unable to help
F1CEA12	12. Being wounded or injured
F1CEA13	13. Had a buddy shot or hit who was near you
F1CEA14	14. Clearing or searching homes or buildings

F1CEA15 15. Engaging in hand-to-hand combat

F1CEA16 16. Saved the life of a solider or civilian

F1CEB Have you deployed to a combat zone prior to this most recent deployment?

0 = No

1 = Yes

If F1CEB=1 (Yes), continue. Otherwise, skip to Audit C

Repeat questions below for any/all deployments prior to the most recent one.

F1CEB1 – F1CEB16 are coded as follows:

0 = No

1 = Yes

F1CEB1	1. Being attached or ambushed
F1CEB2	2. Receiving incoming artillery, rocket, or mortar fires
F1CEB3	3. Being shot at or receiving small-arms fire
F1CEB4	4. Shooting or directing fire at the enemy
F1CEB5	5. Being responsible for the death of an enemy combatant
F1CEB6	6. Seeing dead bodies or human remains
F1CEB7	7. Handling or uncovering human remains
F1CEB8	8. Seeing dead or seriously injured Americans
F1CEB9	9. Knowing someone seriously injured or killed
F1CEB10	10. Participating in demining operations
F1CEB11	11. Seeing ill or injured women or children whom you were unable to help
F1CEB12	12. Being wounded or injured
F1CEB13	13. Had a buddy shot or hit who was near you
F1CEB14	14. Clearing or searching homes or buildings
F1CEB15	15. Engaging in hand-to-hand combat
F1CEB16	16. Saved the life of a solider or civilian

Scoring:

SUMF1CEA	Sum of 16 items regarding most recent deployment
SUMF1CEB	Sum of 16 items regarding all deployments prior to most recent one.

AUDIT C

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

F1AUDIT1 1. How often did you have a drink containing alcohol in the past 3 months?

1 = Never

2 = Monthly or less

3 = Two or four times a month

4 = Two or three times a week

5 = Four or more times a week

F1AUDIT2 2. How many drinks did you have on a typical day when you were drinking in the past 3 months?

1 = None, I do not drink

2 = 1 or 2

3 = 3 or 4

4 = 5 or 6

5 = 7 to 9

6 = 10 or more

F1AUDIT3 3. How often did you have six or more drinks on one occasion in the past 3 months?

1 = Never

2 = Less than monthly

3 = Monthly

4 = Weekly

5 = Daily or almost daily

PAIN QUESTIONNAIRE

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

F1PAIN1 1. Rate your current level of pain on a 0 to 10 scale

0 = No pain

1 =

2 =

3 =

4 =

5 =

6 =

7 =

8 =

9 =

10 = Extreme pain

F1PAIN2 2. Do you take over the counter or prescription medication for pain on a daily basis?

0 = No

1 = Yes

F1PAIN3 3. If YES to F1PAIN2, is the pain medication over the counter or prescription?

1 = Over the counter

2 = Prescription

SF-12

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

F1SF1 1. In g

2. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

F1SF2A a. Does your health limit you in moderate activities such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?

F1SF2B b. Does your health limit you in climbing several flights of stair

3. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

F1SF3A a. Have you accomplished less than you would like (because of your physical health)?

F1SF3B b. Have you been limited in the kind of work or other activities you've done (because of your physical health)?

4. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

F1SF4A a. Have you accomplished less than you would like (because of any emotional problems)?

F1SF4B b. Did you not do work or other activities as carefully?

F1SF5 5. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

6. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

F1SF6A a. Have you felt calm and peaceful?

F1SF6B b. How much of the time during the past 4 weeks did you have a lot of energy?

F1SF6C c. How much of the time during the past 4 weeks have you felt downhearted and blue?

F1SF7 7. During the past 4 weeks how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends or relatives)?

F1PCS SF-12 Physical Health Summary Score

F1MCS SF-12 Mental Health Summary Score

UNIT COHESION

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

The statements below are about your relationships with other military personnel. Please reach each statement and circle and answer to indicate how much you agree or disagree with each item.

F1UNIT1 – F1UNIT12 are coded as follows:

1 = Strongly disagree

2 = Somewhat disagree

3 = Neither agree nor disagree

4 = Somewhat agree

5 = Strongly agree

F1UNIT1 1. My unit was like a family to me.

