

Caring for Post-Combat Veterans at the WRIISC: Recommendations for Management of Chronic Pain

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PDHS-WRIISC, California Site

June 5, 2018



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PDHS-WRIISC HISTORY

- WRIISC is a National VA Post-Deployment Health Program, established by **Public Law 105-368, 105th Congress, 1998**)
- There are three WRIISC sites: Washington, DC (VISN 5), East Orange, NJ (VISN 2); Palo Alto, CA (VISN 21)
- The WRIISC, now part of **Post-Deployment Health Services (PDHS)**, develops and provides post-deployment health expertise to Veterans and their health care providers through clinical programs, education and risk communication, and research
- Recently the PDHS-WRIISC was designated as a “**VA-delivered Foundational Service**”



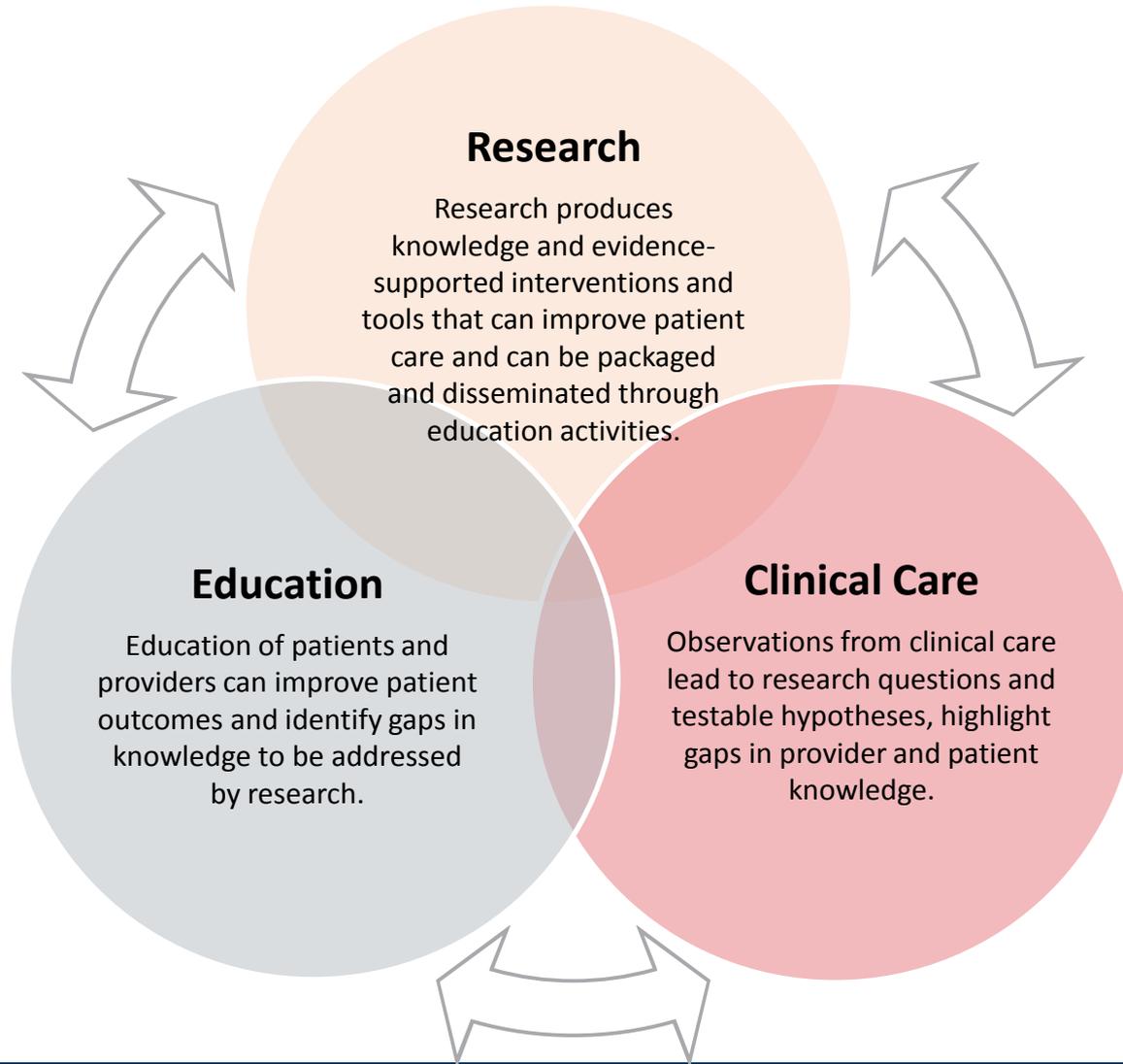
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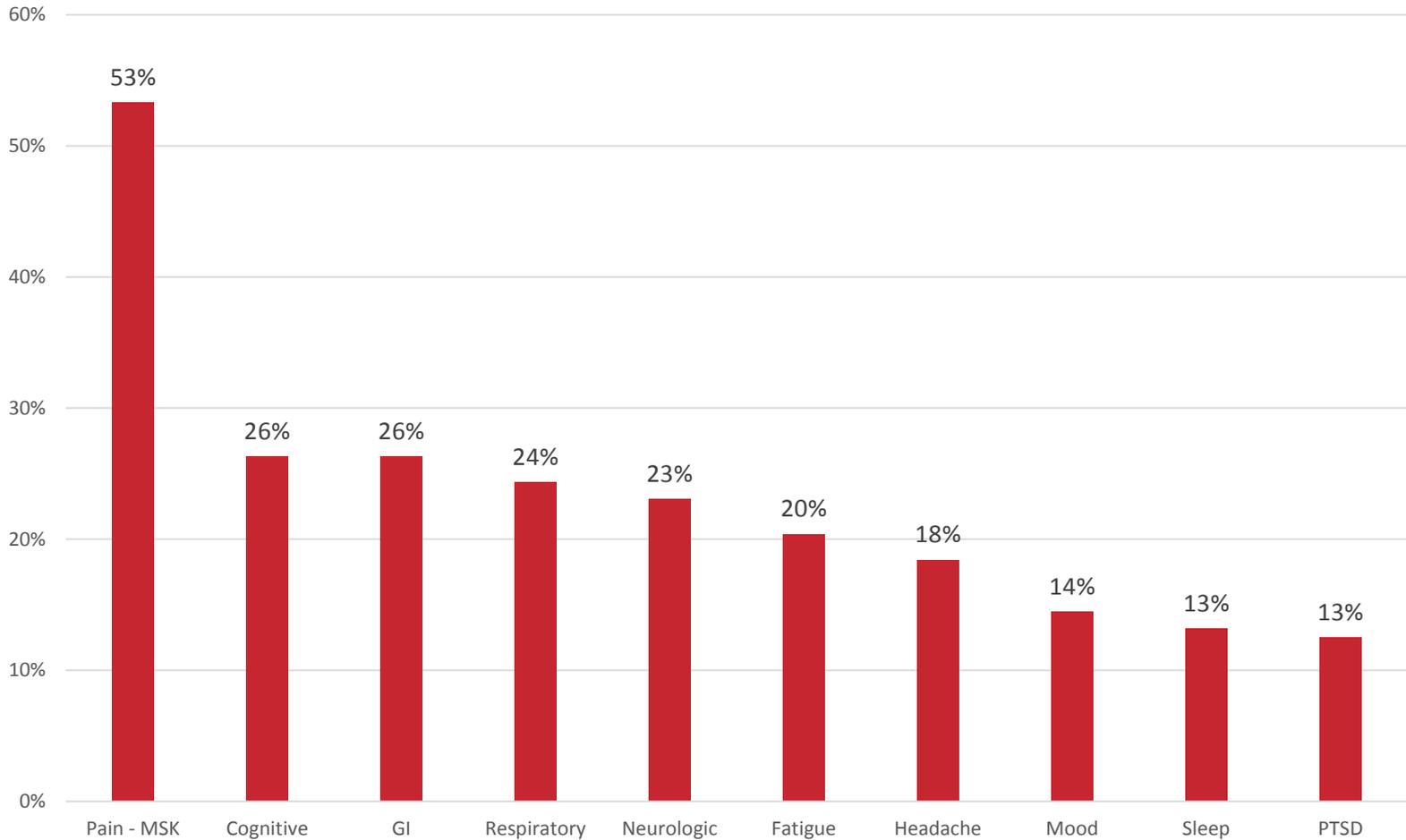
PDHS-WRIISC MODEL



