Managing Chronic Pain and Co-Occurring Posttraumatic Stress Disorder (PTSD)

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Disclosure

- I have no financial relationships with any commercial interests related to the content of this presentation

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
  - VETCHANGE: A web-based treatment for substance use 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 as their treatments.

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.

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.
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 person's life.

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 person's 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

<table>
<thead>
<tr>
<th>Pain</th>
<th>Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative self-talk</td>
<td>Less active</td>
</tr>
<tr>
<td>Poor sleep</td>
<td>Decreased motivation</td>
</tr>
<tr>
<td>Missing work</td>
<td>Increased isolation</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Muscle atrophy &amp;</td>
<td>Weight loss/gain</td>
</tr>
<tr>
<td>weakness</td>
<td></td>
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</tbody>
</table>

The Challenge of Pain

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

<table>
<thead>
<tr>
<th>Thoughts</th>
<th>Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>My body has failed me</td>
<td>Staying in bed all day</td>
</tr>
<tr>
<td>This is never going to end</td>
<td>Sleeping all day</td>
</tr>
<tr>
<td>I'm worthless</td>
<td>Staying away from friends</td>
</tr>
<tr>
<td>I'm disabled</td>
<td>Decreasing activities that</td>
</tr>
<tr>
<td>My military career is ruined</td>
<td>have the potential to increase pain</td>
</tr>
<tr>
<td>I'm a bad parent, spouse, and provider</td>
<td>Taking more medication than prescribed</td>
</tr>
</tbody>
</table>

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)
**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.

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**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.

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Children and Pain
Techniques:
• Distraction techniques (such as counting) during painful medical procedures, or thinking about a favorite holiday.
• Children have found it helpful to “throw away” negative thoughts about their ability to cope and instead utilizing positive coping thoughts such as “I can cope with anything that comes my way; I am very strong and brave.”
• Relaxation techniques helpful for coping with painful procedures.

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)
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
  - Patients will drop out of treatment if they don't think you have something to offer them
  - **TIPS:**
    1. Read key articles and chapters related to pain management
    2. Review the treatment materials before each session
    3. Practice your delivery; say it in your own words
    4. Help the patient to arrive at the decision to try CBT

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

  • Cognitive Restructuring teaches patients to recognize cognitive errors and maladaptive thoughts, challenge those thoughts, and substitute more adaptive ones.

  • Goal: Create a more balanced way of thinking in order to reduce negative emotions that can contribute to the experience of pain.

Cognitive Restructuring Example

<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>A pain flare-up at a long day</td>
<td>Depressed</td>
<td>I can’t keep up with my work, my life is miserable.</td>
<td>There is too much going on, I feel overwhelmed and I’m not getting my work done</td>
<td>I have had long days before when I’ve been in pain and I was able to finish my projects and all my activities. I feel I’m still productive. My life isn’t all bad (I have a great family).</td>
<td>Not every day is bad, there are good days. When I’m through with this task, I can do it again.</td>
<td>Depressed</td>
</tr>
</tbody>
</table>

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?
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

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

Prevalence of Chronic Pain, Posttraumatic Stress Disorder and Persistent Post-concussive Symptoms in OEF/OIF Veterans: The Polytrauma Clinical Triad. Journal of Rehabilitation, Research and Development. 46(6)
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).

Alschuler & Otis (2012) – 394 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

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

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.