F1UNIT2 2. I felt a sense of camaraderie between myself and the other soldiers in my unit.

F1UNIT3 3. Members of my unit understood me.

F1UNIT4 4. Most people in my unit were trustworthy.

F1UNIT5	5. I could go to most people in my unit for help when I had a personal problem.
F1UNIT6	6. The commanding officer(s) were interested in what I thought and how I felt about things.
F1UNIT7	7. I was impressed by the quality of leadership in my unit.
F1UNIT8	8. My superiors made a real attempt to treat me as a person.
F1UNIT9	9. The commanding officer(s) in my unit were supportive of my efforts.
F1UNIT10	10. I felt like my efforts really counted to the military.
F1UNIT11	11. The military appreciated my service.
F1UNIT12	12. I was supported by the military.

DAY-TO-DAY EXPERIENCES

Instrument Administered:

First Post-Deployment – Field names are as below

Final Post-Deployment – Change "F1" prefix for field names to "F2"

Below is a collection of statements about your everyday experiences. Using the 1-6 scale below, please indicate how frequently or infrequently you current have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

F1MINDFUL1 – F1MINDFUL15 are coded as follows:

1 = Almost always

2 = Very frequently

3 = Somewhat frequently

4 = Somewhat infrequently

5 = Very infrequently

6 = Almost never

F1MINDFUL1 1. I could be experiencing some emotional and not be conscious of it until some time later.

F1MINDFUL2 2. I break or spill things because of carelessness, not paying attention, or thinking of something else.

F1MINDFUL3 3. I find it difficult to stay focused on what's happening in the present.

F1MINDFUL4 4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.

F1MINDFUL5 5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.

F1MINDFUL6 6. I forget a person's name almost as soon as I've been told it for the first time.

F1MINDFUL7 7. It seems I am "running on automatic", without much awareness of what I'm doing.

F1MINDFUL8 8. I rush through activities without being really attentive to them.

F1MINDFUL9 9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.

F1MINDFUL10 10. I do jobs or tasks automatically, without being aware of what I'm doing.

F1MINDFUL11 11. I find myself listening to someone with one ear, doing something else at the same time.

F1MINDFUL12 12. I drive places on "automatic pilot" and then wonder why I went there.

F1MINDFUL13 13. I find myself preoccupied with the future or the past.

F1MINDFUL14 14. I find myself doing things without paying attention.

F1MINDFUL15 15. I snack without being aware that I'm eating.

F1MINFULSCR Score (mean of 15 items)

APP USE QUESTIONNAIRE

Instrument Administered:

First Post-Deployment – Field names are as below

F1APP1 Are you in the control group or the intervention group for this study?

1 = Control

2 = Intervention

If F1APP1 = 1, ask question a below. If F1APP1=2, skip to F1APPBC1

F1APP1A If control, did you by chance use the Breath Pacer or IMAT app at any time since your last research interview with us?

0 = No

1 = Yes

If F1APP1A = 1, continue. Otherwise, interview is STOPPED

Before arriving in country:

F1APPBC1 1. After receiving training on the iPod Touch app, about how many times did you use the app before deploying overseas?

1 = Not at all

2 = Less than 1 time per month

3 = 1-3 times per month

4 = 1-2 times per week

5 = 3-4 times per week

6 = 5-7 times per week

7 = More than 7 times per week

F1APPBC2 2. About how many times did you use the skills taught in the app without actually using the app itself before deploying overseas?

1 = Not at all

2 = Less than 1 time per month

3 = 1-3 times per month

4 = 1-2 times per week

5 = 3-4 times per week

6 = 5-7 times per week

7 = More than 7 times per week

F1APPBC3 3. For about how many minutes did you use the app each time before deploying overseas?

1 = Did not use the app

2 = Less than 1 minute each time

3 = 1-2 minutes each time

4 = 3-4 minutes each time

5 = 5 or more minutes each time

F1APPBC4 4. When did you most often use the app before deploying overseas?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before a training exercise, giving a briefing, standing watch, etc.)

5 = After a stressful event (e.g., events above, etc.)

6 = Other

F1APPBC4OTH If F1APPBC4 = 6 (other), specify (text field)

F1APPBC5 5. When did you find using the app to be most useful before deploying overseas?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before a training exercise, giving a briefing, standing watch, etc.)

