Psychological Perspectives on CRPS for Patients and Caregivers

Leanne R. Cianfrini, PhD
“We can’t find anything wrong with you, so we’re going to treat you for Symptom Deficit Disorder.”

“Oh no! He thinks it’s all in my head! But, I’m not crazy.”
Ascending Transmission / Descending Modulation

Injury (e.g. capsaicin, injection, burn)

Flare

Area of secondary hyperalgesia

Primary hyperalgesia, allodynia, and/or light touch, pin, brush stroke

Periaqueductal gray

Dorsolateral pontine tegmentum (NE)

Rostroventral medulla (5-HT)

Aδ fiber

Aβ fiber

C fiber

Ascending Pathways

Descending Pathways

Somatosensory cortex

Intralaminar thalamic nucleus

Ventral posterolateral thalamic nucleus

Reticular formation

Neospinothalamic tract

Paleospinothalamic tract

Spinoreticular tract

Limbic forebrain system

Hypothetical descending cortical neurons

Figure adapted from: Alpay M. Pain patients. In: Stern TA, et al, eds. Massachusetts General Hospital Handbook of General Hospital Psychiatry; 2004:314.
PAG periaqueductal grey
S2 secondary somatosensory area
Bio-psycho-social

- Tissue or Nerve Trauma, Physical Dysfunction, Physiological Reactions
- Beliefs, Expectancies, Coping Methods, Emotions, Distress, Personality factors
- Culture, Social Interactions, Environment
Knowing the “Person Behind the Pain”

- **Hippocrates:** *It’s far more important to know what person has the disease than what disease the person has.*

- **Sir William Osler:** *Care more particularly for the individual patient than for the special features of the disease.*

- **Dr. Francis Peabody:** *The secret of the care of the patient is in caring for the patient.*
Depression and Grief

DENIAL IS THE FIRST STAGE OF....

NO, IT ISN'T.
Depression and Pain

- Rate of major depression increases in a linear fashion with greater pain severity.

- Pain and depression together are associated with greater disability than either disorder alone.
  - The combination of CRPS pain, depression, high pain intensity and functional impairment is associated with increased risk of suicide.

- Depression (and anxiety or anger expression) may have a greater impact on pain in patients with CRPS than in those without, possibly due to the effects of distress on sympathetic nervous system arousal.
Assessing Depression

- Sleep
- Interest
- Guilt
- Energy
- Concentration
- Appetite
- Psychomotor Changes
- Suicidal Thoughts
Sense of Loss – Do These Sound Familiar?

“I can’t do what I used to do.”

“I don’t feel like myself anymore.”

“I miss my old self.”

“What if this never gets better?”

“I wish I could have my old life back.”
## Pain-Related Losses

<table>
<thead>
<tr>
<th>Function</th>
<th>Finances</th>
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<tbody>
<tr>
<td>Comfort</td>
<td>Stability</td>
</tr>
<tr>
<td>Control</td>
<td>Ability to plan/commit</td>
</tr>
<tr>
<td>Productivity</td>
<td>Libido/Intimacy</td>
</tr>
<tr>
<td>Purpose/meaning</td>
<td>Social Support</td>
</tr>
<tr>
<td>Routine</td>
<td>Positive/Pleasant experiences</td>
</tr>
<tr>
<td>Vitality/Energy</td>
<td>Faith (spiritual; safety of world)</td>
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Change/Loss $\rightarrow$ Grief Response

How we want grief to work

How grief actually works
Anxiety
Anxiety: Primary or Secondary?

- **Normal** anxiety after pain
  - All pain patients have stressors, some more than others
  - Coping skills, genetics will determine our level of stress and stress-reactivity
  - There are some special pain-related anxiety conditions (e.g., “kinesiophobia”)
  - Don’t pathologize unless patient truly meets criteria
Anxiety: Primary or Secondary?

