

Managing Chronic Pain: A Cognitive Behavioral Therapy Approach

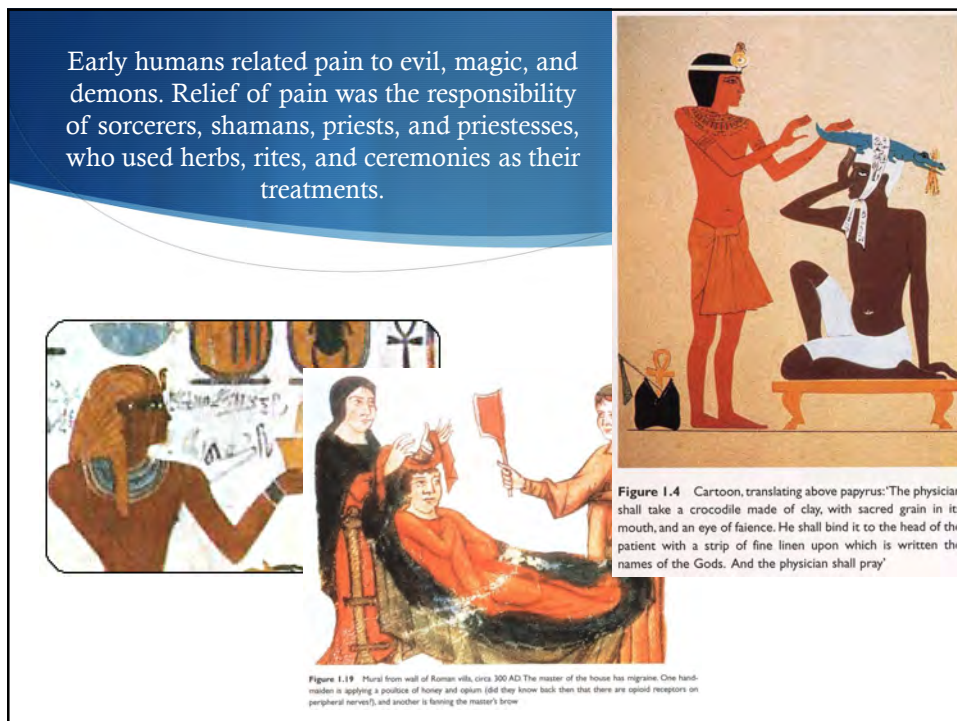
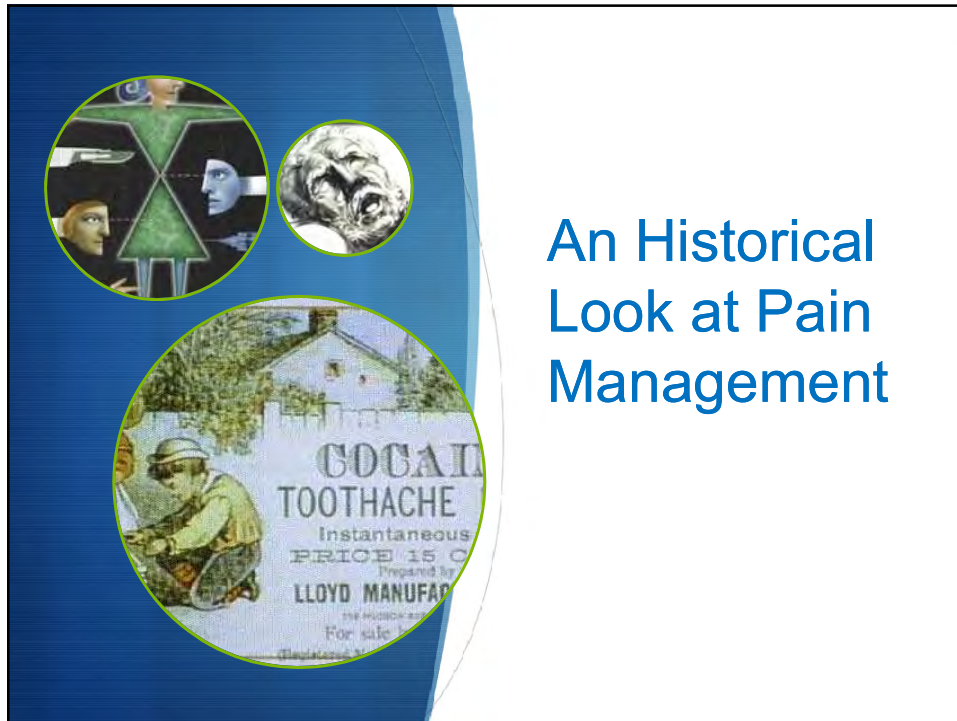
John D. Otis, Ph.D.
Associate Professor

