Multi-Dimensional Care of Chronic Pain
Reducing Reliance on Opioids for Relief
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Disclosure
Past Year Income Sources

No commercial relationships

Employment
• Dartmouth College & Geisel School of Medicine
• Silver Hill Hospital

Expenses/stipends/expenses
• American Academy Addiction Psychiatry
• International Association for the Study of Pain
• Boston University (REMS project)
• American Medical Association
• ACTTION (Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, & Networks – FDA/private consortium partnership)
• Historical trends in pain & substance treatment
• Chronic pain & substance disorders as chronic illnesses
• Biopsychosocial care model for chronic pain treatment

Pain Treatment Trends

Late 1800s-early 1900s
• Post Civil War – opioids, willowbark, cannabis, cocaine
• Early 1900’s widespread prescribing & street opioid use
• Opioid maintenance of addiction common
• 1914 Harrison Act tracks & taxes opioids
• 1919 & 1920 Supreme Court – opioids cannot be used to treat addiction
• Prescribing for pain legal, but use declined
1950s
- Opioid use discouraged
  - Cancer feared, elective surgeries deferred, chronic pain tolerated

1960s
- Methadone treatment introduced, AMSA, Haight Ashbury Free Clinic
  - St Christopher’s Hospice 1967

1970s
- IASP 1973, APS 1977, Pain Medicine
  - Aggressive tx cancer pain & acute pain
  - Interdisciplinary care of chronic pain (Bonica, Fordyce, others)

1980s
- Observation: cancer pts not inevitably addicted or tolerant
  - Positive trials opioids for non-cancer pain reported
  - Interdisciplinary care of chronic pain available

1990s
  - JCAHO, VA-5th vital sign, other pain quality initiatives
  - Opioid therapy of all pain increases
  - Pain technologies evolve: pumps, stimulators, radiologically guided injections
  - Era of possibilities: pain can be vanquished
  - Medicine as business: interdisciplinary pain care wanes

2000s
- Burgeoning concerns re: opioid misuse, abuse, addiction
  - Research on misuse, risks, strategies for prevention
  - Clinical & industry focus on risk reduction strategies
  - Proliferation of opioid guidelines
  - Efficacy, cost, duration of interventionalist tx debated
Pain Treatment Trends

2010’s
- Renewed interest in interdisciplinary pain care
- Healthcare reform aims at EVB, cost effective care
- Care of chronic illness a priority

Historical trends in pain & substance treatment
Chronic pain & substance disorders as chronic illnesses
Biopsychosocial care model for chronic pain treatment

Pain
Nociceptive & Neuropathic

Afferent nociceptive pathway
Afferent nonnociceptive sensory pathway
"A builder aged 29 came to the accident and emergency department having jumped down on to a 15 cm nail. As the smallest movement of the nail was painful he was sedated with fentanyl and midazolam. The nail was then pulled out from below."

"When his boot was removed a miraculous cure appeared to have taken place. Despite entering proximal to the steel toecap the nail had penetrated between the toes: the foot was entirely uninjured."


--

% of pain-free adults with lumbar disc bulge or protrusion on MRI

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Physiologic Stimulus

Nociceptive  →  Neuropathic

Biopsychosocial Context of the Individual

Experience of Pain

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Biogenetics
Sleep
Culture
Social Context
Incentives
Acceptance
Conditioning
Mood
Meaning
Self-Efficacy
Coping
Personality
Drivers of Substance Misuse

- Misunderstanding (public, patient, provider)
- Self medication of symptoms
  - Pain
  - Mood, memories
  - Sleep
- Avoid withdrawal
- Elective use for euphoria/reward
- Compulsive use due to addiction
- Diversion for profit
Chronic Illness Paradigm

- Chronic pain
  - Implicit in work of early pain pioneers including Fordyce, Bonica, others and in interdisciplinary approach to care
  - 2011 Institute of Medicine report: "Chronic pain can be a disease in itself...changes in the nervous system that can worsen...psychologic and cognitive correlates"

- Addiction
  - "Brain disease" Alan Lechnier, then NIDA chief
  - Chronic medical illness similar to diabetes, hypertension and asthma

Chronic Care Model

Patient-provider shared plan of care

Goal setting

Self Management in Chronic Illness

Skill & knowledge acquisition

Skills applied towards goal

Revise plan advance goals

Goal achieved

Meeting Topics Included:

- Brief Meditation Training for Migraineurs Affects Emotional & Physiological Stress Reactivity
  Amy Wachholtz, PhD, U Mass Medical School

- Internet-Based Pain Coping Skills Intervention for Osteoarthritis
  Christine Miaskowski, MSN, PhD, FAAN; UCSF

- Neurobiological Mechanisms Underlying Effectiveness of CBT in IBS Patients
  Emeran Mayer, MD; UCLA