Veterans' Top 3 Reported Symptoms (frequency)

Veterans seen at CA-WRIISC FY17 to present and scheduled

N=152



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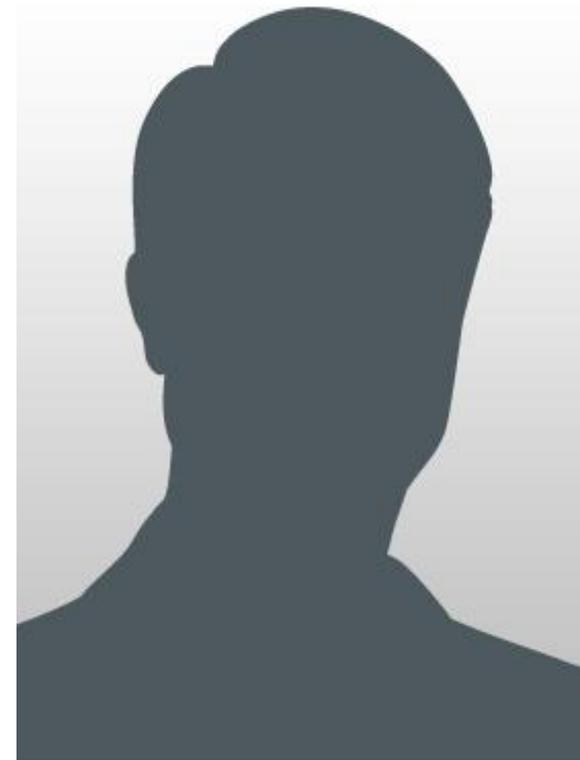
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CASE PRESENTATION - JEN JENNINGS, M.D.