Center for Anxiety and Related Disorders at
Boston University



Today's Agenda

- ◆ An Historical Look at Pain Management
- ◆ The Problem of Chronic Pain
- ◆ CBT for Pain
- ◆ Case Review
- ◆ Research: Pain and PTSD

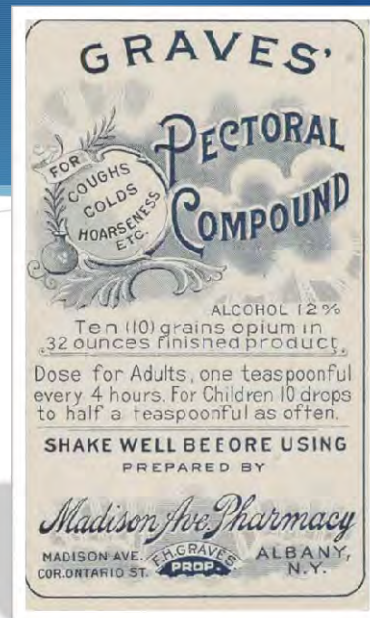


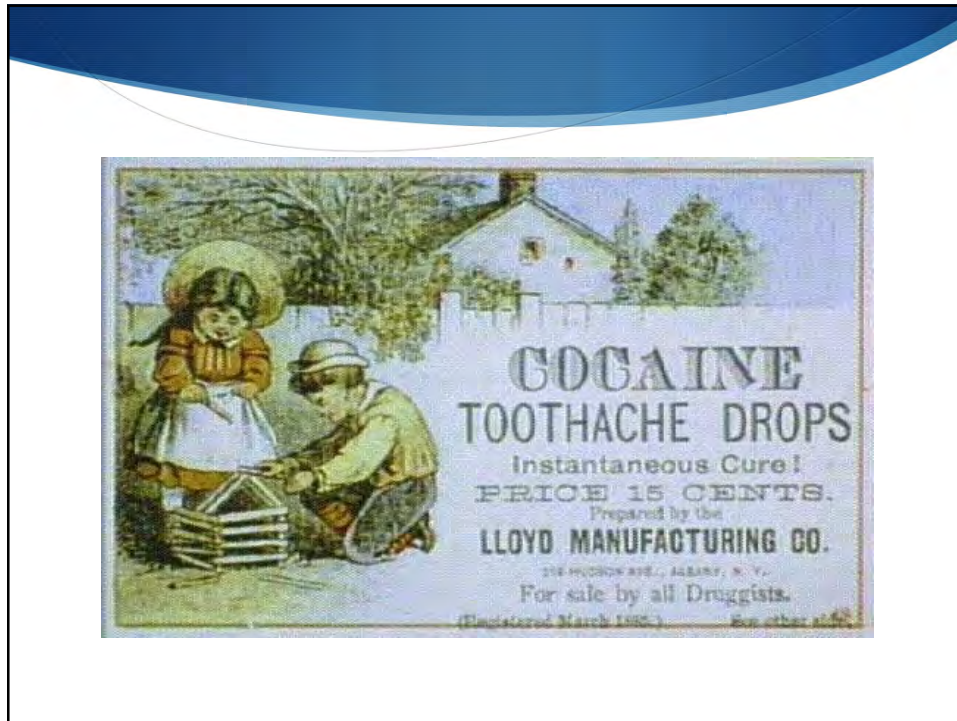
Early 19th Century Pain Relief

- Most pain relievers were made from plants and could be deadly when taken in overdose. One of the most commonly used substances was opium derived from the poppy flower. Other substances used included alcohol or wine, mandrake, belladonna, and marijuana.

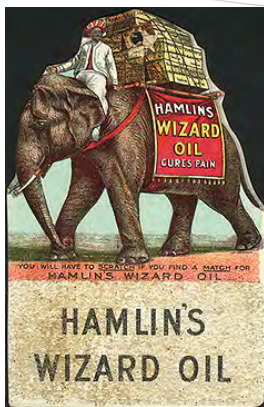


Potions that included these substances were commonly available around the turn of the century and promised to cure a variety of afflictions.





