Essentials of Cognitive Behavioral Therapy for Chronic Pain Management

John D. Otis, Ph.D.
Research & Spinal Cord Injury Service
VA Boston Healthcare System
Who is on the call today?

- Psychologists
- Nurses
- Social Workers
- Physicians
- Physical Therapists
- Students
- Other
Presentation Overview

A Historical look at Pain Management

The Problem of Chronic Pain

Cognitive Behavioral Therapy for Chronic Pain

Key Elements of Treatment and Examples

Research:

• An Integrated treatment for Pain and PTSD
Early humans related pain to evil, magic, and demons. Relief of pain was the responsibility of sorcerers, shamans, priests, and priestesses, who used herbs, rites, and ceremonies a
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 one grain (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?

• 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.
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).

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

Pain

Muscle atrophy & weakness
Weight loss/gain

Disability

Negative self-talk
Poor sleep
Missing work

Distress

Less active
Decreased motivation
Increased isolation
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
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

• 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., restructuring negative thoughts, activity pacing)
  – Practice and consolidation of coping skills and reinforcement of their appropriate use
# CBT for Chronic Pain

- **Session 1**: Rationale for Treatment
- **Session 2**: Theories of Pain, Breathing
- **Session 3**: Relaxation Training
- **Session 4**: Cognitive Errors
- **Session 5**: Cognitive Restructuring
- **Session 6**: Stress Management
- **Session 7**: Time-Based Activity Pacing
- **Session 8**: Pleasant Activity Scheduling
- **Session 9**: Anger Management
- **Session 10**: Sleep Hygiene
- **Session 11**: Relapse prevention

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)
Older Adults and Pain

13 Residents (Ages 65-92)
Pre to Post-treatment (p<.01)

Assessment

(Reid, Otis, Barry, & Kerns, 2002)
One of the biggest obstacles to getting patients engaged in treatment.
Critical Element of Treatment

Present a Convincing Treatment Rationale
Treatment only works if patients are engaged
• TIPS:
  1. Providers:
     • Use MI to help patient arrive at their own decision to try CBT
  2. Therapists:
     • Patients will drop out if they don’t think you have something to offer them
     • Read key articles and chapters related to pain management but deliver content in your own words
Critical Element of Treatment

• **Relaxation Training**
  – Learning to breathe correctly is one of the easiest methods of learning how to relax and help reduce pain.
  • Other techniques:
    – Progressive Muscle Relaxation, Visual Imagery
    – Tai Chi, Yoga, Meditation, etc.

  – The Advantage: It is a concrete skill
  – Early success with this skill sets the patient up for success on future goals.
Critical Element of Treatment

• **Cognitive Restructuring**
  
  – 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
    
    • Ask them to be a “detective”
Cognitive Restructuring

<table>
<thead>
<tr>
<th>Situation</th>
<th>Emotion</th>
<th>Automatic Thought</th>
<th>Evidence for</th>
<th>Evidence against</th>
<th>Positive Coping Thought</th>
<th>Emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe the event that led to the unpleasant emotion.</td>
<td>Specify sad, angry, etc., and rate the emotion from 0% to 100%.</td>
<td>Write the automatic thought that preceded the emotion.</td>
<td>What is the evidence that this thought is true?</td>
<td>What is the evidence that this thought is false?</td>
<td>What else can I say to myself instead of the automatic thought?</td>
<td>Re-rate the emotion from 0% to 100%.</td>
</tr>
<tr>
<td>A pain flare-up on a busy day.</td>
<td>Depressed 60% Frustrated 50%</td>
<td>I can’t cope with my pain; my life is miserable.</td>
<td>There is too much going on today. I feel overwhelmed and I’m not getting my work done.</td>
<td>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).</td>
<td>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.</td>
<td>Depressed 25% Frustrated 30%</td>
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</table>

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.
Alternate Format Cognitive Restructuring

AUTOMATIC THOUGHTS

1. Identify a situation you found unpleasant.
2. Write down the emotion you were feeling.
3. Try to figure out the automatic thoughts that led to the emotion.
4. Write down alternative thoughts you could have about the situation, and challenge your automatic thoughts.

Situation | Emotion | Automatic Thought | Alternative Thoughts
--- | --- | --- | ---
I'm stuck in traffic | Anger, frustration | The city engineers are incompetent | It may be true that the city engineers are incompetent, but tomorrow I'll take another route. I'll catch up on my reading by listening to a book on tape. I'm really only delayed by 10 minutes, I'd waste that amount of time if I were at home.
Critical Element of Treatment

• **Time-based Activity 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?
## Critical Element of Treatment

- **Sleep Hygiene**

<table>
<thead>
<tr>
<th>Sleep Hygiene Category</th>
<th>Good sleeping habits</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Day 6</th>
<th>Day 7</th>
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<tbody>
<tr>
<td>Timing</td>
<td>Set a constant bed time</td>
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<tr>
<td></td>
<td>Set a constant wake time</td>
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<td></td>
<td>No daytime naps</td>
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<tr>
<td>Sleep Behavior</td>
<td>When sleep does not occur in 15 minutes get up and get out of bed. Only use the bed for sleep</td>
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<td>Thermal</td>
<td>Take a warm bath</td>
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<td>Environment</td>
<td>Keep bedroom dark</td>
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<td></td>
<td>Keep temperature of room constant</td>
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<tr>
<td>Mental Control</td>
<td>Quiet the mind before bedtime with music, and calm reading. Avoid action TV, movies, and loud music</td>
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<td>Ingestion</td>
<td>Avoid alcohol, caffeine, and nicotine before bed</td>
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<td></td>
<td>Eat a light snack before bed</td>
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</table>