- 57 Year American Indian Male Veteran
- Service Era: Persian Gulf War – 1/2006 – 10/2006
- PCP referred Vet for "C/O EXPOSURE TO GASES, CHEMICALS, SAND STORM AFFECTED THROAT, HAVING COUGH AND SOB"
- Veteran's Top 3 Concerns:
 - Respiratory (throat closure and breathing problems)
 - Pain- stabbing pains travel all over body
 - Neurological problems (general weakness, heat dysregulation, light headedness, Sjogren's syndrome)
- Weight: 215 lbs (up from 189 lbs after return from Iraq); BMI: 29.23



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HISTORY OF PRESENT ILLNESS

- Veteran in excellent health prior to joining military
- Member of tactical critical response unit & active shooter instructor prior to joining military at age 37
- Navy – 1996-2005 – shore patrol
- Deployed to Iraq in 2006 in Iraq
 - TBI x2 in Iraq, 2006
 - Fell inside Humvee during explosion fell on Left side hit head, Left shoulder, knee, another person fell on him
 - Fell out of lower bunk after explosion - Hit head on cement, fell on Left side, injuring shoulder, hip, no reported LOC, claims 24 hours of post-traumatic amnesia
 - Pneumonia – 10 days light duty – developed cough toward end of tour
 - Cough progressively worse since 2006



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MEASUREMENT OF PAIN

Digital Pain Matrix

(to be completed by a trained clinician)

ID:

DATE:

TIME (24hr):

INSTRUCTIONS: Please rate your pain by checking the one number that best describes your pain at its worst in the past month, for each region in which you have had pain:

Regions affected by pain:	None		mild				moderate			severe		extreme	
	0	1	2	3	4	5	6	7	8	9	10		
1. LEFT - Shoulder	<input type="radio"/>												
2. LEFT - Upper arm/elbow	<input type="radio"/>												
3. LEFT - Lower arm/wrist/hand	<input type="radio"/>												
4. RIGHT - Shoulder	<input type="radio"/>												
5. RIGHT - Upper arm/elbow	<input type="radio"/>												
6. RIGHT - Lower arm/wrist/hand	<input type="radio"/>												
7. LEFT - Hip	<input type="radio"/>												
8. LEFT - Upper leg/knee	<input type="radio"/>												
9. LEFT - Lower leg/ankle/foot	<input type="radio"/>												
10. RIGHT - Hip	<input type="radio"/>												
11. RIGHT - Upper leg/knee	<input type="radio"/>												
12. RIGHT - Lower leg/ankle/foot	<input type="radio"/>												
13. Neck/cervical spine	<input type="radio"/>												
14. Upper back/thoracic spine	<input type="radio"/>												
15. Lower back/lumbo-sacral spine	<input type="radio"/>												
16. Head /headache	<input type="radio"/>												
17. LEFT - Jaw	<input type="radio"/>												
18. RIGHT - Jaw	<input type="radio"/>												
19. Chest	<input type="radio"/>												
20. Stomach ache / Abdominal pain	<input type="radio"/>												

Overall pain:	None		mild				moderate			severe		extreme	
	0	1	2	3	4	5	6	7	8	9	10		
General Pain	<input type="radio"/>												
Pain at Rest	<input type="radio"/>												
Pain with Movement/Activities	<input type="radio"/>												

Digital Pain Matrix designed by: J. Wesson Ashford, Mark Perlow, Quai Wentt



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PAIN LEVELS

Specific location and Pain Levels > 5:

1. LEFT - Shoulder: - extreme - 9 (surgery - impingement)
2. LEFT - Upper arm/elbow: - moderate - 5
4. RIGHT - Shoulder: - severe - 8 (surgery - impingement)
6. RIGHT - Lower arm/wrist/hand: - severe - 7 - slowly developed
8. LEFT - Upper leg/knee: - moderate - 6 - injured in HumVee
10. RIGHT - Hip: - severe - 7.5 - from off-loading water containers
11. RIGHT - Upper leg/knee: - moderate - 5 - radiating pain from hip
12. RIGHT - Lower leg/ankle/foot: - moderate - 6 - same
14. Upper back/thoracic spine: - severe - 8.5 - slowly developed
16. Head /headache: - severe - 7 - from head injuries: always