- ◆ Touted as a cure for Rheumatism, Sprains, Bruises, Lame Back, Frost Bites, Diarrhea, Burns and Scalds.
- ◆ Contents = 50%-70% alcohol, camphor, ammonia, chloroform, sassafras, cloves, and turpentine.
- ◆ Wizard Oil could also be used on horses and cattle.



Coca-Cola was originally sold as a medicine. It contained stimulating extracts from coca leaves and kola nuts. It was available in carbonated form at the pharmacy and as a concentrated syrup. From 1886 until 1903 the formula for Coca-Cola included approximately 9 milligrams of cocaine per serving.

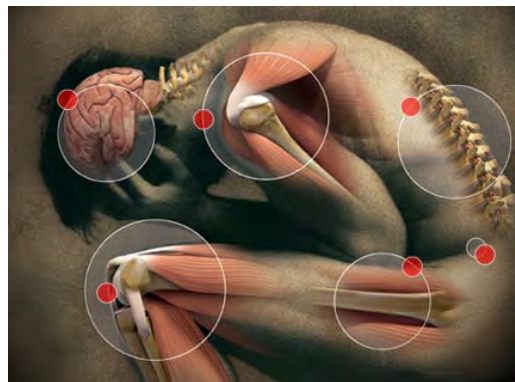


Mrs. Winslow's Soothing Syrup was an indispensable aid to mothers and child-care workers. Containing 65 mg of morphine per fluid ounce, it effectively quieted restless infants and small children.





What is the true impact of PAIN?





What is Chronic Pain?

How do patients experience it?



What is Chronic Pain?

- ◆ Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (IASP, 1994).
- ◆ Chronic pain = Pain with a duration of 3 months or greater that is often associated with functional, psychological and social problems that can negatively impact a persons life.



Costs of Pain

- ◆ The annual costs of pain have been estimated to be between \$560-\$635 billion
- ◆ Pain affects more Americans than diabetes, heart disease and cancer combined (100 million Americans)
- ◆ When asked about four common types of pain, respondents of a NIH survey indicated that low back pain was the most common (27%), followed by severe headache or migraine pain (15%), neck pain (15%) and facial pain (4%).
- ◆ Back pain is the leading cause of disability in Americans under 45 years old. More than 26 million Americans between the ages of 20-64 experience frequent back pain.

Darrell J. Gaskin, Patrick Richard. The Economic Costs of Pain in the United States. The Journal of Pain, 2012; 13 (8): 715 DOI: [10.1016/j.jpain.2012.03.009](https://doi.org/10.1016/j.jpain.2012.03.009)

Prevalence of Chronic Pain in Veterans

- ◆ Pain is one of the most common complaints made by patients to primary care providers in the VA healthcare system (approximately 50% of patients).

Kerns, R. D., Otis, J. D., Rosenberg, R., & Reid C. (2003). Veterans' concerns about pain and their associations with ratings of health, health risk behaviors, affective distress, and use of the healthcare system. *Journal of Rehabilitation, Research and Development*, 40(5), 371-380. (PMID: 15080222)



The Problem of Pain

- ◆ Pain is typically an adaptive reaction to an injury and gradually decreases over time with conservative treatment.
- ◆ However, for some people pain persists past the point where it is considered adaptive and contributes to ...
 - ◆ Negative Mood (depression)
 - ◆ Disability
 - ◆ Increased use of healthcare system resources.



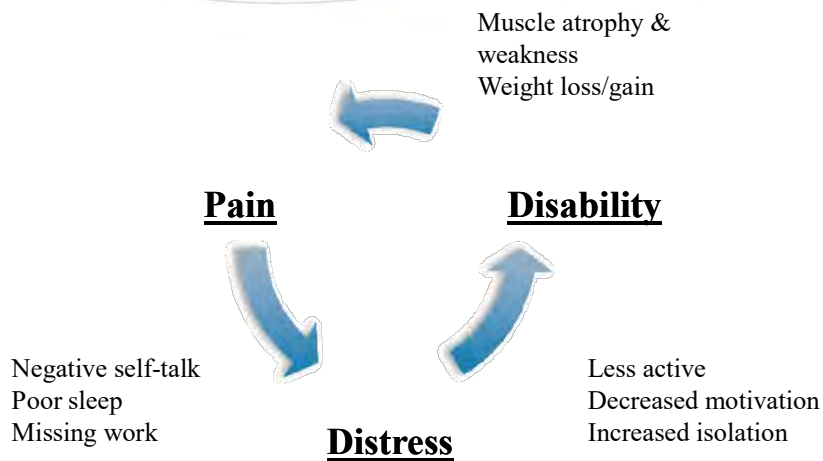
The Role of Thoughts and Emotions

Henry Knowles Beecher: WWII Soldiers & Pain

- ◆ Observed that soldiers with serious wounds complained of less pain than did his postoperative patients at Massachusetts General Hospital.

