



“WRAIR Forward”

December 2003, NO. 26

This activities report is published by the U.S. Army Medical Research Unit-Europe,
Walter Reed Army Institute of Research, U.S. Army Medical Research and Materiel Command

COMMANDER'S CORNER

Right now my estimated cognitive capacity is 95%. I know this because for the last two months, I've been wearing a sleep watch. This watch continually monitors my activity, and uses computerized scoring algorithms to determine how much sleep I've gotten. Built into the watch is another program that uses my sleep history data and time of day (to adjust for circadian rhythm) to estimate my current cognitive capacity. The algorithms that estimate cognitive capacity from sleep history and time of day were developed at the Walter Reed Army Institute of Research (WRAIR), and are based upon extensive laboratory research. The sleep watch told me, for example, my cognitive capacity dropped dramatically when I had jet lag from a transatlantic flight. This, in turn, helped me manage my sleep and cognitive effectiveness. Although this is an anecdote, it illustrates one of the research goals at USAMRU-E – namely, to assess whether the sleep watch improves leader decision-making in high demand settings. Leader decision-making may be at its worst under conditions of high work load because leaders may have trouble implementing effective sleep management programs for themselves. Studies at the WRAIR have shown that the decision-making area of the brain (the pre-frontal cortex) is particularly susceptible to the effects of sleep deprivation. In planning to study the impact of a sleep watch on leader behavior, we will be working to move research findings from the lab to the field and enhance leader coping in high demand situations.

-MAJ Paul D. Bliese

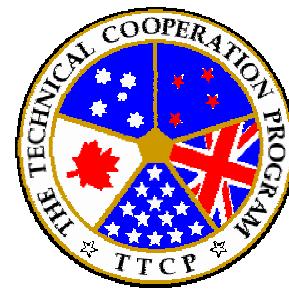
Enhancing Leadership Skills

Past research on leadership feedback has been primarily correlational in nature; past research examining the sleep-performance relationship has been primarily conducted in the laboratory. In order to address these two shortcomings, a new USAMRU-E protocol proposes a quasi-experimental study of the effects of increasing degrees of leader feedback and sleep performance management feedback on soldier and unit well-being and performance. This protocol supports the unit's STO W research program by advancing leadership and sleep performance as potential interventions that may improve unit well-being, performance, and leader behavior and may have implications for leader development and training (submitted 5 DEC 03).

Thomas, J.L., & Bliese, P.D. (co-principal investigators) with Adler, A.B. & Wright, K.M. *Evaluating Behaviorally-Based Leadership Training Tools: The effects of sleep management and feedback on leader and unit health and performance.* WRAIR Protocol #1095.

International Cooperation: AG 21

The Technical Cooperation Program (TTCP) Action Group 21, *Stress-Related Health and Behavior Effects of Military Operations*, recommended that a new international technical panel be developed to address psychological health and operational effectiveness. TTCP is an international organization composed of five English-speaking nations (Australia, Canada, New Zealand, the UK, and the US) collaborating in defense scientific and technical information exchange. The meeting, held in Pensacola, FL 2-3 Nov 03, was attended by 4 member countries. Representatives from the US included LTC (P) Brian Lukey, the Research Area Director for Military Operational Medicine, and his staff and MAJ Bliese and Dr. Adler (USAMRU-E).



Review of RADIII Research

Experts from the scientific and military planning communities reviewed the Medical Research and Materiel Command's Research Area Directorate III research in a week-long meeting of the *Joint Medical Technology Workshop 2003: Military Operational Medicine* held in Lansdowne, VA (20-23 OCT 03). USAMRU-E research was presented in coordination with related research from the Division of Neurosciences at the Walter Reed Army Institute of Research (COL Hoge, MAJ Bliese, Dr. Adler). Follow-up meetings at WRAIR included an initial discussion of STO-W steering committee plans.

Field Testing Psychological Screen

Data collection under WRAIR Protocol #889 continues with soldiers from V Corps Artillery redeploying from Iraq as part of an effort to validate a paper-and-pencil screening instrument to identify soldiers in need of follow-up assessment for mental health problems. Innovations include additional new measures, a structured and validated diagnostic interview conducted blind to the soldiers' status on the screening instrument, and the inclusion of all soldiers in the interview process to reduce the potential for stigma.

As part of the effort to validate the instrument and procedures, Dr. Robert Ployhart, Associate Professor of Psychology at George Mason University and expert in psychometrics, visited the unit from 3 to 5 December 2003 to discuss comprehensive analysis plans for the psychological screening data collected in the Fall of 2002.

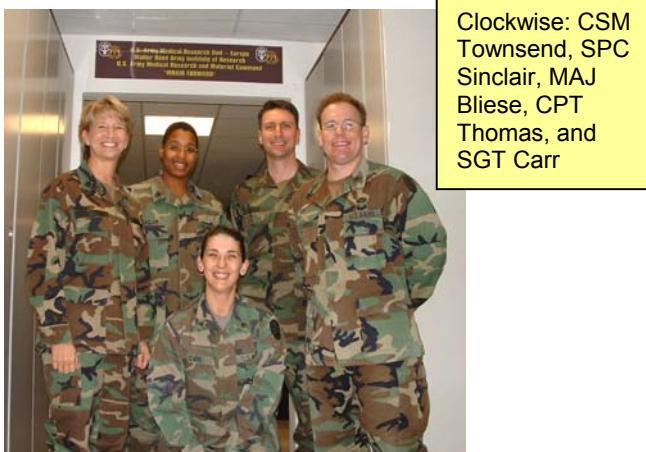
Army Suicide Surveillance Report

USAMRU-E completed a two-year retrospective and one-year prospective review of suicide event-related data in USAREUR and a review of the Army Suicide Event Report (ASER) form developed in USAREUR and adapted for Army-wide use. The technical report was finalized in December 2003 and submitted to the Europe Regional Medical Command and the Defense Technical Information Center.