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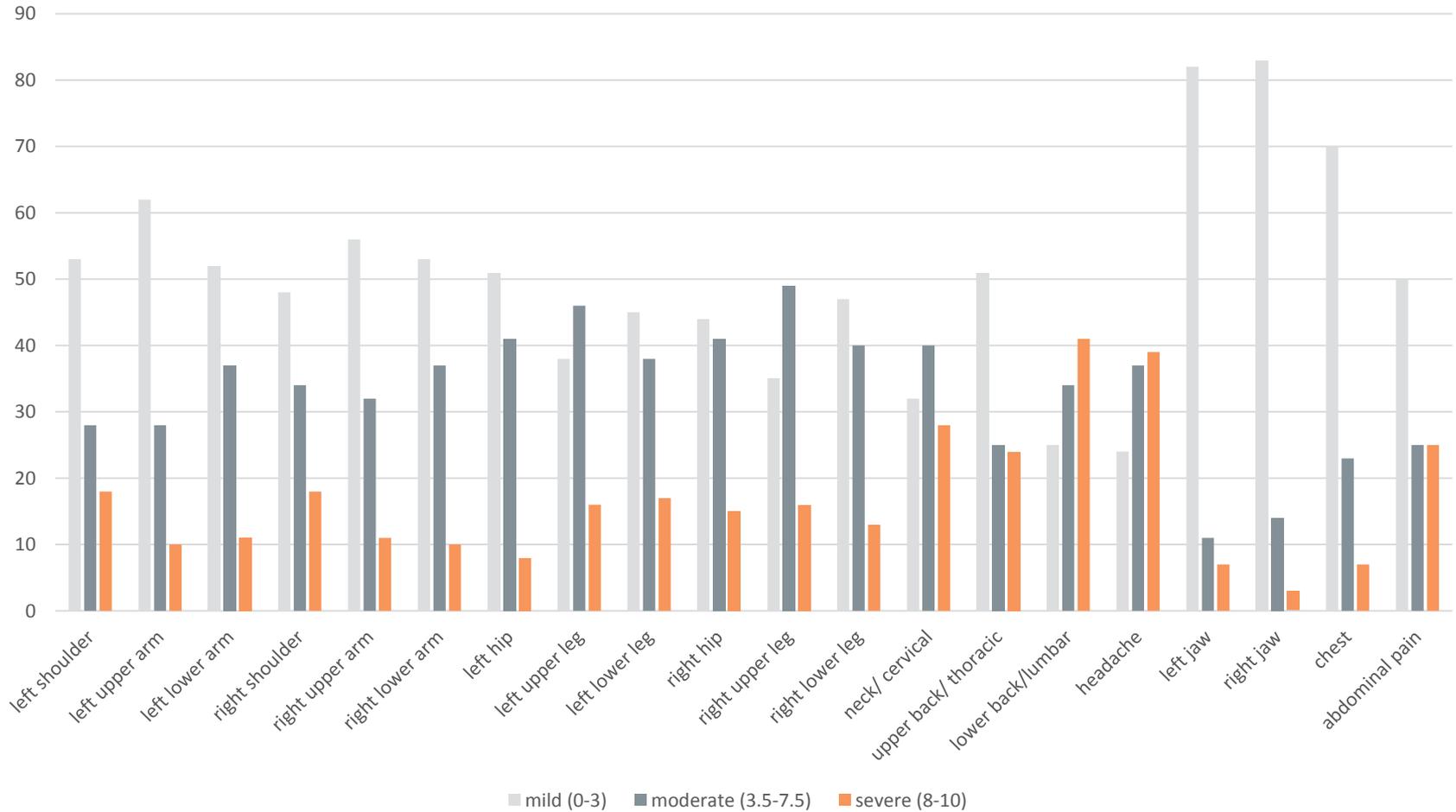
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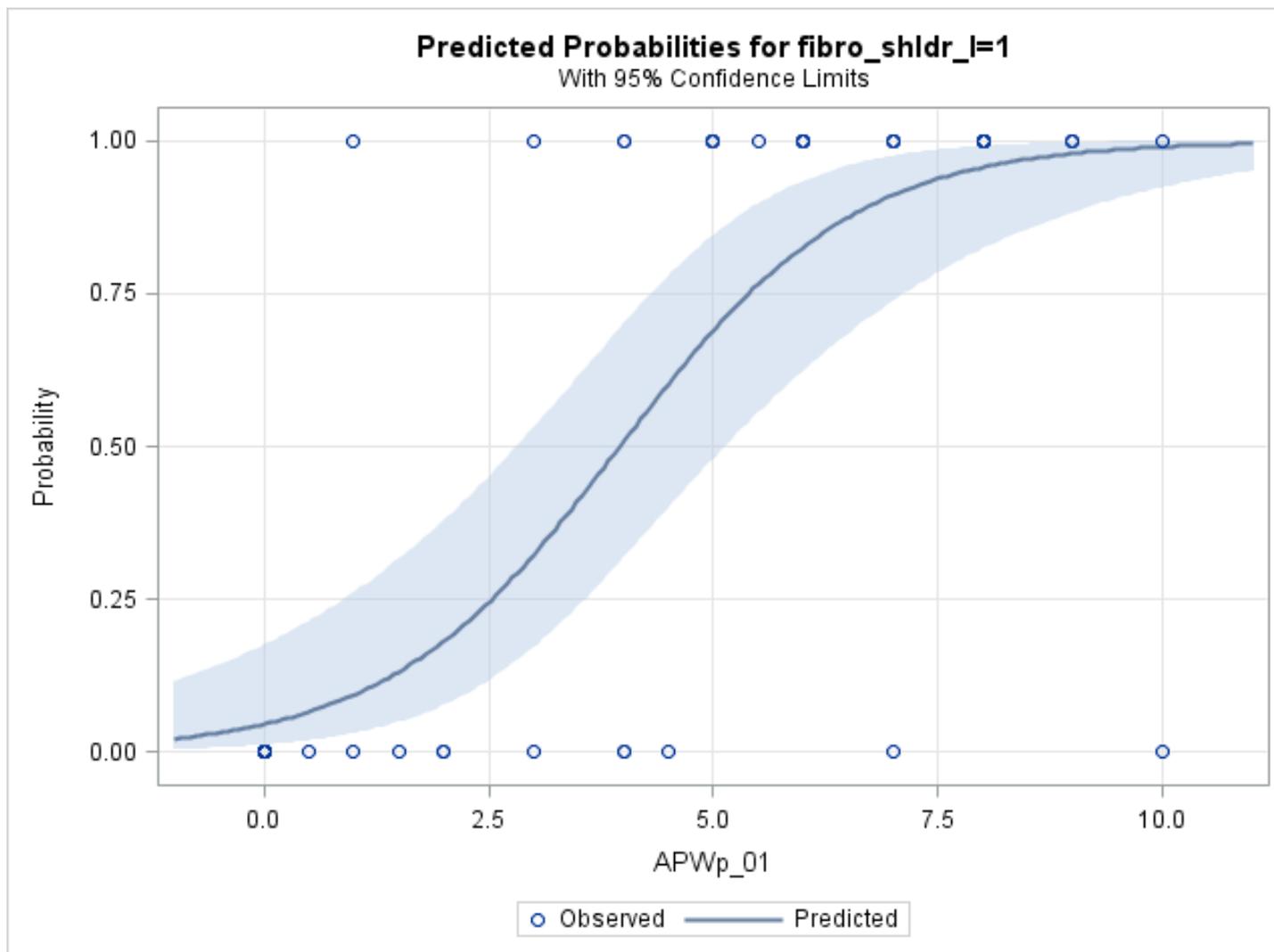
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USING THE DIGITAL PAIN MATRIX