5 = After a stressful event (e.g., events above, etc.)

6 = Other

F1APPBC5OTH If F1APPBC5 = 6 (other), specify (text field)

In country:

F1APPIC1 1. About how many times did you use the app while in country?

1 = Not at all

2 = Less than 1 time per month

3 = 1-3 times per month

4 = 1-2 times per week

5 = 3-4 times per week

6 = 5-7 times per week

7 = More than 7 times per week

F1APPIC2 2. About how many times did you use the skills taught in the app without actually using the app itself while in country?

1 = Not at all

2 = Less than 1 time per month

3 = 1-3 times per month

4 = 1-2 times per week

5 = 3-4 times per week

6 = 5-7 times per week

7 = More than 7 times per week

F1APPIC3 3. For about how many minutes did you use the app each time while in country?

1 = Did not use the app

2 = Less than 1 minute each time

3 = 1-2 minutes each time

4 = 3-4 minutes each time

5 = 5 or more minutes each time

F1APPIC4 4. When did you most often use the app while in country?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before a convoy, patrol, mission, standing watch, etc.

5 = After a stressful event (e.g., after a firefight, combat, events above, etc.)

6 = Other

F1APPIC4OTH If F1APPIC4 = 6 (other), specify (text field)

F1APPIC5 5. When did you find using the app to be most useful while in country?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before a convoy, patrol, mission, standing watch, etc.

5 = After a stressful event (e.g., after a firefight, combat, events above, etc.)

6 = Other

F1APPIC5OTH If F1APPIC5 = 6 (other), specify (text field)

After deployment:

F1APPAD1 1. About how many times did you use the app after deployment?

1 = Not at all

2 = Less than 1 time per month

3 = 1-3 times per month

4 = 1-2 times per week

5 = 3-4 times per week

6 = 5-7 times per week

7 = More than 7 times per week

F1APPAD2 2. About how many times did you use the skills taught in the app without actually using the app itself after deployment?

1 = Not at all

2 = Less than 1 time per month

3 = 1-3 times per month

4 = 1-2 times per week

5 = 3-4 times per week

6 = 5-7 times per week

7 = More than 7 times per week

F1APPAD3 3. For about how many minutes did you use the app each time after deployment?

1 = Did not use the app

2 = Less than 1 minute each time

3 = 1-2 minutes each time

4 = 3-4 minutes each time

5 = 5 or more minutes each time

F1APPAD4 4. When did you most often use the app after deployment?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before giving a presentation, job interview, getting together with family or friends, etc.)

5 = After a stressful event (e.g., events above, etc.)

6 = Other

F1APPAD4OTH If F1APPAD4 = 6 (other), specify (text field)

F1APPAD5 5. When did you find using the app to be most useful after deployment?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before giving a presentation, job interview, getting together with family or friends, etc.)

5 = After a stressful event (e.g., events above, etc.)

6 = Other

F1APPAD5OTH If F1APPAD5 = 6 (other), specify (text field)

F1APPAD6 6. Did you recommend use of either app (Breath Pacer or IMAT) to anyone else?

0 = No

1 = Yes

F1APPAD6OTH If F1APPAD6 = 1 (Yes), who? (text field)

F1APPAD7 7. Is there any additional information related to using either app (Breath Pacer or IMAT) that you would like to tell us?

0 = No

1 = Yes

F1APPAD7OTH If F1APPAD7 = 1 (Yes), specify. (text field)

APP USE QUESTIONNAIRE

Instrument Administered:

Final Post-Deployment – Field names are as below

F2APP1 Are you in the control group or the intervention group for this study?

1 = Control

2 = Intervention

If F2APP1 = 1, ask question a below. If F2APP1=2, skip to F2APPRI1

F2APP1A If control, did you by chance use the Breath Pacer or IMAT app at any time since your last research interview with us?

0 = No

1 = Yes

If F2APP1A = 1, continue. Otherwise, interview is STOPPED

F2APPRI1 1. About how many times did you use the app in the past 6 months?

1 = Not at all

2 = Less than 1 time per month

3 = 1-3 times per month

4 = 1-2 times per week

5 = 3-4 times per week

6 = 5-7 times per week

7 = More than 7 times per week

F2APPRI2 2. For about how many minutes did you use the app each time in the past 6 months?