- Pain Control Program Intervention for Cancer Pain Patients & Caregivers
  Christine Swanson, RN, PhD; U Vermont

- Can CBT & Relapse Prevention for Pain Alter CNS Function and Structure?
  Magdalena Naylor, MD, PhD; U Vermont

- Historical trends in pain & substance treatment
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Adapted from McCorkle et al at UW Self-Management: Enabling and empowering patients living with cancer as a chronic illness Cancer Clinical Journal, 2011
Chronic Pain Treatment

Psycho-Behavioral
- Cognitive behavioral
- Meditation
- Tream mood/trauma issues
- Address substances

Medication
- NSAIDs
- Anticonvulsants
- Antidepressants
- Topical agents
- Opioids
- Others

Procedural
- Nerve blocks
- Steroid injections
- TPIs
- Stimulators
- Pumps

Physical
- Exercise
- Modalities
- Orthotics

Self Care
Improve quality of life

Cultivate well-being
Reduce pain
Restore function

Treatment Options

Shared and Unique
- Pain medications
- Interventional treatments
- PT/manual treatments
- TENs, thermal, etc

Addiction
- Addiction medications
- Stimulation/acupuncture

- CBT
- Meditation
- Self help groups
- Exercise

Cognitive Behavioral Therapy

Objectives
- Move from overwhelmed to manageable
- Move from passive to active role in care
- Reduce symptoms
- Increase function and quality of life
**Cognitive Behavioral Therapy**

*Basic Strategies*

- Break challenges into small pieces, set achievable goals, and strategize solutions
- Transform negative thoughts to positive self statements
- Engagement to distract from pain
- Practice deep relaxation
- Practice situational coping strategies to prevent and reduce pain

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**Cognitive Behavioral Therapy**

Thoughts

- If I move, I’ll hurt more
- I can’t work or support my family
- No one cares. No one can fix me.

Pain

Avoid moving, deconditioned
Withdrawn & disengaged
Muscle tension, irritable

Feelings

Anxiety

Demoralization & depression
Anger & fear

Behaviors

Engagement

Distraction

Burn patients

- Virtual reality immersion state
- 35-50% reduction in pain during debridement
- Less opioid required

**Focus on Pain**

- Trunk
- Thalamus

**Engaged (Distracted)**

Hoffman et al, 2008
Meditation/Relaxation

Brain Mechanisms Supporting Modulation of Pain by
Mindfulness Meditation


F. Zeidan1, K.T. Vartanian1, R.A. Hallet2, N.G. Gordon1, J.B. Walton1, and R.C. Ongish1

1 Department of Neurology and Anesthesiology, Wake Forest University School of Medicine, Winston-Salem, NC

Varied techniques
– Progressive muscle relaxation
– Autogenic training
– Hypnosis
– Guided imagery
– Meditation
  • Mindfulness
  • Mantra/focus-based

Meditation

Potential Mechanisms of Action in Pain

• Proposed mechanisms: changes in pain generation, modulation, attention and pain-related distress
  Updated from David Orme-Johnson, Neuro Report, 2006

• Documented changes in pain modulators
  – Reduced anxiety: Dillbeck, Am Psych 1987; Goldin et al, Front Human Neurosci 2012
  – Reduced muscular tension: Morse et al, Psychosomatic Med 1977
  – Altered central processing: Zeidan F et al, J Neuroscience, 2011

Meditation for Pain

15 subjects underwent four 20 minutes of mindfulness meditation training sessions on sequential days. Induced thermal Pain.

• 40% decrease pain
• 57% decrease pain unpleasantness

Zeidan F et al, J Neuroscience, 2011

Brain Mechanisms of Pain Modulation by Mindfulness Meditation
Meditation for Pain

Meditation for Addiction

CBT for Pain

Zinbun F et al. / Neuroscience, 2011
Brain Mechanisms of Pain Modulation by Mindfulness Meditation

Significant activation of contralateral somatosensory cortex during noxious heat stimulation when subjects not meditating. Significantly reduced with meditation.