Location and Severity of Pain in 70 WRIISC Patients
by percent



COMPARING THE PAIN MATRIX TO THE FIBROMYALGIA SCALE



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THE PROBLEM OF CHRONIC PAIN

- Pain is a significant national health issue
- The Institute of Medicine reports that in 2011, the total annual financial costs to the US due to pain amounted to \$560 billion—more than the total financial costs due to cancer, heart disease, and diabetes combined
- Chronic pain is one of the most frequently reported symptoms of Veterans recently returning from combat, reported to be as high as 19.2%, high compared with the prevalence of fibromyalgia in the general population, which is about 2.1%.



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WHAT CAUSES CHRONIC PAIN?

Common in Post-Deployment Veterans:

- Osteoarthritis: related to over-use - common in Veterans (ankle, knee, hip, back, shoulder)
- Headache: common after traumatic brain injury
- Migraine: similar to post-traumatic headaches
- Back pain
- Fibromyalgia: frequently diagnosed, misdiagnosed, criteria are not clear, related to GWI?
- Nerve damage, neuropathy: many post-deployment cases, causes unclear (GWI)
- Irritable bowel syndrome versus GERD
- Specific injury that has long since healed



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CHRONIC PAIN SYNDROMES

- **Chronic Regional Pain Syndrome (CRPS)**
(described as the most painful long-term condition)
 - **Type 1: Reflex Sympathetic Dystrophy (RSD)**
 - No demonstrable nerve lesions
 - **Type 2: Causalgia**
 - Related to specific nerve injury – presumable sympathetic nerve pathways
- **Chronic Pervasive Pain Syndrome (CPPS)**
 - Consider Tardive Dysautonomia
 - possibly NGF related – excess connections
 - Difficult to determine histopathologically (excess, not lack)



MANAGEMENT OF PAIN - PHARMACOLOGIC

- Avoid narcotics, tranquilizers, central anti-cholinergics
 - May consider opioid blocking agent – naltrexone
- Consider anti-depressants with anti-pain effects
 - With anti-cholinergic effects: Nortriptyline, doxepin (stabilize GI symptoms)
 - Without anti-cholinergic effects: duloxetine, bupropion (for nicotine users especially)
 - Anti-convulsant agents: gabapentin, pregabalin
- Numerous adrenergic agents – alpha, beta, etc.; melatonin



MANAGEMENT OF PAIN – NON-PHARMACOLOGIC

- **Exercise – low-impact, non-exhausting, graded**
 - Gradually increase to over 150 minutes/week
 - Swimming (need more use of Masters Swimming Programs – free to Vets: www.usms.org)
 - Low-impact aerobic exercises - elliptical exercise machines
 - Stretching and resistance routines, Pilates
- **Complementary Modalities:**
 - Yoga,
 - Tai Chi
 - Massage Therapy
- **Acupuncture**



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rTMS FOR THE TREATMENT OF CHRONIC PAIN

- What is Transcranial Magnetic Stimulation?
 - rTMS is a method of non-invasive brain stimulation that is done on an outpatient basis
 - The participant is awake and alert during treatments that last approximately 20 minutes
 - rTMS is an FDA-approved treatment for depression (focus – Left prefrontal cortex)



