Introduction to the Research Cores:  

Neuroimaging

Rajendra A. Morey, MD

There is growing evidence from neuroimaging that many mental health disorders have measurable effects upon brain structure and function. We are primarily focused on the study of post-deployment mental health issues such as combat-related post traumatic stress disorder (PTSD) and traumatic brain injury (TBI).

Neuroimaging may reveal differences that have developed as a result of environmental exposures, such as combat. Genetic variations are also likely to be important for many conditions. Structural imaging is used to quantify size and/or shape of brain areas. Functional imaging may reveal differences in brain activity while performing a task.

PTSD affects about 25% of military personnel exposed to the trauma of combat. Thus it is clear that individuals can respond quite differently to similar trauma exposure. This diversity in response to environmental factors may be due, in part, to genetic differences. We are combining imaging with genetic studies to clarify the relationship between genetic variations and development of PTSD.

Recently Approved Grants

Morey R Imaging Genetics of PTSD in OEF/OIF Veterans

VA Merit Review
In the beginning, it’s easy. “Beer, sex and pizza — that’s the first order of business,” when troops return home from combat, said social worker Susan Watkins. “The first week or so is like the honeymoon. That’s a normal part of coming home. But then you start noticing … so many things,” said Watkins, who works with returning Afghanistan and Iraq veterans at the Mid-Atlantic Mental Illness Research, Education & Clinical Center, or MIRECC, at the Durham, N.C., Veterans’ Affairs Medical Center. “That picture you had — it’s just not the same. Everyone has some difficulty with adjustment. Coming home is harder than going.”...
National Service

Dr. Robin Hurley (Associate Director, Education) has accepted two additional leadership positions related to TBI. She is participating in the VA Technical Expert Panel (Planning Committee) to guide the work of the VA Evidence Synthesis Program systematic review: The Assessment and Treatment of Comorbid PTSD and TBI. This review is being led by Kathleen Carlson, PhD of the VA Center for Chronic Disease Outcomes Research (CCDOR) a VA-HSR&D Center of Excellence. She is also a member of the TBI NEUROIMAGING working group, preparing for the upcoming Workshop on Common Data Elements for Research on Psychological Health and Traumatic Brain Injury sponsored by The Defense Centers of Excellence (DCoE) for Psychological Health and Traumatic Brain Injury, the National Institute of Neurological Disorders and Stroke (NINDS), the Department of Veterans Affairs (VA), and the National Institute on Disability and Rehabilitation Research (NIDRR).

Publications

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Invited Lectures

Dr. Robin Hurley (Associate Director, Education)


Dr. Katherine Taber (Assistant Director, Education)

presented “Windows to the Brain: Neurobiology of Traumatic Brain Injury” at Mild Traumatic Brain Injury - Diagnosis and Management Symposium, War Related Illness and Injury Study Center (WRIISC), VA Palo Alto Health Care System, Palo Alto, CA, January 16, 2009

Drs. Hurley and Taber


Outreach to Community Providers

2009

Fayetteville - May 5
Greenville - June 3
Wilmington - June 4
Area L AHEC - June 10
Raleigh - June 11

Sponsored by:
NC Citizen Soldier Support Program,
Carolinas Rehabilitation and the NC AHEC

Noon V-tel Lecture Schedule:

March 13
Dean Robinson (VISN 16 MIRECC & Shreveport VAMC)
“TeleMental Health”

April 10
Kristy Straits-Troster (VISN 6 MIRECC & Durham VAMC)
“Tobacco use Cessation Among OEF/OIF Veterans”

This series is presented by V-tel and audio conferences. We are having increasing participation from sites outside VISN 6, so our assigned numbers may change. The number that each VISN 6 site will use to dial in will be included in an email notification prior to each presentation.

If you wish to attend from a site outside of VISN 6, please contact Mary Peoples (mary.peoples1@va.gov; 704-638-9000 ext 2956) so she can make the necessary arrangements.
There is often a feeling “of being an outsider in your own life,” said Harold Kudler, a Duke University psychiatrist and MIRECC chief of mental health services.

Many of these things take time to work through, experts say. About 80 percent of combat veterans who deal with the changes and challenges will adjust after nearly universal periods of sleeplessness and anxiety, studies show. But a significant 20 percent have continuing difficulties, with post-traumatic stress, depression and alienation.

The timing can vary. One study at Walter Reed Army Medical Center of 88,000 soldiers who had been to Iraq found that after six months, half of those who had shown symptoms of PTSD were free of them, Kudler said. “However, there were twice as many new cases,” he said.

Watkins said that PTSD should be “normalized” as a routine reaction, shared by all sorts of people to traumatic events. Healing comes from talking things out, experts said, telling their stories, from taking self-assessments over time, from having reunions with buddies and their families. “Talking to people who understand really does make it better,” Watkins said.

Many soldiers need encouragement to seek professional help. “Family members are usually the first to pick up on how the soldier is doing,” said John Fairbank, MIRECC chief. “They’re also critical to getting help.”

But patience and forbearance also play their roles when soldiers return from war. Kudler likens the story of Odysseus’ return to Ithaca from the Trojan War. It took a decade, with a variety of trials, including a stop in Hades, a year with an enchantress and falling prey to the lotus eaters — metaphors for the mind, infidelities and drug abuse — all while his wife, Penelope, faithfully awaited him. “It takes Odysseus 10 years, and it wasn’t that long a trip,” Kudler said. “It’s metaphorical. It takes a long time to come home.”

“Everybody’s afraid to have their patients quit smoking because they’re afraid they’re going to get worse. There’s not a lot of empirical data about that.” And her research on how to break the nicotine-and-PTSD cycle raises a provocative question for a tobacco-prone military: Are people at higher risk of developing PTSD if they smoke before they experience the violent event or episode?

... Then there’s nicotine. It temporarily enhances attention when it hits the brain — one reason that members of military tell the VA’s Beckham they smoke. Although PTSD patients say a cigarette helps their mood when they’re having symptoms, the extra attention may be reinforcing bad memories. “If you think about your traumatic event and you smoke your cigarette, you can think about it even better,” explains the VA’s Beckham.

... new studies may prompt more merging of care:

_In Durham, Beckham is giving PTSD-suffering smokers either a nicotine patch or a dummy patch to wear for three weeks before they quit smoking. The theory: Steady nicotine release will blunt a cigarette’s usually reinforcing hit to the brain, possibly helping both withdrawal symptoms and the intensity of PTSD symptoms.

_In some New Hampshire and Vermont substance-abuse clinics, McGovern is randomly assigning patients to standard addiction-only care or cognitive behavioral therapy traditionally used for PTSD. A pilot study found the cognitive behavioral therapy improved both PTSD symptoms and substance use.

_In Seattle, researchers at the VA Puget Sound Health Care System have PTSD therapists conducting smoking cessation therapy in the same visit. In a pilot study, those patients were five times more likely to quit cigarettes than PTSD patients sent to separate smoking programs.