Hypothesis: => The soldier's pain was alleviated by his survival of combat and the knowledge that he could now spend weeks or months in safety and relative comfort while he recovered. The hospital patient, however, had been removed from his home environment and now faced an extended period of illness and the fear of possible complications.

The Pain Cycle



The Challenge of Pain

- ◆ Over time, negative thoughts and beliefs about pain, and behaviors related to pain can become very resistant to change.

Thoughts

- My body has failed me
- This is never going to end
- I'm worthless
- I'm disabled
- My military career is ruined
- I'm a bad parent, spouse, and provider

Behaviors

- Staying in bed all day
- Sleeping all day
- Staying away from friends
- Decreasing activities that have the potential to increase pain
- Taking more medication than prescribed

Evidence-based CBT for Chronic Pain

- ◆ CBT has been found to be effective for a number of chronic pain conditions, including headache, rheumatic diseases, chronic pain syndrome, chronic low-back pain, and irritable bowel syndrome.
- ◆ Significant evidence base supporting the use of CBT for chronic pain management
 - ◆ Hoffman, Papas, Chatkoff, & Kerns, (2007)
 - ◆ Otis, Sanderson, Hardway, Pincus, Tun, & Soumekh (2013)
 - ◆ Buhrman, Syk, Burvall, Hartig, Gordh, & Anderson (2014)

CBT for Chronic Pain

- ◆ Basic components of CBT for pain include:
 - ◆ Encourage increasing activity by setting goals.
 - ◆ Identify and challenge inaccurate beliefs about pain
 - ◆ Teach cognitive and behavioral coping skills (e.g., relaxation, restructuring negative thoughts, activity pacing)
 - ◆ Practice and consolidation of coping skills and reinforcement of their appropriate use

Managing Chronic Pain

<u>Session 1</u>	Education & Treatment Rationale
<u>Session 2</u>	Theories of Pain, Breathing
<u>Session 3</u>	Relaxation Training
<u>Session 4</u>	Cognitive Errors
<u>Session 5</u>	Cognitive Restructuring
<u>Session 6</u>	Stress Management
<u>Session 7</u>	Time-Based Activity Pacing
<u>Session 8</u>	Pleasant Activity Scheduling
<u>Session 9</u>	Anger Management
<u>Session 10</u>	Sleep Hygiene
<u>Session 11</u>	Relapse Prevention

Otis, J. D., (2007). *Managing Chronic Pain: A Cognitive-Behavioral Therapy Approach*, Therapist Guide. Treatments that Work Series, Oxford University Press, NY.

Children and Pain

- ◆ Children's pain is more plastic than that of adults, such that psychosocial factors may exert an even more powerful influence (McGrath & Hillier, 2002).
- ◆ Parents' response to children's expression of pain can either further exacerbate or reduce the child's perception or expression of pain.
- ◆ The ultimate goal of cognitive-behavioral strategies is to help children have concrete tools to cope with their experience of pain so that developmentally appropriate activities can resume.

Children and Pain

Techniques:

- ◆ Distraction techniques (such as counting) during painful medical procedures, or thinking about a favorite holiday.
- ◆ Relaxation techniques are helpful for coping with painful procedures.
- ◆ Cognitive coping - Children have found it helpful to "throw away" negative thoughts and instead use positive coping thoughts such as "I can cope with anything that comes my way; I am very strong and brave."