- **Abnormal** anxiety before pain = anxiety disorder
- **Abnormal** anxiety after pain = still an anxiety disorder
  - Panic Disorder
  - Generalized Anxiety Disorder
  - Specific phobias
  - Obsessive-compulsive disorder [OCD]
  - PTSD
Learned Disuse: Persistence vs. Avoidance

- Anticipatory anxiety about pain exacerbations
- Continued avoidance through immobilization of CRPS-affected limb:
  - Can increase expression of neuro-inflammatory mediators
  - Strengthens the fear (e.g., “memory nets” in adult rats)
- Treatment should be “functionally focused”
  - PT/OT
  - Exposure and relaxation to calm anxiety

“You always miss 100% of the shots you don’t take”

-Wayne Gretzky
Evaluating Anxiety

- Try to pinpoint what’s making you anxious:
  - Patients: Setting goals? Moving the limb? Family stress? Communicating with health care providers?
  - Caregivers: Finances? How to help your loved one? What if I say the “wrong thing?”

- Are you worrying with thoughts? Images?

- Can you notice early physical symptoms?
  - Tension
  - Pain increase
  - Stomach- or Headaches
For Clinicians: In-office Mood Questionnaires

**Depression**
- BDI-II (Beck Depression Inventory)
- CES-D (Center for Epidemiological Studies – Depression)
- PHQ – 9 or 2
  - Depressed, sad, hopeless
  - Loss of pleasure
- CSQ or PCS (for “Catastrophizing”)

**Anxiety**
- STAI (State-Trait Anxiety Inventory)
- GAD-7 (Generalized Anxiety Disorder)
- PASS (Pain Anxiety Symptoms Scale)
- TKS (Tampa Kinesiophobia Scale)
Anger
Anger

- Anger associated with pain-related disability, increase in pain intensity, poor sleep, interpersonal consequences
- It’s not just about the anger, but rather the regulation/expression of the emotion:
  - Suppressive style (“Anger-In”) vs. Expressive (“Anger-Out”)
- Proposed mechanisms (excellent reviews by Breuhl et al., 2006 and Trost et al., 2012):
  - Goal frustration
  - Perceived injustice
  - Symptom specific muscle reactivity
  - Deficiency in endogenous opioid blockade mechanisms
Catastrophizing
“This pain is killing me!”

“I can’t think about anything other than the pain.”

“There’s nothing I can do to stop this.”

Pain Catastrophizing:
Magnification, Rumination, Helplessness
Catastrophizing

- Strong relationships between catastrophizing and:
  - **Functioning**: Pain intensity, disability and distress; Quality of life
  - **Mood**: Depression
  - **Behaviors**: Overt behaviors and spousal responses
  - **Brain processing**: amplified activity in insula and ACC, reduced activation in pain-inhibitory systems
  - **Inflammatory responses**: c-reactive protein, interleukin-6

- Treatment: “De-catastrophize”
Cognitive Therapy
Just what is CBT?

Thought/Cognition

Situation/Event (e.g., pain)

Mood

Behavior
Components of Cognitive-Behavioral Therapy (CBT) for Pain Management

- Education/Motivational Enhancement
- Goal Setting (Realistic Expectations)
- Relaxation/Imagery
- Hypnosis/Distraction
- Biofeedback
- Correcting Cognitive Errors
- Graded Activity Exposure (Behavioral Activation)
- Activity-Rest Cycling (Pacing)
- Time-Contingent Medication Use
- Relapse Prevention
- Couples/Family Communication Therapy
- ACT (acceptance)
- Treat Co-morbid Conditions (sleep, weight, smoking)
### Examples of “Distorted” Negative Thinking

<table>
<thead>
<tr>
<th>Distortion Label</th>
<th>Pain-Related Example</th>
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<tr>
<td>All-or-Nothing, Polarized Thinking</td>
<td>“If I can’t dig in my garden like I used to, I won’t get outside at all.”</td>
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<td>Mind-Reading</td>
<td>“Everyone thinks I’m lazy because I’m using a scooter at the grocery store.”</td>
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<td>Destructive Labeling</td>
<td>“I’m disabled.” “I’m a loser.”</td>
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<td>Confusing Inability with Unwillingness</td>
<td>“I can’t go to church because of my back.” vs. “I’m reluctant to sit through service because I think my back pain will increase.”</td>
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<td>Imperative Thinking (Shoulds and Musts)</td>
<td>“I should be able to walk through a store like I used to.”</td>
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<td>Emotional Reasoning</td>
<td>“My body feels useless, therefore I am useless.”</td>
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<tr>
<td>Minimization/Discounting the Positive</td>
<td>“He probably only held the door open for me because I look so pitiful.”</td>
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| Overgeneralizing                         | “I had to leave the baseball game early today because of the pain….I’ll never be able to enjoy anything ever again!”}
Cognitive “Restructuring”

