Pain among returning service members from OEF/OIF

Robert D. Kerns, Ph.D.
Chief, Psychology Service, VA Connecticut
National Program Director for Pain Management, VACO
Professor of Psychiatry, Neurology and Psychology, Yale
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War Injuries

- Wounds from IEDs, mortar rounds, landmines, and shrapnel account for 65% of combat related injuries
- Despite injury severity, 90% of the injured survive
- Pain is among the most frequent presenting complaints of returning OEF/OIF soldiers
- Particularly in patients with polytrauma
OEF/OIF Pain Issues

Photo by Lynsey Addario, Corbis © 2005 NY Times

Photo by Airman 1st Class Nathan Doza, USAF
Prevalence of OEF/OIF Pain

- Pain reported by 42–47% of veterans receiving medical care in VA medical centers (Clark, 2004; Gironda et al., 2006)
- In a random subsample of 100 of those with pain, 57% reported pain in the moderately severe to severe range (pain $\geq 7$).
- Tampa Pain Outreach Program has contributed the most detailed data to date
- Recently funded VA HSRD project will provide opportunity to examine prevalence and course of pain and associated mental health problems
Pain Intensity/Location
(From sample of 127 veterans reporting pain and who completed an in depth interview)

- **Average Pain Rating = 5.4**

- **Primary Pain Locations**
  - Back: 47.2%
  - Knee: 18.9%
  - Shoulder: 9.4%
  - Neck: 6.3%
  - Ankle/Foot: 6.2%
  - Head: 5.5%
  - Hand/Wrist: 2.4%
  - Other: 4.1%
Headaches

- 58% endorsed the presence of headaches when asked
- 42% reported headache related interference and averaged 4 headaches per week
Pain Interference

- Physical/Recreational: 81.1%
- Sleep: 69.3%
- Emotional: 63.0%
- Occupational: 59.1%
- Familial: 27.6%
- Social: 26.8%
- Sexual: 21.3%
OIF/OEF Emotional Issues

Photo by Jim MacMillan, Associated Press, © 2004
Prevalence and Etiology

■ 53.7% reported an active mental health problem at the time of evaluation

■ Etiology:
  • Problem began prior to deployment- 23.6%
  • Problem began during deployment- 6.7%
  • Problem began after returned- 69.7%

■ Average pain ratings (0-10):
  • 5.6 for those reporting emotional problems
  • 4.9 for those denying emotional problems
PTSD

- **Screening symptoms endorsed:**
  - Arousal: 38.6%
  - Avoidance: 35.4%
  - Detachment: 34.6%
  - Nightmares: 24.4%

- Symptom onset average: **20 months**

- **28.3%** met the initial PTSD screening criteria
- **47.5%** responded positively to at least 1 PTSD screening item
Other Emotional Issues

- Depression 36%
- Post-deployment adjustment problems 23%
- Anxiety 20%
- Marital/Family problems 19%
- Alcohol abuse 19%
- Anger difficulties 15%
Mental Health Treatment

- Currently receiving Tx: 51.7%
- Type of Tx:
  - Therapy: 16.5%
  - Medications: 13.2%
  - Combination: 22.0%
Polytrauma Pain

- **89%** experienced ≥ 1 pain problem
- Valid verbal pain intensity ratings were obtained from **75%** of those patients at admission
  - Mean pain score: 4.1 (SD: 2.9; Range: 0-10)
- Average **duration of pain** at admission was 65.4 days (SD: 103.1; Range: 0 - 1054)
- Most commonly reported sites of pain were legs, head, back, arms, and neck
- Approximately **44%** reported pain related impairments
Polytrauma Pain Outcomes

- **21% reduction** in prescription of opioid pain medications (65% to 44%)

- **Average pain intensity declined** from **4.1 (2.9)** to **2.0 (2.8)** which was significant, $F(1,112) = 7.47, p = .00$

- However, pain continues to be a problem at discharge (Number of pts with any pain problem only declined from 113 to 100)

- Ultimate course of pain in polytrauma is unknown
Polytrauma Pain: Possible Course