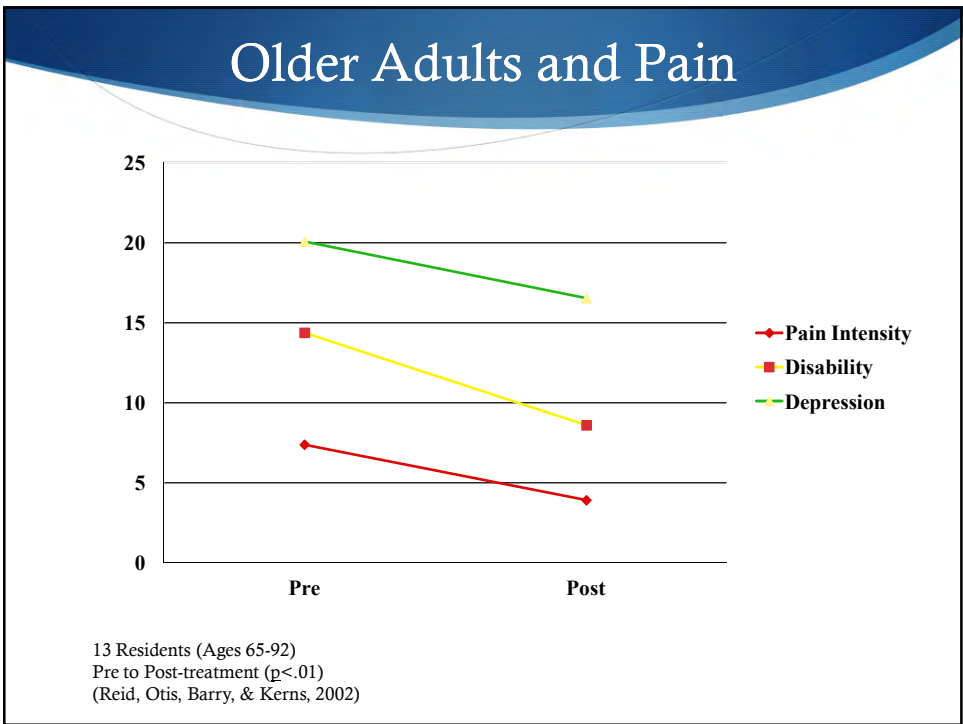
Older Adults and Pain

Beliefs and expectations about pain

- ◆ Pain is an expected part of growing older (e.g., losing a tooth or hair)

Previous experience with pain

- ◆ A history of successfully coping with a pain problem (e.g., older adults and knee surgery)



Overview of CBT for Chronic Pain



Overcoming Obstacles to Engagement

“My pain is in my back, not in my head”

“You all think I'm crazy”

“No one thinks my pain is real”

“I tried this before”

“This is not going to work for me”

“I haven't got time for this”

“If my provider would give me the medications I want I would be fine”



Critical Element of Treatment

Present Convincing Treatment Rationale

Treatment only works if patients are engaged. Your patients will drop out if they don't think you have something to offer them.

- ◆ Address their concerns and use MI to help the patient arrive at their own decision to try CBT
- ◆ Read key articles and chapters related to pain management but deliver content in your own words

Critical Element of Treatment

Relaxation Training: Breathing

Learning to breathe correctly is one of the easiest methods of learning how to relax and help reduce pain.

- ◆ Why begin with breathing?
 - ◆ It is a concrete skill
 - ◆ Easy to learn
 - ◆ Lasting benefits
 - ◆ Early success with this skill sets the patient up for success on future goals.
- ◆ Other Techniques? PMR, Imagery, Yoga, Meditation, Tai Chi

Critical Element of Treatment

Challenge Negative Thinking

Goals:

- ◆ Recognize cognitive errors and maladaptive thoughts, challenge those thoughts, and substitute more adaptive ones.
- ◆ Create a more balanced way of thinking in order to reduce negative emotions that contribute to the experience of pain.

Tips:

- ◆ Not all thoughts are accurate
- ◆ You can control the way you think

Identify Cognitive Errors

- Start by stating that we all do these to some extent, but it's important to be aware if there are some that we do more than others.
- Review these one at a time with the patient.
- You can take turns reading them or ask the patient to read them aloud.
- Check off ones that apply

1. *All-or-nothing thinking*: When you see things in all-or-nothing categories. For example, if your performance falls short of perfect, you see yourself as a total failure.
2. *Overgeneralization*: When you see a single negative event as a never-ending pattern. For example, if you do not do well at one thing, you think you are not good at anything.
3. *Mental filter*: When you pick out a single negative detail and dwell on it exclusively, so that your vision of all reality becomes darkened. A good metaphor is a drop of ink that discolors the entire glass of water.
4. *Disqualifying the positive*: When you reject positive experiences by insisting they "don't count" for some reason or another. In this way, you can maintain a negative belief that is contradicted by your everyday experiences.
5. *Jumping to conclusions*: When you make a negative interpretation of an event even though there are no definite facts that convincingly support your conclusion.
 - a. *Mind reading*: When you arbitrarily conclude that people are reacting negatively to you, and you do not bother to consider other possible explanations for their behavior (e.g., they are tired, they had a rough day)
 - b. *The fortune-teller error*: When you anticipate that things will turn out badly, and you feel convinced that your prediction is an already established fact. This prediction may in turn affect your behavior, making it a self-fulfilling prophecy.
6. *Binocular vision*: When you distort information in a way that no longer allows you to view the situation realistically.
 - a. *Magnification*: When you exaggerate the importance of things (such as your goof-up, or someone else's achievement)
 - b. *Minimization*: When you inappropriately shrink things (such as your own positive qualities or someone else's imperfections) until they appear tiny
7. *Catastrophizing*: When you predict extreme and horrible consequences to the outcomes of events. For example, a turnaround for