- Is there any other way I could look at this?
- What are the advantages and disadvantages of thinking this way?
- Is my logic correct? Would it hold up in a “court of law”? 
- What would I tell a friend in this situation?
- What would a respected role model do in this situation?
Other Cognitive Techniques

- Examining core beliefs (when ready)
  - Helplessness, unlovability, pain as a punishment

- Word substitution:
  - Replace shoulds with “I’d like to” –
    - Don’t “should on yourself!”
  - Replace “I can’t” with “I could if…”

- “Silver Lining of Pain” – What have you gained?
  - Empathy, learned who friends are, patience, insight into personal strength, stronger faith
“You’ll just have to learn to live with it.”

- Patients interpret this statement initially in a negative way
  - “Just give up.”
  - “Your situation is hopeless.”
  - “Quit being a baby.”
  - “This is as good as it gets.”
  - “You’re not doing a good job.”

(Easier said than done!)
Chronic Pain Acceptance

Pain acceptance is related to:

- Less attention to pain, more engagement with daily activities, higher motivation and better efficacy to perform daily activities
- Less medication consumption, better work status
- Higher levels of positive affect
- General QOL, independence
Pain = Suffering Intensity
Working Toward Acceptance

Mind Full, or Mindful?
Patients with CRPS/RSD are not psychologically different from other patients with chronic pain.

Psychological factors alone do not cause the physical symptoms.

Comorbid psychiatric disorders are common, however: 24-49% of patients in various studies.

Mood may be “predispositional,” but can also be a reaction to onset of CRPS…AND part of the pain experience itself!

Multidisciplinary treatments are recommended.
Wait...How Does This Stuff Work?
Mechanisms of Action for Mind-Body Interventions

- Changing overt behavior & covert cognitive behavior
- “Belief becomes biology” (Cousins, 1998)
  - Releasing endogenous opioids
  - Rebalancing neurotransmitters (e.g. 5-HT, NE, CCK)
  - Physiological control (e.g. autonomic, descending modulation, musculoskeletal)
  - Neurohormonal changes (endocrine, immune system)
  - Cortical functioning
Create a Pain Self-Management Toolkit

- Gentle Exercise Video
- Humor Boosters
- RSDSA Support Info
- Topicals
- Distraction Tools
  - Devices:
    - TENS
    - Heating Pad?
  - Cues to be mindful
Helpful Resources for Further Psychological Support: Patients

- Managing Pain Before It Manages You
  - Margaret A. Caudill, MD, PhD, MPH

- The Relaxation & Stress Reduction Workbook
  - Seventh Edition
  - Mantha Davis, PhD | Elizabeth Robbins Echelman, MSW | Matthew McKay, PhD

- Mind Over Mood
  - Second Edition
  - Dennis Greenberger, PhD | Christine A. Padesky, PhD

Free audio downloads of guided relaxation exercises.
A Clinically Tested, Effective Program to Take Back Your Life from Pain.

More than one million copies sold!

Over 1,000,000 copies sold in 23 languages.
Helpful Resources for Further Psychological Support: Patients (cont.)

- The Mindfulness Solution: Everyday Practices for Everyday Problems by Ronald D. Siegel, PsyD
- Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness by Jon Kabat-Zinn, Ph.D.
Helpful Resources for Further Psychological Support: Clinicians

1. Cognitive Therapy for Chronic Pain
   - Second Edition
   - Beverly E. Thorn

2. Mindfulness-Based Cognitive Therapy for Chronic Pain
   - A Clinical Manual and Guide
   - Melissa A. Day

3. Motivational Interviewing in Health Care
   - Helping Patients Change Behavior
   - Stephen Rollnick, William R. Miller, Christopher C. Butler
Helpful Resources for Further Psychological Support: Caregivers

Helpful Resources for Further Psychological Support: All

KARDIA breathing pacer

HeartMath.org

Biofeedback:
- EmWave 2 Personal Stress Reliever
- Inner Balance

Palouse Mindfulness
Mindfulness-Based Stress Reduction

https://palousemindfulness.com/
THANK YOU!

Any Questions?

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