1 = Did not use the app

2 = Less than 1 minute each time

3 = 1-2 minutes each time

4 = 3-4 minutes each time

5 = 5 or more minutes each time

F2APPRI3 3. When did you most often use the app in the past 6 months?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before giving a presentation, job interview, getting together with family or friends, etc.)

5 = After a stressful event (e.g., events above, etc.)

6 = Other

F2APPRI3OTH If F2APPRI3 = 6 (other), specify (text field)

F2APPRI4 4. When did you find using the app to be most useful in the past 6 months?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before giving a presentation, job interview, getting together with family or friends, etc.)

5 = After a stressful event (e.g., events above, etc.)

6 = Other

F2APPRI4OTH If F2APPRI4 = 6 (other), specify (text field)

F2APPRI5 5. About how many times did you use the skills taught in the app without actually using the app itself in the past 6 months?

1 = Not at all

2 = Less than 1 time per month

3 = 1-3 times per month

4 = 1-2 times per week

5 = 3-4 times per week

6 = 5-7 times per week

7 = More than 7 times per week

F2APPRI6 6. For about how many minutes did you use the skills taught in the app without actually using the app itself in the past 6 months?

1 = Did not use the app

2 = Less than 1 minute each time

3 = 1-2 minutes each time

4 = 3-4 minutes each time

F2APPRI7 7. When did you most often use the skills taught in the app without actually using the app itself in the past 6 months?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before giving a presentation, job interview, getting together with family or friends, etc.)

5 = After a stressful event (e.g., events above, etc.)

6 = Other

F2APPRI7OTH If F2APPRI7 = 6 (other), specify (text field)

F2APPRI8 8. When did you find using the skills taught in the app without actually using the app itself to be most useful in the past 6 months?

1 = Did not use the app

2 = After waking up

3 = Before going to sleep

4 = Before a planned stressful event (e.g., before giving a presentation, job interview, getting together with family or friends, etc.)

5 = After a stressful event (e.g., events above, etc.)

6 = Other

F2APPRI8OTH If F2APPRI8 = 6 (other), specify (text field)

F2APPRI9 . 9. Did you recommend use of the app (Breath Pacer if iMat) to anyone else?

0 = No

1 = Yes

F2APPRI9A If F2APPRI9 = 1 (YES), who? (text field)

F2APPRI10 10. Is there any additional information related to using either app (Breath Pacer or iMat) that you would like to tell us?

0 = No

1 = Yes

F2APPRI10A If F2APPRI10 = 1 (YES), please specify? (text field)

Physiological Data:

Administered:

Baseline – Field names are as below

First Post-Deployment – Add "F1" as prefix to Baseline field names

NOTE: The data for 386 participants are included for Baseline Assessment. Heart Math could not process the others.

Baseline 1: (Baseline 0-3 minutes)

BL1_NUMPTS	Number of data points **(Field not included in First Post-Deployment)**
BL1_LENGTH_S	Length (in seconds)
BL1_HR_BPM	Heart Rate (beats per minute)
BL1_IBI_MS	IBI (Inter-beat interval)
BL1_SDNNI	SDNN Index
BL1_TP	Total Power
BL1_VLF	Very Low Frequency
BL1_LF	Low Frequency
BL1_LNLF	Log scale of low frequency
BL1_HF	High Frequency
BL1_LFXHF	LF/HF Ratio
BL1_LNTP	Log scale of Total Power
BL1_LNVLF	Log scale of Very low frequency
BL1_LNHF	Log scale of High frequency
BL1_LNLFXHF	Log scale of LF/HF Ratio

Baseline 2: (Baseline 3-6 minutes)

BL2_NUMPTS	Number of data points **(Field not included in First Post-Deployment)**
BL2_LENGTH_S	Length (in seconds)
BL2_HR_BPM	Heart Rate (beats per minute)
BL2_IBI_MS	IBI (Inter-beat interval)
BL2_SDNNI	SDNN Index
BL2_TP	Total Power
BL2_VLF	Very Low Frequency
BL2_LF	Low Frequency2
BL2_HF	High Frequency
BL2_LFXHF	LF/HF Ratio
BL2_LNTP	Log scale of Total Power
BL2_LNVLF	Log scale of Very low frequency
BL2_LNLF	Log scale of low frequency
BL2_LNHF	Log scale of High frequency
BL2_LNLFXHF	Log scale of LF/HF Ratio