Restructure Thoughts

Common negative/maladaptive thoughts

- ◆ I can't deal with my pain
- ◆ My pain is going to kill me
- ◆ I'm worthless to my family
- ◆ I cant do anything because of my pain
- ◆ People think I'm lazy
- ◆ I have nothing to offer anyone
- ◆ I'm a bad father/mother

Situation	Emotion	Automatic Thought	Evidence for	Evidence against	Positive Coping Thought	Emotion
Describe the event that led to the unpleasant emotion.	Specify sad, angry, etc., and rate the emotion from 0% to 100%.	Write the automatic thought that preceded the emotion.	What is the evidence that this thought is true?	What is the evidence that this thought is false?	What else can I say to myself instead of the automatic thought?	Re-rate the emotion from 0% to 100%.
A pain flare-up on a busy day.	Depressed 60% Frustrated 50%	I can't cope with my pain, my life is miserable.	There is too much going on today. I feel overwhelmed and I'm not getting my work done.	I have had busy days before when I've been in pain and I was able to handle my pain and all my responsibilities well. I'm usually very productive. My life isn't all bad (I have a great family).	Not every day is this hectic and some days are good. I have made it through very hectic days before and I can do it again.	Depressed 25% Frustrated 30%

Note that while one of the thoughts is pain-specific, the patient has also brought in an automatic thought about life in general being miserable. With this cognitive error, he discounts the positive aspects of his life.

What's Wrong with These Messages?



Time-based Pacing

- ◆ Activity breaks are based on time intervals, not on how much of the job is completed
- ◆ Ideal for the patient who tends to over-do it
 - ◆ The weekend warrior
 - ◆ “This is the way I was trained”
- ◆ The Professional Athlete example.
 - ◆ How do they perform at their best?



CVT Pain Management



Case Vignette



Case Example

Consult: Mr. Smith

- ◆ 34 year old MWM, height 5'8; weight 270 lbs
- ◆ 50% service connected for chronic low back pain
- ◆ Pain score 7/10, BDI = 27, re-injured back 10 months ago on construction site
- ◆ Tends to over do it
- ◆ Spouse is highly involved in his care – does many things for him (always makes him lunch, neck rubs)
- ◆ Has not responded to efforts by the PCP to encourage increased activity

Primary complaints:

- ◆ Pt. reports feeling depressed, can't cope with pain, tends to ruminate about his pain, watches TV and plays "Call of Duty – Black Ops" all day

Assessment Questions to Consider...

- ◆ What questions would you want to ask this patient?



Questions

- ◆ Describe Pain
- ◆ Surgery pending?
- ◆ Current medications & where prescribed
- ◆ Is he taking her medications appropriately?
- ◆ Litigation pending?
- ◆ What are his goals?
- ◆ How is his mood? Psychological history?
- ◆ Trauma Exposure
- ◆ Substance abuse - now or in past?
- ◆ What kinds of coping skills does he have?
- ◆ How does his spouse react when he is in pain?
- ◆ What are his beliefs about his pain?
- ◆ Did he like her job?
- ◆ What are his hobbies?
- ◆ Observe pain behaviors

Treatment Interventions...

- ◆ What areas would you target for treatment?