Several small studies suggest reduced craving & reduced alcohol and drug use with mindfulness training (small studies, trends & limited statistical significance)

- Wittekindt & Bowen, J Consult Clin Psych, 2010
- Skanavi et al, Encephale, 2011 (Review)
- Zageriska et al, Subst Abuse, 2009 (Review)

Proposed mechanisms of action: attenuating the relationship between cues or negative cognitions and:

- Negative emotional states
- Drug craving
- Impulsive behaviors

93 FM patients
14 weeks standard care vs. group CBT vs group CBT + hypnosis

Courtesy Rob Edwards PhD
CBT for Addiction

Key Elements

- Minimizing cues and triggers
  - Identify cognitions, feelings, contacts
  - Reprogram people places and things to avoid
- Build skills to cope with cues and cravings
- Contingency management (reinforcing sobriety)
- Emotional regulation
  - Cognitive shifts
  - Relaxation/meditation
- Pleasurable sober activities

CBT in Practice

- Time limited (8-10 session often with refreshers)
- Group-based or individual
- Evolving online self-guided programs
- Basics can be implemented by diverse professionals
- Find therapists
  - American Pain Society
  - Society for Behavioral Medicine
  - National Association of Cognitive & Behavioral Therapists
  - Association for Behavioral and Cognitive Therapy
- Books for patients & non-psychology professionals
  - Managing your Pain before it Manages You – Margaret Caudill MD
  - Mastering Chronic Pain/Learning to Master Your Chronic Pain – Robert Jamison PhD

Group Support

*Oriented to Positive Self-Management*

- Chronic pain support groups through ACPA
  - Positive messaging & great resources “Half the battle is won when you begin to help yourself”
  - Strong leadership and advisory board Chronic Pain Anonymous
  - Spiritually-based, based on AA, NA
  - In person, web-based and phone-based
  
  www.chronicpainanonymous.org

- AA and NA
  - For patients with SUDs
  

- Disease specific support groups
  - Variable in format and quality
Exercise

Pain

- Pain reduction mechanisms
  - Improves circulation and healing
  - Restores movement through stretch
  - Reduces spasm through toning
  - Mobilizes joints reducing mechanical stress
  - Possible impact pain modulation thru endorphin system
  
  Golightly et al, 2012; Sullivan AB et al, 2012; Busch AL, 2012

- Possible “dysfunctional endogenous analgesia” in some pain syndromes (including FM)
  - Exercise without increasing pain Nijs J, Pain Physician, 2012

- Go slow & easy, breath & relax, tiny steps over time

Exercise

Addiction

- Actions in addiction treatment & recovery (likely in pain)
  - Induction of positive mood states through changes in endogenous opioid and dopamine activity.
  - Reduces depression
  - Alleviates sleep disturbances
  - Improves cognitive function
  - Improved self-efficacy
  - Decreases stress reactivity
  
  Brown et al, 2009; Brown RA et al, 2010; Smith MA et al.

- But: association noted between vigorous exercise and likelihood of mental illness ( esp alcohol or bipolar)

  Dakwar et al, 2012 J Clin Psychiatry

Multidimensional Care

Clinical Outcomes

- 101 WC pts entered program, 66 completed.
- 4 week 8 hours a day
  - Counseling – individual and group
  - Physical therapy & exercise (pool and land)
  - Education
  - Medication management

- Measured pain, anxiety, depression, work status

  Gagnon, Stanos et al, Pain Practice, 2012
Multidimensional Care

Clinical Outcomes

Cost Outcomes

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Costs (millions)</th>
<th>Annual Cohort of 17,600</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Initial</td>
<td>Subsqnt</td>
</tr>
<tr>
<td>Interdisciplinary</td>
<td>$142.6</td>
<td>$25.3</td>
</tr>
<tr>
<td>Surgical</td>
<td>$158.4</td>
<td>$88.7</td>
</tr>
<tr>
<td>Conventional</td>
<td>$457.6</td>
<td>$44.3</td>
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</tbody>
</table>

Medical treatment excludes surgical procedures
N/A indicates data not available for estimates.
Modified from Lawrence Erlbaum Associates with permission.

Chronic Pain
Self Management/Recovery Checklist

- CBT pain and addiction recovery group (8-10 sessions, refreshers)
- Meditation daily (1-2x for 10-20 minutes)
- Exercise that does not increase focal pain
  - Gentle aerobic (3-5 days a week for 30-45 min)
  - Stretch before and after
  - Toning with weights/resistance as tolerated
- Support group or 12 pain group: in person, online or phone-in
- Pain rescue plan (what to do for increased pain)

If substance concerns, consider adding:
- Assessment and treatment with individual addiction counselor
- 12 step or other self help groups. (AA, NA, rational recovery or other)
- Identify a sponsor (support person experienced in successful recovery)

Role of Clinicians
in Promotion of Self-Care

- Active listening
- Education
- Link patient with resources
- Set goals and problem solve
- Encourage engagement
- Cheering small and big successes

Simple Strategies
for Pain Recovery

- Find something to be grateful for every day
- Move your body (within your comfort zone)
- Pace your activities
- Practice deep relaxation
- Keep your attention engaged
- Substitute a positive thought for a negative one
- Do mini checks on your wellness thru the day
- Do something nice for yourself
- Help someone else
- Use your support group
Active self-care provides a foundation for
• Collaborative partnerships with providers
• Improved outcomes of other pain treatments, including opioid therapy

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