Baseline 3: (Baseline 6-9 minutes)

BL3_NUMPTS	Number of data points **(Field not included in First Post-Deployment)**
BL3_LENGTH_S	Length (in seconds)
BL3_HR_BPM	Heart Rate (beats per minute)
BL3_IBI_MS	IBI (Inter-beat interval)
BL3_SDNNI	SDNN Index
BL3_TP	Total Power
BL3_VLF	Very Low Frequency
BL3_LF	Low Frequency

BL3_LNLF Log scale of low frequency

BL3_HF High Frequency

BL3_LFXHF LF/HF Ratio

BL3_LNTP Log scale of Total Power

BL3_LNVLF Log scale of Very low frequency

BL3_LNHF Log scale of High frequency

BL3_LNLFXHF Log scale of LF/HF Ratio

Startle 1: (Startle 0-3 minutes)

ST1_NUMPTS Number of data points **(Field not included in First Post-Deployment)**

ST1_LENGTH_S Length (in seconds)

ST1_HR_BPM Heart Rate (beats per minute)

ST1_IBI_MS IBI (Inter-beat interval)

ST1_SDNNI SDNN Index

ST1_TP Total Power

ST1_VLF Very Low Frequency

ST1_LF Low Frequency

ST1_LNLF Log scale of low frequency

ST1_HF High Frequency

ST1_LFXHF LF/HF Ratio

ST1_LNTP Log scale of Total Power

ST1_LNVLF Log scale of Very low frequency

ST1_LNHF Log scale of High frequency

ST1_LNLFXHF Log scale of LF/HF Ratio

Startle 2: (Startle 3-6 minutes)

ST2_NUMPTS	Number of data points **(Field not included in First Post-Deployment)**
ST2_LENGTH_S	Length (in seconds)
ST2_HR_BPM	Heart Rate (beats per minute)
ST2_IBI_MS	IBI (Inter-beat interval)
ST2_SDNNI	SDNN Index
ST2_TP	Total Power
ST2_VLF	Very Low Frequency
ST2_LF	Low Frequency2
ST2_HF	High Frequency
ST2_LFXHF	LF/HF Ratio
ST2_LNTP	Log scale of Total Power
ST2_LNVLF	Log scale of Very low frequency
ST2_LNLF	Log scale of low frequency
ST2_LNHF	Log scale of High frequency
ST2_LNLFXHF	Log scale of LF/HF Ratio

Startle 3: (Startle 6-9 minutes)

ST3_NUMPTS	Number of data points **(Field not included in First Post-Deployment)**
ST3_LENGTH_S	Length (in seconds)
ST3_HR_BPM	Heart Rate (beats per minute)
ST3_IBI_MS	IBI (Inter-beat interval)
ST3_SDNNI	SDNN Index
ST3_TP	Total Power
ST3_VLF	Very Low Frequency

ST3_LF	Low Frequency
ST3_LNLF	Log scale of low frequency
ST3_HF	High Frequency
ST3_LFXHF	LF/HF Ratio
ST3_LNTP	Log scale of Total Power
ST3_LNVLF	Log scale of Very low frequency
ST3_LNHF	Log scale of High frequency
ST3_LNLFXHF	Log scale of LF/HF Ratio

Virtual Reality: (Virtual Reality 0-3 minutes)

VR_NUMPTS	Number of data points **(Field not included in First Post-Deployment)**
VR_LENGTH_S	Length (in seconds)
VR_HR_BPM	Heart Rate (beats per minute)
VR_IBI_MS	IBI (Inter-beat interval)
VR_SDNNI	SDNN Index
VR_TP	Total Power
VR_VLF	Very Low Frequency
VR_LF	Low Frequency
VR_LNLF	Log scale of low frequency
VR_HF	High Frequency
VR_LFXHF	LF/HF Ratio
VR_LNTP	Log scale of Total Power
VR_LNVLF	Log scale of Very low frequency
VR_LNHF	Log scale of High frequency
VR_LNLFXHF	Log scale of LF/HF Ratio

Cool Down 1: (Cool Down 0-3 minutes)