CBT for Mr. Smith

- ◆ Cognitive restructuring to address depression and catastrophic thinking
 - ◆ I'm a carpenter – I can't work – what good am I?
 - ◆ Challenge beliefs that he is disabled
- ◆ Weekly behavioral goals to get him moving
- ◆ Weight Management
- ◆ Time-based Pacing
- ◆ Work with spouse to identify ways she can encourage activity but not reinforce pain behaviors
 - ◆ Let him fix lunch and do jobs around the house

Research



Department of Veterans Affairs

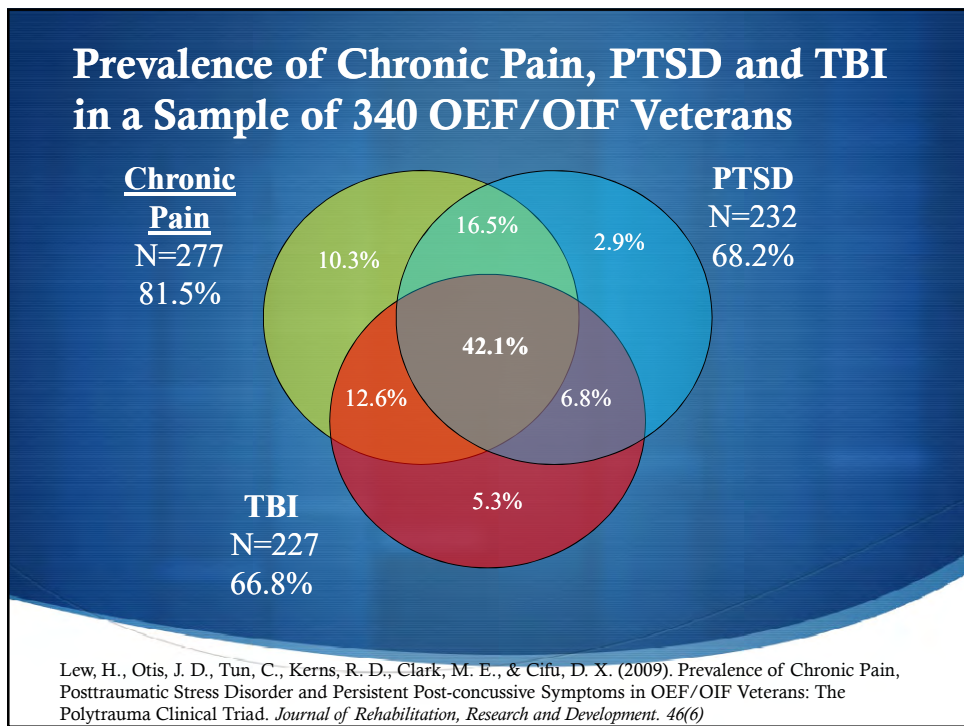
Jamaica Plain Campus



Chronic Pain, PTSD, and TBI in OEF/OIF Veterans

- ◆ Medical record review of 340 OEF/OIF Veterans referred to the VA Polytrauma Network Site (PNS) at VA Boston following a positive TBI screen.
- ◆ Data were based on the second level TBI clinical evaluation by the Physiatrist of the PNS.



Co-Morbidity: Pain and Trauma

- ◆ Pain can result from a number of sources including occupational injuries, motor vehicle accidents, or injury related to military combat.
- ◆ This has led to a growing interest in the interaction between pain and PTSD, as research and clinical practice indicate that they frequently co-occur and can interact in such a way to negatively impact the course of treatment for either disorder.

Pain and PTSD Co-morbidity

- ◆ PTSD Samples:
 - ◆ The prevalence of a chronic pain condition in individuals diagnosed with PTSD is 66% and 80% (Beckham et al., 1997; Jakupcak, Osborne, Michael, Cook, Albrizio, & McFall, 2006; Shipherd et al., 2007).
- ◆ Pain Samples:
 - ◆ The prevalence of PTSD in civilians with chronic pain is 34% to 50% (Geisser et al., 1996; Asmundson, et al., 1998)

Clinical Presentation

- ◆ “When ever I’m laying in bed at night and my shoulder starts hurting, I start having thoughts of when I was shot.”
- ◆ “When I think about the day our Humvee was hit I can feel the pain in my back flare up right where I was hurt.”
- ◆ “Pain is like a barnacle on my hull – it keeps reminding me of what I went through.”
- ◆ “I tried my PT exercises but the pain started increasing and I started thinking about what I saw and heard in Iraq so I just said the heck with it and called it quits for the day.”

Clinical Presentation

- ◆ For one veteran, pain was the “price” or a “penance” he paid for surviving while some friends did not.
- ◆ Another veteran reported he was experiencing pain for a reason, so that he would never “forget.”
- ◆ Other veterans reported using pain and PTSD symptoms as a distraction. For example, one veteran reported that he would intentionally bring on pain by physically over-exerting himself to take his mind away from his trauma.
- ◆ Another veteran reported that he would intentionally expose himself to trauma-related cues that would elicit anger in order to feel “alive” and forget his pain.