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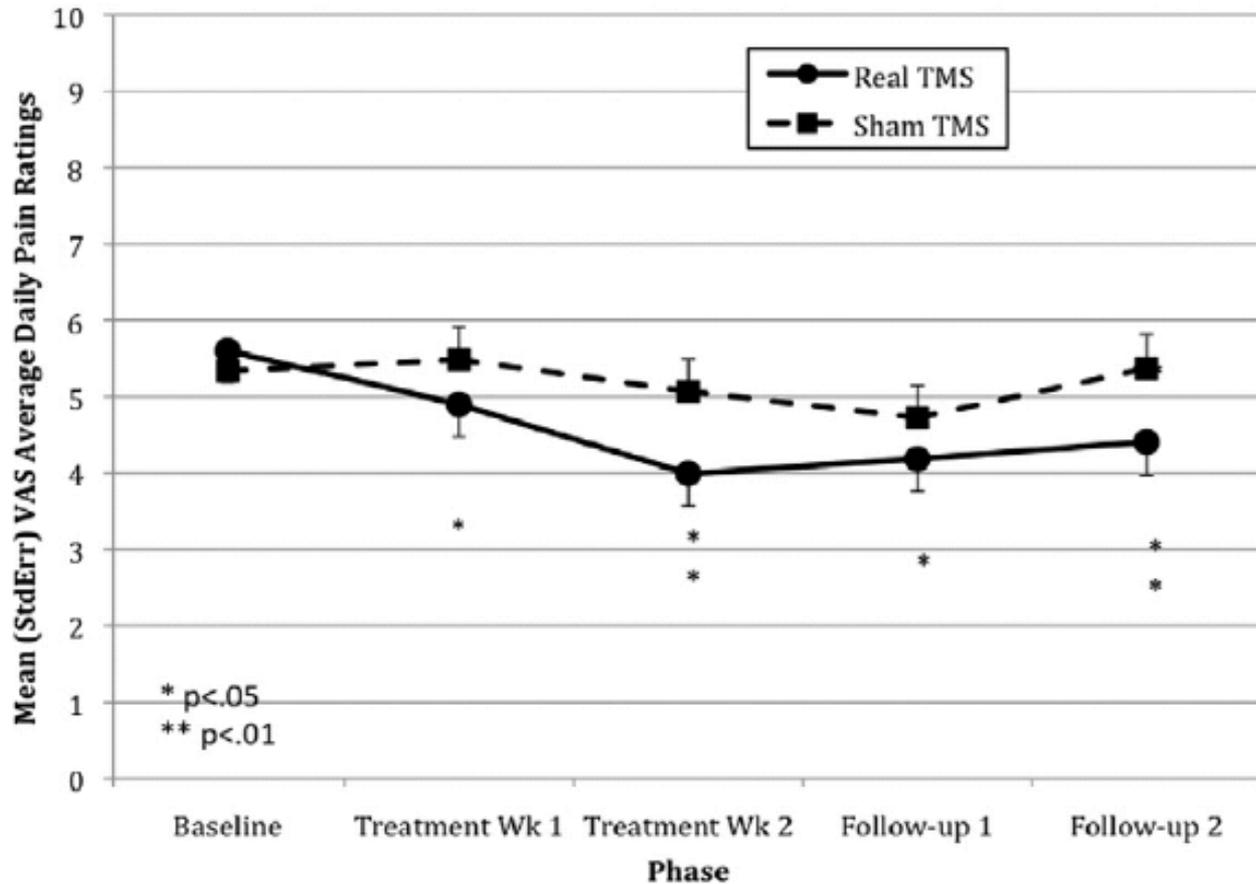
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TMS EFFECT ON VISUAL ANALOG SCALE (VAS) IN FIBROMYALGIA PATIENTS

Worst pain



No pain

Left prefrontal rTMS reduces fibromyalgia pain (Short et al., Pain, 2011)



