



US DEPARTMENT OF DEFENSE

# BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

## Risk Assessment and Surveillance

### Factor Analysis of Persistent Post-Concussive Symptoms within a Military Sample with Blast Exposure

Researchers at DVBIC at the Hunter Holmes McGuire VA Medical Center in Richmond, Virginia and Virginia Commonwealth University, sponsored by DVBIC, sought to determine the factor structure of persistent postconcussive syndrome (PCS) symptoms in a blast-exposed military sample. Participants ( $n = 181$ ) were Service Members and Veterans with at least one significant exposure to blast during deployment within the two years prior to study enrollment. Participants completed a battery of psychological tests and questionnaires: the Rivermead Postconcussion Questionnaire, PTSD Symptom Checklist-Civilian, Center for Epidemiological Studies Depression Scale, Sensory Organization Test, Paced Auditory Serial Addition Test, California Verbal Learning Test, and Delis-Kaplan Executive Function System subtests. Factor analysis was used to extract latent components in the data set, and demonstrated that PCS is characterized by four factors: emotional, cognitive, visual, and vestibular. All factors were associated with scores on the questionnaires and symptom inventories; visual and vestibular factors were also associated with balance performance. There was no significant association between the cognitive factor and neuropsychological performance or between a history of mTBI and factor scores. The analysis supports a four factor model of PCS symptomology, but does not necessarily relate the symptoms to mTBI. The study identifies four types of distress associated with a diagnosis of PCS. It also indicates that PCS development may be independent of factors associated with mTBI. This research contributes to a knowledge base that will inform how mTBI patients are triaged and cared for.