*****NOTE: Not included in First Post-Deployment dataset*****

CD1_NUMPTS	Number of data points
CD1_LENGTH_S	Length (in seconds)
CD1_HR_BPM	Heart Rate (beats per minute)
CD1_IBI_MS	IBI (Inter-beat interval)
CD1_SDNNI	SDNN Index
CD1_TP	Total Power
CD1_VLF	Very Low Frequency
CD1_LF	Low Frequency
CD1_LNLF	Log scale of low frequency
CD1_HF	High Frequency
CD1_LFXHF	LF/HF Ratio
CD1_LNTP	Log scale of Total Power
CD1_LNVLF	Log scale of Very low frequency
CD1_LNHF	Log scale of High frequency
CD1_LNLFXHF	Log scale of LF/HF Ratio

Cool Down 2: (Cool Down 2-5 minutes)

CD2_NUMPTS	Number of data points **(Field not included in First Post-Deployment)**
CD2_LENGTH_S	Length (in seconds)
CD2_HR_BPM	Heart Rate (beats per minute)
CD2_IBI_MS	IBI (Inter-beat interval)
CD2_SDNNI	SDNN Index
CD2_TP	Total Power

CD2_VLF	Very Low Frequency
CD2_LF	Low Frequency
CD2_LNLF	Log scale of low frequency
CD2_HF	High Frequency
CD2_LFXHF	LF/HF Ratio
CD2_LNTP	Log scale of Total Power
CD2_LNVLF	Log scale of Very low frequency
CD2_LNHF	Log scale of High frequency
CD2_LNLFXHF	Log scale of LF/HF Ratio

Cognitive Bias Assessment Data:

Program Administered:

Baseline – Field names are as below

First Post-Deployment – Add "F1" as prefix to Baseline field names

NOTE: In the field name, the _1 changes to the next consecutive number for each Scenario ID. To see Scenario ID's please see Appendix A at the end of this document. Total possible – 10

TRIAL_1 Trial # (1-10)

TRIALRESPONSE1_1 Accuracy of response to comprehension question

0 = Incorrect

1 = Correct

TRIALRESPONSETIME_1 Response time (seconds) to comprehension question

TRIALRESPONSE2_1 Response to scale that asks how well you could develop a realistic image for the scenario (1-9)

1 = Not at all well

2 =

3 = A little bit

4 =

5 = Moderately

6 =

7 = Very much

8

9 = Extremely

TRIALMEMORY_1 Order that the ScenarioID appears for the Memory Portion of the assessment (1-10)

TRIALMEMORY1_1 Response (1-9) to Sentence that appears first

1 = Not at all accurate

2 =

3 = A little bit accurate

4 =

5 = Moderately accurate

6 =

7 = Very much accurate

8

9 = Extremely accurate

TRIALMEMORY2_1 Response (1-9) to Sentence that appears second

1 = Not at all accurate

2 =

3 = A little bit accurate

4 =

5 = Moderately accurate

6 =

7 = Very much accurate

8

9 = Extremely accurate

TRIALMEMORY3_1 Response (1-9) to Sentence that appears third

1 = Not at all accurate

2 =

3 = A little bit accurate

4 =

5 = Moderately accurate

6 =

7 = Very much accurate

8

9 = Extremely accurate

TRIALMEMORY4_1 Response (1-9) to Sentence that appears fourth

1 = Not at all accurate

2 =

3 = A little bit accurate

4 =

5 = Moderately accurate

6 =

7 = Very much accurate

8

9 = Extremely accurate

TRIALMEMORYRAND1_1	Sentence # that appears first in randomized response set order Please see Appendix A at the end of this document for sentence numbering.
TRIALMEMORYRAND2_1	Sentence # that appears second Please see Appendix A at the end of this document for sentence numbering.
TRIALMEMORYRAND3_1	Sentence # that appears third Please see Appendix A at the end of this document for sentence numbering.
TRIALMEMORYRAND4_1	Sentence # that appears fourth Please see Appendix A at the end of this document for sentence numbering.
MX1_1	Variable created for scoring Response Bias and Sensitivity
MX2_1	Variable created for scoring Response Bias and Sensitivity
MX3_1	Variable created for scoring Response Bias and Sensitivity
MX4_1	Variable created for scoring Response Bias and Sensitivity
RESPBIAS_1	Response Bias Score
SENSITIVITY_1	Sensitivity Score
PROGRAMTIME	Seconds spent in program.

