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2010 : April 2010 - Fast Breaking Papers : Heidi Terrio on Deployment-Acquired Traumatic Brain Injury

## fast breaking papers - 2010

### April 2010

(Commentary for February 2010 late entry.)



**Heidi Terrio talks with *ScienceWatch.com* and answers a few questions about this month's Fast Breaking Paper Paper in the field of Social Sciences, general.**



#### Article Title: Traumatic Brain Injury Screening: Preliminary Findings in a US Army Brigade Combat Team

Authors: **Terrio, H**; Brenner, LA; Ivins, BJ; Cho, JM; Helmick, K; Schwab, K; Scally, K; Bretthauer, R; Warden, D

Journal: J HEAD TRAUMA REHABIL, Volume: 24, Issue: 1, Page: 14-23, Year: JAN-FEB 2009

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(addresses have been truncated.)

### SW: Why do you think your paper is highly cited?

This paper is a descriptive study on deployment-acquired traumatic brain injury (TBI). A TBI is most simply described as an injury event that results in an alteration or loss of consciousness. Data was: 1) obtained from one Brigade Combat Team (BCT); 2) included the percentage of soldiers with history of clinician confirmed TBI; and 3) collected within 10 days of the soldiers returning from Iraq.

Information regarding common symptoms experienced post-TBI (immediately after the injury and at the post-deployment) was also obtained. Blast was the most common injury mechanism among soldiers in this unit.

### SW: Does it describe a new discovery, methodology, or synthesis of knowledge?

In the manuscript, a new self-administered tool, the Warrior Administered Retrospective Casualty Assessment Tool (WARCAT), for ascertaining detailed information regarding injury events was described.

Procedures for using the WARCAT to guide medical providers in completing a structured clinical interview were also detailed. Structured clinical interview is the "gold standard" for assessing a history of mild TBI.

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**SW: Would you summarize the significance of your paper in layman's terms?**

The findings in this study highlight that mild traumatic brain injury is a common deployment injury. The natural course of mild TBI in this BCT was that most soldiers improved in terms of post-TBI symptoms (e.g., headache) between the time of injury and returning home.

Nevertheless, 7.5% report three or more symptoms post-deployment. We believe that the methodology described above may assist in the accurate documentation of injuries sustained during deployment.

Using these strategies during the Post-Deployment Health Assessment (PDHA) may assist in evaluating symptoms that emerge long after the soldier has returned to the United States.

**SW: How did you become involved in this research, and were there any problems along the way?**

The research was pursued as a request from U.S. Army leaders to accurately evaluate soldiers during the PDHA in relation to blast injury and possible traumatic brain injury.

Despite the emphasis by the military services to assess and document these injuries at the time of the incident, there are barriers to seeking evaluation in theatre (e.g., wanting to stay with their team, not realizing that they were injured, and the belief that others were injured worse). Policies to date have resulted in soldiers coming forward with symptoms long post-injury.

**SW: Where do you see your research leading in the future?**

This research highlights the need for investigation of the natural history of TBI acquired during deployment, tools to best assess TBI (e.g., biomarkers, advanced imaging technologies, balance and vestibular assessments, neuropsychiatric measures) and interventions to aid in recovery.

The current research has allowed identification of a population of service members who need to be tracked in order to determine the natural history of combat TBI.

Data recently collected by our team, described in Brenner LA, *et al.*, *Journal of Head Trauma Rehabilitation* 25:1, January/February 2010, suggested that mild TBI and posttraumatic stress disorder were independently associated with postconcussive symptom reporting.

In addition, those with both conditions were at greater risk for postconcussive symptoms than those with mild TBI alone, posttraumatic stress disorder alone, or neither. This conclusion appears consistent with a combined biological and psychological model of post-combat symptoms.

These findings support the importance of screening for both conditions with the future aim of treatment in a more collaborative interdisciplinary setting.

**SW: Do you foresee any social or political implications for your research?**

The social and political consequence of this research is one of awareness and a change in procedures concerning this unseen injury. Having shown a large cohort of soldiers in one Army BCT to have up to

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22.8% with a history of a combat TBI, most of which were not documented in the theatre of operation, has brought awareness for the need to enforce screening at the time of the injury.

New policies are being developed that require all persons involved in a blast within 50 meters, a severe motor vehicle accident, sustaining a direct blow to the head, or a loss of consciousness, as well as command-directed referrals, to be screened for TBI.

This is also important since the classification of TBI as mild, moderate, and severe is based on the history of what happened at the time of the injury. Guidelines on recurrent concussions will also be implemented and involve mandatory rest and evaluation.

Social consequences of this information include collaboration between organizations in a way that has never been seen before, e.g., the Army, Navy, Marines, and Air Force, the Department of Veterans Affairs, the Defense and Veteran's Brain Injury Center, the Brain Injury Association of America, the National Football League, etc., each contribute.

All of these organizations are coming together to share ideas in education, caretaker support, care coordination, evaluation, and research. Additionally, we have seen an interdisciplinary approach to evaluation and treatment for mild TBI, which had previously been seen only in polytrauma centers among the more severely injured.

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KEYWORDS: ASSESSMENT; BLAST; COMBAT; DEPLOYMENT; IRAQ; SEQUELAE; SYMPTOMS; TRAUMATIC BRAIN INJURY; BLAST INJURY; IRAQ; AFGHANISTAN; TBI; IDENTIFICATION; RELIABILITY; NEUROTRAUMA; DEPLOYMENT; VALIDITY.



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