Minimizing Pills and Maximizing Skills: Achieving Successful Opioid Cessation in Chronic Pain

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Faculty

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  - Instructor
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  - Stanford University
Disclosures

- Jennifer Hah, nothing to disclose
- There will be no discussion of off-label drug or product use
Learning Objectives

- Explain the role of opioid medication in treating non-cancer pain
- Identify the adverse physiologic effects of opioids and the risks of opioid misuse, abuse, and addiction in patients receiving prescription opioids for chronic non-cancer pain
- Describe how psychological and behavioral interventions can be incorporated into treatment to help patients improve functional outcomes while concurrently minimizing reliance on opioids
Prescription Opioids

- The leading cause of overdose deaths in the U.S.
- Prescription opioid overdose death rates, sales, and substance abuse treatment admissions have climbed in parallel over the past decade.
- Cost of non-medical prescription opioid use in the U.S. is over $50 billion annually.

Prescription Opioids

- Tolerance/ Physical Dependence
- Immunosuppression
- Opioid-induced endocrinopathy
- Respiratory depression

**Prescription Opioids**

- Increased rates of substance abuse and depression exist in long-term prescription opioid users compared to non-users with chronic pain.
- Pain intensity does not predict treatment with opioids vs. non-opioid analgesics.
- Depression and anxiety contribute to substance use disorders amongst long-term opioid users.

**References**


Persistent Opioid Use

Nonmedical Use → Addiction
Are we Placing Patients at Risk?

- Real rates of addiction following legitimate prescription opioid exposure may be as high as 10%

- 31-84% of prescription opioid addicts seeking inpatient treatment reported that they had legitimately been given opioids for pain by a physician that they later went on to abuse
  - Passik SD, Hays L, Eisner N, Kirsh KL. Psychiatric and pain characteristics of prescription drug abusers
Persistent Opioid Use

- Low-pain surgeries exposing elderly adults to new prescription opioids increase the risk of long-term opioid use by 44% one year after surgery.
- Even opioids prescribed for outpatient, or short-stay surgeries increase the risk of persistent opioid use.
- Over 60% of people receiving 90 days of continuous opioid therapy remain on opioids years later.

45 Million Americans Undergo Surgery Each Year

Hall MJ, DeFrances CJ, Williams SN, Golosinskiy A, Schwartzman A. National Hospital Discharge Survey: 2007 summary
Natl Health Stat Report. 2010(29):1-20, 4
Standard of Care

Analgesic Management After Surgery

- The amount of prescribed opioids does not influence patients’ decisions to continue or discontinue opioid use
- Patients exhibit wide variability in opioid needs after similar procedures

107 Patients
Mixed surgical cohort
Time to Opioid/Pain Cessation
Pre-Operative Assessment
  — BPI, Opioid Use, SOAPP 24, Self-Perceived Susceptibility to Addiction
  — BDI-II, Primary Care PTSD Screen, Anxiety Sensitivity Index, Fear of Pain Questionnaire

A Pilot Cohort Study of the Determinants of Longitudinal Opioid Use After Surgery
Ian Carroll, MD, MS,* Peter Barelka, MD,† Charlie Kiat Meng Wang, BS,* Bing Mei Wang, BS,* Matthew John Gillespie, BS,* Rebecca McCue, BA,* Jarred W. Younger, PhD,* Jodie Trafton, PhD,¶ Keith Humphreys, PhD,¶ Stuart B. Goodman, MD, PhD, FRCS, FACS, FBSE,†† Fredrick Dirbas, MD,†† Richard I. Whyte, MD, MBA,§ Jessica S. Donington, MD,§ Walter B. Cannon, MD,§ and Sean Charles Mackey, MD, PhD*
Table 3. Multivariate Analysis of Preoperative Determinants of Prolonged Opioid Use After Surgery