The scored variables were created as follows:

```
IF TRIALMEMORYRAND1=1 THEN MX1=TRIALMEMORY1;
IF TRIALMEMORYRAND2=1 THEN MX1=TRIALMEMORY2;
IF TRIALMEMORYRAND3=1 THEN MX1=TRIALMEMORY3;
IF TRIALMEMORYRAND4=1 THEN MX1=TRIALMEMORY4;
IF TRIALMEMORYRAND1=2 THEN MX2=TRIALMEMORY1;
IF TRIALMEMORYRAND2=2 THEN MX2=TRIALMEMORY2;
IF TRIALMEMORYRAND3=2 THEN MX2=TRIALMEMORY3;
IF TRIALMEMORYRAND4=2 THEN MX2=TRIALMEMORY4;
IF TRIALMEMORYRAND1=3 THEN MX3=TRIALMEMORY1;
IF TRIALMEMORYRAND2=3 THEN MX3=TRIALMEMORY2;
IF TRIALMEMORYRAND3=3 THEN MX3=TRIALMEMORY3;
IF TRIALMEMORYRAND4=3 THEN MX3=TRIALMEMORY4;
IF TRIALMEMORYRAND1=4 THEN MX4=TRIALMEMORY1;
IF TRIALMEMORYRAND2=4 THEN MX4=TRIALMEMORY2;
IF TRIALMEMORYRAND3=4 THEN MX4=TRIALMEMORY3;
IF TRIALMEMORYRAND4=4 THEN MX4=TRIALMEMORY4;
IF SCENARIOID NE 6 THEN RESPBIAS=(MX2+MX4)/(MX1+MX3);
IF SCENARIOID NE 6 THEN SENSITIVITY=MX2/MX1;
IF SCENARIOID EQ 6 THEN RESPBIAS=(MX4+MX2)/(MX1+MX3);
IF SCENARIOID EQ 6 THEN SENSITIVITY=MX4/MX3;
```

SUPPLEMENT A: Cognitive Assessment Scenarios and Memory Questions

1: Imagining Things

After 3 months into deployment with little sleep, you are on a mission at 0245. You see what appears to be a person on a bicycle through your NVG's. Upon closer inspection you realize the object was only in your imagination. Worried about your effectiveness on the mission, you send word to your superior and relay your concern.

Did you contact your superior?

Correct Response: YES

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. You send word to your superior because you need to get some sleep.
2. You send word to your superior because you fear you may be going permanently crazy.
3. You send word to your superior because you could use some company.
4. You send word to your superior because you feel that you can't trust yourself to do the job alone.

****

2: Trust for Local Citizens

After several months on duty, you have developed negative thoughts and feelings about local civilians. You no longer trust even the local authorities. Whenever you have to work with the local authorities, you feel that you have to watch your back constantly.

At times, are you assigned to work with local authorities?

Correct Response: YES

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. Whenever you have to work with the local authorities, you feel that you have to watch your back constantly because you think that they are incompetent.
2. Whenever you have to work with the local authorities, you feel that you have to watch your back constantly because you think that nothing good can happen to you anymore.
3. Whenever you have to work with the local authorities, you feel that you have to keep your distance because you want them to feel confident to take on more responsibility.

4. Whenever you have to work with the local authorities, you feel that you have to keep your distance because you feel isolated and set apart from others.

****
****

3: Children Celebrating

You are on foot patrol when you hear shouting. As you raise your rifle and turn to locate the noise, you realize that it is a group of children playing soccer in an alley. You quickly glance to see how the others in your unit acted.

Were the children being quiet?

Correct Response: NO

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. You look around to see how other soldiers in your unit reacted to make sure no one has their weapons at ready.
2. You look around to see how other soldiers in your unit reacted because you are afraid that your reaction might mean that there is something wrong with you.
3. You look around at all the children to ensure that everyone is safe.
4. You look around at all the children and remember how you used to be happy but now you are always miserable.

****
****

4: Change of Orders

You are exhausted from long work hours. You are scheduled to work on convoy operations, but as you prepare to leave, your commanding officer approaches you and tells you that your orders have changed, and you are to remain at the base until further notice.