Treatment Development

- Step 1
  - Meetings with collaborators to discuss "essential elements" of treatment
    - Relaxation Training
    - Interoceptive exposure to address anxiety sensitivity
    - Behavioral goals to address behavioral avoidance
    - Cognitive elements from Cognitive Processing Therapy (CPT) to address the impact of the trauma on patient beliefs
    - The sequencing of treatment elements
Integrated Treatment

- **Session 1**  
  Education on Chronic Pain and PTSD
- **Session 2**  
  Making Meaning of Pain and PTSD
- **Session 3**  
  Thoughts/Feelings related to Pain and PTSD & Cognitive Errors
- **Session 4**  
  Cognitive Restructuring
- **Session 5**  
  Diaphragmatic Breathing and Progressive Muscle Relaxation
- **Session 6**  
  Avoidance and Interoceptive Exposure
- **Session 7**  
  Pacing and Pleasant Activities
- **Session 8**  
  Sleep Hygiene
- **Session 9**  
  Safety/Trust
- **Session 10**  
  Power/Control/Anger
- **Session 11**  
  Esteem/Intimacy
- **Session 12**  
  Relapse Prevention and Flare-up Planning

Research Design

- Participants: Veterans with a co-morbid diagnosis of chronic pain and PTSD
- Participants are randomly assigned to 1 of 4 treatment conditions
  1. CBT-Pain
  2. CPT for PTSD
  3. Integrated treatment
  4. Wait-List

Treatment Development

- **Step 2**
  - Pilot test Treatment and Address Challenges to Implementation
    - Participant Alcohol Use
    - Establishing Trust
    - Attendance
    - Addressing Avoidance
    - Homework Completion
Assessment Measures

- Pain
- PTSD
- Affective Distress
- Physical Functioning/Disability
- Catastrophizing
- Anxiety sensitivity

<table>
<thead>
<tr>
<th>12 sessions</th>
<th>Pre-treatment</th>
<th>Post-treatment</th>
<th>6-Month Follow-up</th>
</tr>
</thead>
</table>

Pilot Data

- Six participants were recruited to pilot the treatment:
  - Two of the six participants dropped out of treatment before the third session.
  - One participant dropped out due to family health problems.
  - A total of three participants completed the 12 session integrated treatment.


- Participant 1:
  - A 59 year old Caucasian male with pain and PTSD related to combat and injury in Vietnam.
  - Significantly depressed
  - Longstanding history of alcohol abuse, in remission.
  - Not socially active and avoided many situations

- Participant 2:
  - A 51 year old African American female with pain and PTSD due to MST
  - Musculoskeletal pain located in her back, neck and shoulders.
  - Significant anger

- Participant 3:
  - 58 year old Caucasian male with PTSD related to events witnessed while in Vietnam
  - Neck, shoulder and back pain
  - Marital difficulties, discomfort being around children, and difficulty trusting people in authority.
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).
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

<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.”

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.

A1=pretreatment assessment; A2=post-treatment assessment; A3=6 month follow-up; W=study week; W1-4=weekly assessments of mechanisms of action.
Web-Based Intervention for Returning Veterans with Problematic Alcohol Use & PTSD
Funded by NIAA & VA NCPTSD


Study Design

- 8 week, self-management web intervention
- 600 participants recruited through targeted Facebook advertisements
  - Immediate Intervention Group (IIG) (n=404)
  - Delayed Intervention Group (DIG) (n=196)
- Primary Outcomes:
  - Drinks per drinking day
  - Average weekly drinks
  - Percent heavy drinking days
  - PTS symptoms
The Facebook Campaign

- Facebook allowed VetChange to track if people came from a correct link and, combined with IP address, if they were likely to be legitimate participants.

Sample Facebook Ads

- Advertisement were seen by at least 317,000 users likely to be returning veterans, over 43 recruiting days.
- Recruitment cost was $30 per subject ($1.27 per click, $17,964 total)

Treatment Intervention

- Modules 1-4
  - Participants receive personalized feedback on drinking and PTSD symptoms, evaluate readiness to change, set drinking goals, develop change plan, review moderation/abstinence strategies
- Modules 5-7
  - Cognitive behavioral coping skills to manage mood, stress, anger and improve sleep.
- Module 6-8
  - Participant select topics most relevent to thie situation
  - Building a support system
**Advantages of WWW**

- Increased confidentiality.
- Easy to use within schedule.
- Low costs per capita involvement.
- Addresses public health nature of trauma.
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.

References