Pilot Study: Intensive Treatment of Pain and PTSD for OEF/OIF Veterans

John D. Otis, Ph.D. and Terence M. Keane Ph.D.
funded by VA RR&D

- ◆ Purpose: Develop and Pilot an Intensive (3-week 6-session) integrated Pain and PTSD treatment program specifically for OEF/OIF Veterans
- ◆ Advantages of this approach:
 - ◆ More time efficient = more acceptable to veterans
 - ◆ Less costly to administer
 - ◆ Quicker re-establishment of adaptive functioning (military or civilian)

Intensive Treatment for Pain and PTSD

- ◆ Participants:
 - ◆ 8 veterans with comorbid chronic pain and PTSD were recruited for participation in this pilot study.
- ◆ Assessment:
 - ◆ Participants were assessed by an independent evaluator at pre and post treatment. (e.g., Pain, PTSD, Distress).

Treatment Development

- ◆ Session content and sequence
 - ◆ Therapist feedback
 - ◆ Patient feedback
- ◆ Deciding on the number of sessions
- ◆ The timing of sessions
 - ◆ Building momentum
 - ◆ Behavioral goals
- ◆ Pilot testing

Intensive Treatment Outline

- ◆ Session 1 Making The Connection Between Pain and PTSD
- ◆ Session 2 Cognitive Restructuring
- ◆ Session 3 Focused Cognitive Restructuring
 - Anger Management
 - Power/Control
 - Trust/Safety
- ◆ Session 4 Sleep and Relaxation Training
- ◆ Session 5 Activity Pacing and Pleasant Activities
- ◆ Session 6 Social Support and Integrating Skills into Everyday Life

Results


Paired Comparison t-tests on Mean Pre to Post-treatment Outcome Measure Scores

Outcome Measure	Pre-treatment	Post-treatment	Sig (2 tailed)
Pain Numerical Rating Scale	30.57	25.85	.09
Beck Depression Inventory	23.14	16.28	.04
Clinician Administered Assessment of PTSD (CAPS)	72.13	59.13	.03
Anxiety Sensitivity Index	35.50	24.80	.18
Pain Catastrophizing Scale	30.14	18.86	.05


- ## Results: Qualitative data obtained from Perception of Treatment Questionnaire
- ◆ “This has been great, you have given me some tools that I can really use”
 - ◆ “I’m doing things I haven’t done in a long time, I needed this.”
 - ◆ “Dr. Otis and his staff have a great project going. It helped me to sort things out and manage my pain and PTSD.”
 - ◆ “It probably should be made required for ALL Vets returning from combat/overseas situations, as a ‘down-time’ adjusting period.”

Additional Information

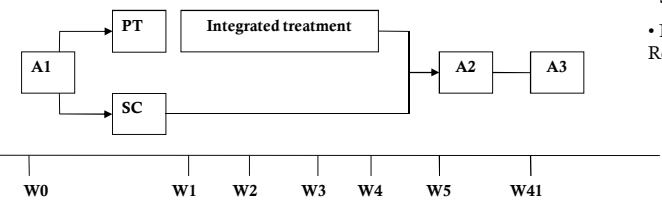
- ◆ Total Time to conduct pilot study = 3 months
- ◆ Treatment often took place after “normal” working hours
- ◆ There were no treatment dropouts
- ◆ If found to be effective, this treatment could be a “first step” to engaging OEF/OIF/OND veterans in programs to help them maintain the skills they have learned, or strengthen their skills to effectively cope with pain and PTSD.



Current Research



- ◆ A VA Merit Review Grant for the Intensive Treatment of Chronic Pain and PTSD for OEF/OIF Veterans was funded by VA Rehabilitation Research and Development.



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graph LR
    A1[A1] --> PT[PT]
    A1 --> SC[SC]
    PT --> IT[Integrated treatment]
    SC --> IT
    IT --> A2[A2]
    A2 --> A3[A3]
    
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- Study N = 102
- Multisite Recruitment

A1=pretreatment assessment; A2=post-treatment assessment; A3=6 month follow-up; W=study week; W1-W4=weekly assessments of mechanisms of action.

Thoughts and Questions



John D. Otis, Ph.D.

**Center for Anxiety and Related Disorders at
Boston University**

Phone: 617-353-9610

Email: johnotis@bu.edu

Website: painpsych.com