Dolan, C.A., Schroeder, E.D., Wright, K.M., Thomas, J.L., & Ness, J.W. (2003). *USAREUR Suicide Surveillance Project: Data Summary and Program Evaluation*. Alexandria, VA: Defense Technical and Information Center.

USAMRU-E Distinguished Guests

- SFC Eisenman, EO for MRMC, visited the unit (OCT 03).
- Morton Ender (3-7 NOV 03), sociology professor at the US Military Academy in Behavioral Science and Leadership to work on qualitative analysis on stress and coping.
- CSM Townsend, MEDCOM CSM, (2 DEC 03) was briefed by SGT Carr, USAMRU-E NCOIC, as part of her visit to the Europe Regional Medical Command.



New Stats for Bivariate Outcomes

Many health outcomes cluster by group. For instance, reports of depressive symptoms typically vary across Army Companies. It would not be surprising to find reports of depressive symptoms vary from 0% in some Companies to 25% in others. Scientifically, we would like to be able to predict why some soldiers in some units report depressive symptoms and others do not. Analytically, however, data of this nature are challenging because they both cluster by group and they are dichotomous (depressed or not depressed). This puts the analysis in the middle of a complex juncture between (a) mixed-effects models and (b) generalized linear logistic regression models. Faced with these statistical challenges, MRMC awarded Toyon Research Corporation and the Statistics Department at the University of Wisconsin a Phase II Small Business Technology Transfer Program (STTR) award. This award is to develop new analytic tools and incorporate these tools into the open-source statistical language R. By using R, the product will be widely available to military and academic researchers via the internet. MAJ Bliese, the contracting representative who oversees the contract, visited the University of Wisconsin on 5-7 November 2003 for the Phase II kick-off meeting and met with Dr. Douglas Bates, Dr. John Eaton and Deepayan Sarkar from the University of Wisconsin and with Ben Juricek and Samuel Frame from Toyon. The project is progressing well. Preliminary work shows improvements in model estimation over existing methods. Prototypes of the product will be fielded in 2004.

Publications

- Castro, C.A., Engel, C.C., & Adler, A.B. (2003). The challenge of providing mental health prevention and early intervention in the U.S. military. In B.T. Litz (Ed), *Early intervention for trauma and traumatic loss in children and adults* (pp. 301-318). New York City: Guilford Press.
- Jex, S.M., & Thomas, J.L. (2003). Relations between stress and group perceptions: Main and mediating effects. *Work and Stress*, 17, 158-169.

Senior NCO Conference

SGT Carr attended the Senior Non-Commissioned Officers' Conference in Arlington, VA (19-25 October 03).

Debriefing Data Collection Complete

- The final data collection for a study examining the effectiveness of psychological debriefing with soldiers deployed on a peacekeeping mission was completed in the first weekend of November. This brings the number of soldiers to take part in the final 1-year follow-up to 1,006. In all, data were collected in 4 phases: pre-deployment, mid-deployment, and two follow-ups in Germany (protocol #862).
- Plans are still underway for the debriefing study to be replicated with troops returning from Iraq. Briefings and coordination, led by a team at the WRAIR, Division of Neurosciences, continue.
- Ms. Jessica Ippolito successfully defended her master's thesis, "*A model of coping strategies used by soldiers on a peacekeeping mission*," at the University of Mannheim on 28 October 2003. MAJ Bliese and Dr. Adler were in attendance. Using data from the debriefing study, Ms. Ippolito examined the role of active and passive coping styles in Karasek's job demand-control model.

Talk on Deployment Research

MAJ Bliese presented "*Post-Deployment Research Findings and USAMRU-E FY04 Research Goals*" to the Soldier and Family Support Working Group (SFS Workgroup) on 11 Dec 2003. The talk integrated research conducted at the WRAIR, Division of Neurosciences (COL Hoge and LTC Castro, principal investigators) with research conducted at USAMRU-E. The goal of the talk was to highlight trends in well-being among soldiers returning from combat and other high intensity deployments. Health concerns and family issues were among the main topics.

Presentation in Spain

On 18 November, MAJ Bliese gave an invited presentation at El Instituto Universitario "General Gutierrez Mellado" in Madrid Spain. The talk was titled "*Understanding and modeling social context in occupational stress: Examples from US Army research*." In attendance were academicians and members of the Spanish military and civil service.



Personnel Updates

- Ms. Sandra (Sam) Kelley completed her final contract with the unit on 31 OCT 03, ending her nearly 3 years of service to the unit.
- Ms. Sonya Boone-Ealy was awarded a contract to begin the unit's archiving of survey data (7 OCT 03).
- Ms. Erica Schroeder completed her tenure with the unit on 4 Dec 03 after 2 ½ years of service.
- Ms. Ippolito completed her contract with the unit (3 DEC 03).
- Ms. Andrea Bellis, a contractor with CACI, began working as a research assistant/administrative assistant on 22 Dec 2003.

This is an unofficial Army publication, authorized under the provisions of AR 360-1, and published quarterly in the interest of the U.S. Army Medical Research Unit-Europe, CMR 442, APO AE 09042 (DSN: 371-2626). This issue was approved by HQ, WRAIR for release. Editorial views and opinions expressed herein are not necessarily those of the Department of the Army. Visit our homepage: <http://www.usamru-e.hqusareur.army.mil/> to view our most recent briefs and reports. For information on our research initiatives, contact: paul.bliese@hqbg.ameddb.army.mil.

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