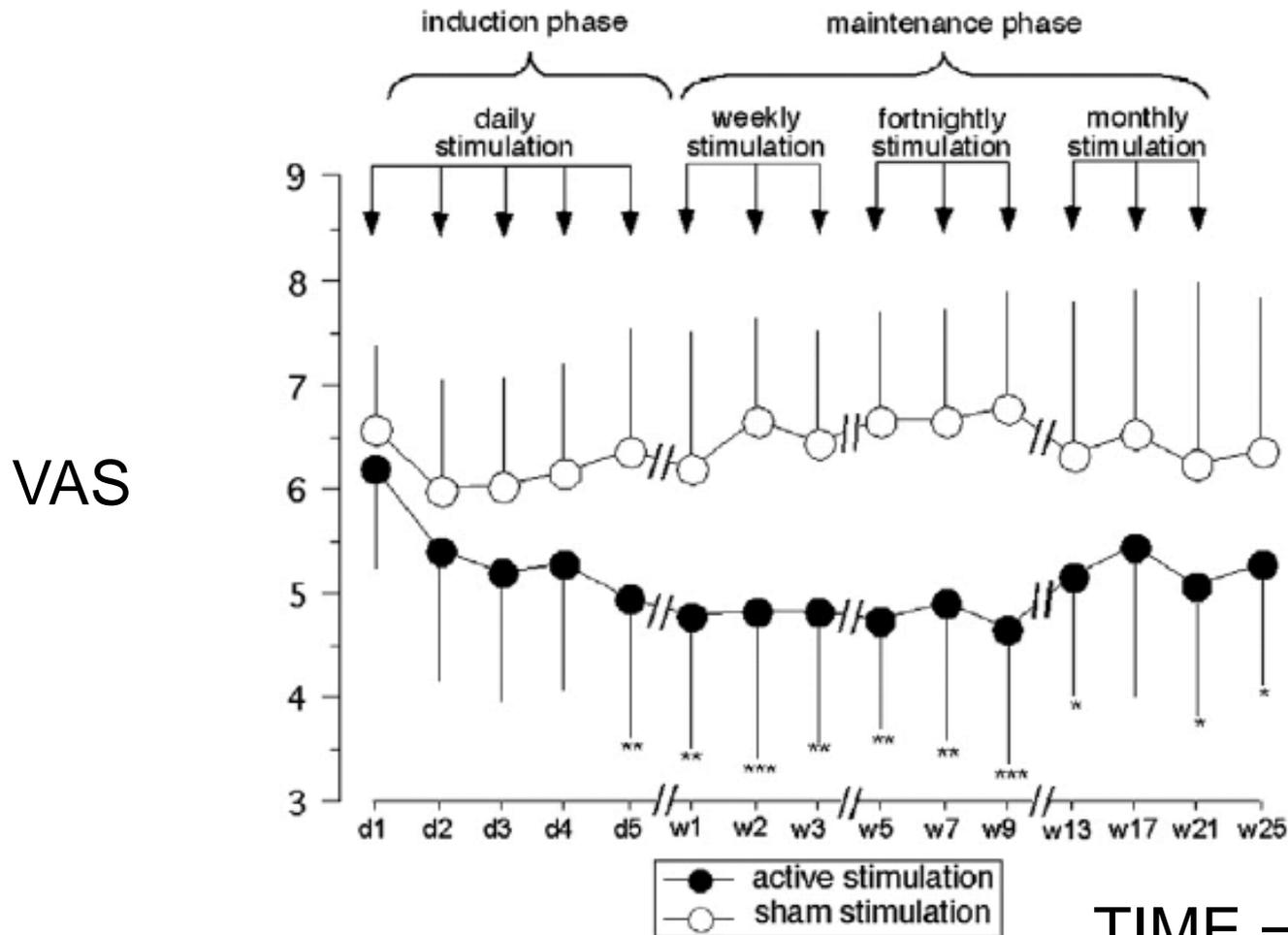
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TMS EFFECT ON VISUAL ANALOG SCALE (VAS) IN FIBROMYALGIA PATIENTS



TIME = 6 months

Long-term maintenance of rTMS analgesia in fibromyalgia (Mhalla et al., Pain, 2011)

YOGA FOR CHRONIC PAIN

- What is Yoga?

- A complete holistic system for transformation – incorporates the concept of the innate ability to effect changes with repeated practice (neuroplasticity) and for self healing
- Based on the ***Yoga Sutras***
 - attributed to Patanjali, 2nd century BCE
- Set of 195 aphorisms on how to reduce suffering
- Meant to be shared from teacher to student



If you can breathe.....you can do yoga



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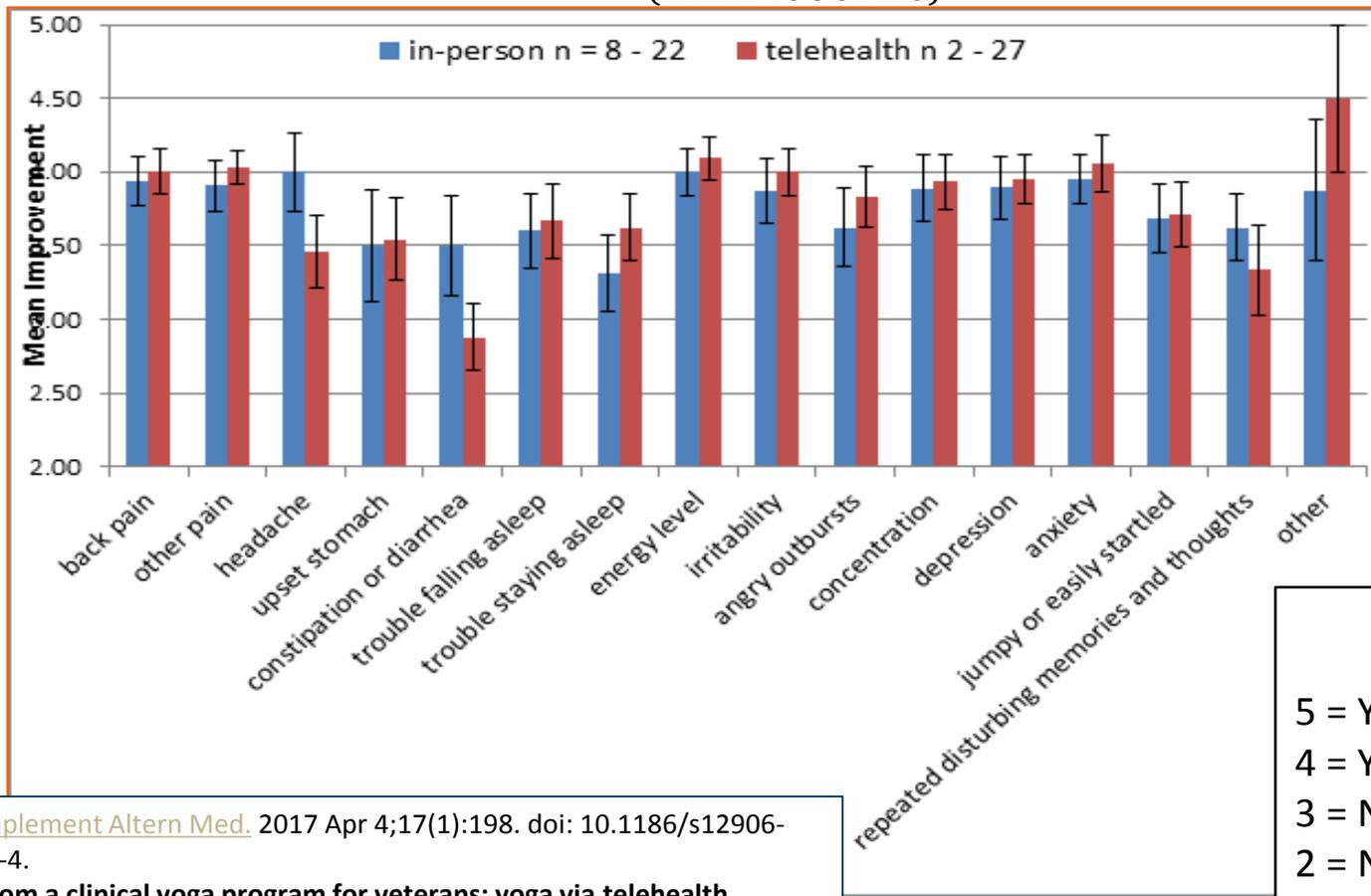
YOGA SATISFACTION QUESTIONNAIRE