Total number of habits used per night:      __  __  __  __  __  __  __  __
Suggestions for Therapists

• Join forces with Primary Care
• Create a pain group
  • (e.g., therapist led – peer led – multidisciplinary)
• Set treatment goals:
  • Goals should be measurable/behavioral
  • Work towards goals each week
  • When available, incorporate rehab medicine goals
• Don’t focus on “pain”, ... get them moving.
• Monitor homework completion
• Tailor the treatment to your patient

Research
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.
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.
Prevalence of Chronic Pain, PTSD and TBI in a Sample of 340 OEF/OIF Veterans

Chronic Pain
N=277
81.5%

PTSD
N=232
68.2%

TBI
N=227
66.8%

10.3%
16.5%
2.9%

12.6%
42.1%
6.8%

5.3%

Pain and PTSD Co-morbidity

Alschuler & Otis (2012) – 194 veterans participating in a VA pain management program

- Analyses indicated that 47% of the sample endorsed symptoms consistent with PTSD.

- Veterans with pain and PTSD endorsed significantly higher levels of maladaptive coping strategies and beliefs about pain (i.e., greater catastrophizing and emotional impact on pain; less control over pain) when compared to veterans with chronic pain alone.

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 in order to take his mind away from his PTSD.

• 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.
# Treatment Components

### CBT for Pain
- Education re: pain
- Relaxation training
- Cognitive restructuring
- Stress management
- Activity pacing
- Pleasant activity scheduling
- Anger management
- Sleep hygiene
- Relapse prevention

### CBT for PTSD
- Education re: PTSD
- Cognitive restructuring
- Teach coping skills
- Social support
- Anger management & sleep
- Exposure therapy
- Reprocessing the meaning of the event
Conclusions

• High rates of comorbidity between pain and PTSD
• Pain and PTSD seem to interact with one another
• Cognitive-behavioral treatments for both have similar components

• **Question:** Is there a more efficient and effective way of providing treatment?
Efficacy of An Integrated CBT Approach to Treating Chronic Pain and PTSD

John D. Otis, Ph.D. and Terence M. Keane Ph.D.
A VA Merit Review funded by the VA Rehabilitation, Research & Development Service

• Purpose: Evaluate the efficacy of an integrated CBT approach to the treatment of co-morbid Chronic Pain and PTSD

• A 12-session integrated treatment that contains elements of evidence-based treatments for chronic pain and PTSD.
Treatment Development

• **GOALS:**
  
  – Create a treatment that amounted to more than the sum of its parts.
  
  – Create a treatment that was effective and transportable so that it would be considered clinically practical to use by therapists.
  
  – It had to be easy to understand for therapist and patient and not too time intensive.
Study Observations

• Study drop out rate was above 20%
• Challenge to engage patients in treatment
• Problems gaining therapeutic momentum
• Veterans did not want to be in the VA for 12 weeks or longer - they want to get on with their lives.
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

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

<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>Pre-treatment</th>
<th>Post-treatment</th>
<th>Sig (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain Numerical Rating Scale</td>
<td>30.57</td>
<td>25.85</td>
<td>.09</td>
</tr>
<tr>
<td>Beck Depression Inventory</td>
<td>23.14</td>
<td>16.28</td>
<td>.06</td>
</tr>
<tr>
<td>Clinician Administered Assessment of PTSD (CAPS)</td>
<td>72.13</td>
<td>59.13</td>
<td>.03</td>
</tr>
<tr>
<td>Anxiety Sensitivity Index</td>
<td>35.50</td>
<td>24.80</td>
<td>.18</td>
</tr>
<tr>
<td>Pain Catastrophizing Scale</td>
<td>30.14</td>
<td>18.86</td>
<td>.05</td>
</tr>
</tbody>
</table>
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.”
• 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.

- 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.
Take Home Points

• Integrative treatment approaches that address multiple problems simultaneously show promise

• There is a need to develop innovative methods for disseminating these treatments to the people who need them most

• Mobile applications delivering evidence-based treatments may be an alternative for some individuals.
Things to Keep in Mind

• Substance use/abuse:
  – Drug and alcohol use may be common among their peers
  – Pain medications and other substances may be used as a way to avoid and detach from the world

• Look for Red Flags:
  – Relationship problems (parents/spouse/authority)
  – Difficulty concentrating
  – Anger/Irritability – may be directed at you

• Social Support:
  – Support from others is a protective factor. Involve the spouse and family
Things to Keep in Mind

• They all have chronic pain, they have all seen specialists, and they are probably not happy with the results.

• Acknowledge frustrations with the system (military and VA) and problems with previous pain treatments.

• Make a commitment to work with them on finding a solution to their problems (Pain, PTSD, or other issues).

• Integrating mental and physical healthcare is going to be essential.
QUESTIONS & DISCUSSION