Were you originally scheduled to go on foot patrol?

Correct Response: NO

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. Your commanding officer tells you that your orders have changed, and you are to remain at the base until further notice because you are going to be promoted.

2. Your commanding officer tells you that your orders have changed, and you are to remain at the base until further notice because you are weak.
3. Your commanding officer tells you that your orders have changed, and you are to report to another NCO who is in need of your help.
4. Your commanding officer tells you that your orders have changed, and you are to report to another NCO because you are inadequate.

****
****

5: The IED

You have been on a relatively quiet mounted patrol when you see something on the side of the road that the HUMVEE in front of you is about to pass. You radio the HUMVEE in front of you, but it is too late and an IED explodes disabling the HUMVEE. You immediately radio to higher command, but you cannot make sense of the reply.

Were you on foot patrol?

Correct Response: NO

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. Your commander responds to your call, but you can barely understand what he is saying because there is a poor connection.
2. Your commander responds to your call, but you can barely understand what he is saying because you are unable to cope with the situation.
3. Your commander responds to your call, but you do not hear him because you left your radio to help the injured soldiers.
4. Your commander responds to your call, but you do not hear him because you left your radio because you are overwhelmed with fear and can't trust that you will do the right thing.

****
****

6: A Child Approaches

You are on post guarding an entrance to a government building when you spot a child walking towards your position, carrying a backpack. You immediately tell him to halt.

Was the child carrying a backpack?

Correct Response: YES

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. You reach into your pocket to find some candy to give to the child.
2. You reach into your pocket to find your knife because you feel that something bad is bound to happen, it always does.
3. You tell the child to halt because he is crossing a busy intersection and you fear that he might get hurt.
4. You tell the child to halt because you feel that you can no longer trust anyone.

****
****

7: Training Police Recruits

You are assigned to help train new police recruits. During morning chow, you hear that two senior police officials were gunned down. You tell another member of your unit that you are concerned about going to the police station today

.

Did you eat breakfast?

Correct Response: YES

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. You tell another member of your unit that you are concerned about going to the police station because you think that the new recruits will be nervous and decide to quit.
2. You tell another member of your unit that you are concerned about going to the police station because you feel that you will not be able to control your anger and will do something terrible.
3. You tell another member of your unit that you do not want to go to the police station because you would rather search for the shooter.
4. You tell another member of your unit that you do not want to go to the police station because you feel that if you think about the event, you will not be able to handle it.

****
****

8: Truck Breaks Down

While on patrol, your truck breaks down. You inspect the truck and locate the problem, but quickly realize that you will not be able to fix the truck.

Were you at the base?

Correct Response: NO

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. You realize that you will not be able to fix the truck because you do not have the right tools.
2. You realize that you will not be able to fix the truck because you are inadequate.
3. You realize that you will need to call for help to fix the truck so that you can obtain the appropriate tools.
4. You realize that you will need to call for help to fix the truck because you are not able to tolerate this mishap and you feel yourself beginning to fall apart.

****

9: Your Birthday Party

You have been on deployment for six months and your fellow unit members have learned your birthday is coming up. While there are no "parties" celebrated and their supplies are relatively small, the other members in your unit ask you what you'd like. You cannot think of anything in particular.

Are birthdays routinely celebrated on base?

Correct Response: NO

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. You cannot think of things you would like at your party because you would rather keep it low-key.
2. You cannot think of things you would like at your party because you feel like you don't even know yourself anymore.
3. You tell your friends that you do not want a party because you know that you are going to have a big assignment the next day.
4. You tell your friends that you do not want a party because you just feel dead inside.

****

10: Gunfire in the Distance

While on patrol you hear gunfire in the distance. Unable to reach your command on the radio you have little idea about what is happening. Others in your patrol want to go and see what happened but you decide to carry on with the main route of the patrol.

Do the other members of the patrol want to ignore the gunfire?

Correct Response: NO

Sentences to Rate (1-9) with 1 being Not at All Accurate and 9 being Extremely Accurate:

1. You tell the others to maintain the route because you are concerned for their safety.
2. You tell the others to maintain the route because you are overwhelmed with fear.
3. You tell the others that you will investigate because you are a confident leader.
4. You tell the others that you will investigate because you cannot control your anger and you make rash decisions.