- Program evaluation collected from 64 Veterans (17 female, 47 male)
- Questions of relevance:
 16. How many WRIISC yoga classes have you taken (best guess)?
 17. Why did you first come to yoga?
 18. Have you noticed any improvement in your symptoms since starting yoga at VA?
 19. Have you noticed any improvement in the following symptoms?



SYMPTOM IMPROVEMENT IN-PERSON VS. TELEHEALTH

(MEAN SCORES)



Scale

5 = Yes, completely
 4 = Yes, somewhat
 3 = Not very much
 2 = Not at all

[BMC Complement Altern Med.](https://doi.org/10.1186/s12906-017-1705-4) 2017 Apr 4;17(1):198. doi: 10.1186/s12906-017-1705-4.
Results from a clinical yoga program for veterans: yoga via telehealth provides comparable satisfaction and health improvements to in-person yoga.

HAVE YOU NOTICED ANY IMPROVEMENT IN THE FOLLOWING SYMPTOMS? (SORTED BY MOST IMPROVED, N=53)

Symptom	Endorsed Symptom	Some or Complete Improvement
Other Pain in Muscles, Joints, or Bones	83%	85%
Energy Level	72%	83%
Back Pain	67%	79%
Depression	72%	74%
Anxiety	69%	73%
Other	17%	73%
Feeling Irritable	61%	69%
Difficulty Concentrating	67%	60%
Feeling Jumpy or Easily Startled	64%	51%
Trouble Falling Asleep	53%	50%
Trouble Staying Asleep	59%	50%
Repeated Disturbing Memories or Thoughts	61%	49%
Angry Outbursts	58%	49%
Headaches	45%	48%
Constipation/Diarrhea	40%	23%



PROGRAM EVALUATION

n=115

- Why are Veterans referred to yoga? (from referral template)
 - Low back/Neck Pain, Other Chronic Pain, Fatigue, Stress/Anxiety, Depression, Sleep Issues, Health and Wellness, Strength/Flexibility, PTSD, MOVE Referral, Meditation/Mindfulness, Reduce Narcotic Usage
- What are their top symptoms? (myMop-2)
- Do they attend? (Y/N)
- Does yoga help with self-reported symptoms?



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VETERAN REPORTED SYMPTOMS/REFERRAL REASONS

Gender/Age	Female	Male	Age Range F	Age Range M
Drop-in	25	56	29-66	27-85
Telehealth	47	183	24-85	25-91

Veteran Top Reported Symptom	N
Low Back/Neck Pain	44
Other Chronic Pain	25
Stress/Anxiety	14
Sleep	7
PTSD	5
Fatigue	3
Cognitive Issues	2
Headache/Migraine	1
Neurological Issues	1
GI Issues	1
Vision Hearing	1
Respiratory Issues	1

Provider Referral Reasons	N
Stress/Anxiety	30
Meditation/Mindfulness	22
Health and Wellness	21
Strength/Flexibility	21
Low back/Neck Pain	18
Sleep Issues	15
Depression	13
PTSD Symptoms	13
Other Chronic Pain	8
Fatigue	7
Reduce Narcotic Usage	1
MOVE referral	1



Results: N= 11; 8 Male, 3 Female; Age 30-79

MYMOP-2 Results

Out of 115 initial MYMOP-2 forms completed, only 11 completed follow-up

- Symptom Improvement for Symptom 1 and Symptom 2
- Improvement in ability to do an activity that is important to them
- Improvement in general feeling of wellbeing in the last week

	Symptom 1	Symptom 2 *	Activity	Wellbeing
Improved	45%	75%	100% **	36%
Got Worse	.9%	-	-	27%
No Change	27%	25%	-	36%

* Only 5/11 Veterans reported a symptom 2; ** 2/8 reported Activity level “As good as it could be”



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