POST-ACUTE PAIN

Surgical Revision & Other Iatrogenic Pain

Breakthrough Pain

Transition to chronic pain via unremitting acute pain

Pain Associated with Prolonged Tissue Healing

Post-Traumatic Stress Reaction & Other Psychosocial Factors

From Clark et al., in press
Nerve injury

Ectopic discharge

C fiber

Abeta fiber

Ectopic discharge

Limb trauma

Adapted from Woolf & Mannion, Lancet 1999
Attal & Bouhassira, Acta Neurol Scand 1999
Challenges of OEF/OIF Veteran Cohort

VA & community health system must treat post-injury pain as a priority after military discharge:

- To prevent pathophysiology:
  - Stop neuroplastic changes, central sensitization
  - Arrest musculoskeletal dysfunction

- To prevent disability:
  - Provide effective pain control
  - Rapidly restore function
Challenges of OEF/OIF Veteran Cohort

VA & community health system must treat post-injury pain as a priority after military discharge:

• To prevent social consequences:
  - Job loss
  - Relationship loss

• To prevent psychopathology
  - PTSD
  - Depression
  - Substance abuse
Challenges of OEF/OIF Veterans Cohort

VA and community health system not accustomed to treating survivors of massive wounds from blast injuries.

- head injuries causing other sensory disturbances besides pain
- disfigurement and social stigma
- cognitive and psychological damage
- neuropsychiatric impairments
- many pain generators

Soldiers require rehabilitation from polytrauma.
Recent evidence suggests that access to pain treatment after severe limb trauma leads to better outcomes.
Prevalence of chronic pain seven years following limb threatening lower extremity trauma

Renan C. Castillo, Ellen J. MacKenzie, Stephen T. Wegener, Michael J. Bosse, The LEAP Study Group

567 severe single extremity trauma patients at 7 years

- **Predictors of poor outcome before injury include:**
  - Alcohol abuse 1 month before injury
  - Older age, lower education, low self efficacy (Gallagher *Pain* 1989)

- **Predictors of poor outcome at 3 months post-injury:**
  - Acute pain intensity, anxiety, depression and sleep disturbance
“Patients treated with narcotic medication for pain at three months post-discharge were protected against chronic pain. Despite the fact that these patients had higher pain intensity levels and were thus at higher risk.”

“The results presented here appear to lend support to the theory that early aggressive pain treatment may protect patients from central sensitization and chronic pain.”
Early, Continuous, and Restorative Pain Management in Injured Soldiers: The Challenge Ahead

Rollin M. Gallagher, MD, MPH
Rosemary Polomano, PhD, RN

John Farrar, MD, PhD
David Oslin, MD
Wensheng Guo, PhD
Chester Buckenmaier, MD
Geselle McKnight, CRNP
Alexander Stojadinovic, MD
Efficacy of psychological approaches for pain management

- Strong support for multidisciplinary approaches

- Recent reviews documented efficacy of psychological interventions for back pain and arthritis

- Similar support for multiple chronically painful conditions
  - Diffuse musculoskeletal pain
  - Burn pain
  - Post-amputation pain
  - Gulf War Veterans Illness
  - Headache
Innovations in the treatment of comorbid chronic pain and PTSD

- VA Rehab RD funded Merit Project
  - Otis and Keane (Co-PI)
  - Designed innovative psychological intervention
  - RCT for persons with coprevalent pain and PTSD
    - 4 Rx conditions
  - Examine potential mechanisms
### Treatment Components

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<th>CBT for PTSD</th>
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<td>- Education re: pain</td>
<td>- Education re: PTSD</td>
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<td>- Relaxation training</td>
<td>- Cognitive restructuring</td>
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<td>- Teach coping skills</td>
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<td>- Stress management</td>
<td>- Social support</td>
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<td>- Activity pacing</td>
<td>- Anger management &amp; sleep</td>
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<td>- Pleasant activity scheduling</td>
<td>- Exposure therapy</td>
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<td>- Anger management</td>
<td>- Reprocessing the meaning of the event</td>
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<td>- Sleep hygiene</td>
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<td>- Relapse prevention</td>
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## Integrated Treatment

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<td>Education on Chronic Pain and PTSD</td>
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<td>Session 12</td>
<td>Relapse Prevention and Flare-up Planning</td>
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