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Hazard ratio</th>
<th>95% Confidence intervals</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legitimate preoperative opioid use</td>
<td>0.27</td>
<td>0.13–0.59</td>
<td>0.0009</td>
</tr>
<tr>
<td>Self-Perceived Risk of Addiction&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.47</td>
<td>0.29–0.77</td>
<td>0.003</td>
</tr>
<tr>
<td>Beck Depression</td>
<td>0.62</td>
<td>0.46–0.83</td>
<td>0.002</td>
</tr>
<tr>
<td>Inventory-II score&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery type (compared with knee replacement)</td>
<td></td>
<td></td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Mastectomy</td>
<td>11.29</td>
<td>4.87–26.17</td>
<td></td>
</tr>
<tr>
<td>Lumpectomy</td>
<td>5.17</td>
<td>2.11–12.68</td>
<td></td>
</tr>
<tr>
<td>Total hip replacement</td>
<td>2.33</td>
<td>1.09–5.00</td>
<td></td>
</tr>
<tr>
<td>Thoracotomy</td>
<td>1.56</td>
<td>0.77–3.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thoracotomy</td>
<td>Total Knee Replacement</td>
<td>Total Hip Replacement</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
<td>------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Patients (n)</td>
<td>27</td>
<td>19</td>
<td>25</td>
</tr>
<tr>
<td>Age (y)†</td>
<td>57 (49–65)</td>
<td>61 (58–67)</td>
<td>61 (57–67)</td>
</tr>
<tr>
<td>Male gender</td>
<td>37%</td>
<td>33%</td>
<td>54%</td>
</tr>
<tr>
<td>Legitimate preoperative opioid use</td>
<td>15%</td>
<td>32%</td>
<td>42%</td>
</tr>
<tr>
<td>Self-perceived risk of addiction*</td>
<td>1 (1–2)</td>
<td>1 (1–2)</td>
<td>1 (1–1)</td>
</tr>
<tr>
<td>Median days to opioid cessation*</td>
<td>34 (20–65)</td>
<td>59 (41–116)</td>
<td>38 (23–59)</td>
</tr>
<tr>
<td>Self-loathing symptoms†</td>
<td>0.15 (0–0.17)</td>
<td>0.37 (0–0.33)</td>
<td>0.13 (0–0.17)</td>
</tr>
<tr>
<td>Motivational symptoms†</td>
<td>0.77 (0.53–1.00)</td>
<td>0.96 (0.50–1.17)</td>
<td>0.96 (0.67–1.25)</td>
</tr>
<tr>
<td>Emotional symptoms†</td>
<td>0.45 (0.14–0.57)</td>
<td>0.49 (0.14–0.67)</td>
<td>0.43 (0.07–0.79)</td>
</tr>
<tr>
<td>Deck Depression Inventory-II Score†</td>
<td>9 (3–11)</td>
<td>12 (6–13)</td>
<td>10 (5–15)</td>
</tr>
<tr>
<td>Baseline pain at surgical site (0–10)‡</td>
<td>0.59 (1.50)</td>
<td>3.68 (2.67)</td>
<td>4.88 (2.52)</td>
</tr>
<tr>
<td>Baseline pain over the entire body (0–10)‡</td>
<td>1.37 (1.92)</td>
<td>3.74 (2.54)</td>
<td>4.56 (2.63)</td>
</tr>
<tr>
<td>Oral morphine equivalent use on postoperative day 1 (mg)‡§</td>
<td>11.3 (18.0)</td>
<td>57.4 (78.2)</td>
<td>38.1 (53.8)</td>
</tr>
<tr>
<td>Oral morphine equivalent use on postoperative day 3 (mg)‡§</td>
<td>36.2 (64.4)</td>
<td>89.7 (99.8)</td>
<td>101.5 (129.0)</td>
</tr>
</tbody>
</table>

* Median values presented with interquartile range in parentheses.
† Mean values presented with interquartile range in parentheses.
‡ Mean values presented with standard deviation in parentheses.
§ This total dose is a combination of all oral, transdermal, intravenous, and epidural opioids administered during the specified 24-hour period. This dose also includes opioids administered via intravenous or epidural patient controlled analgesia.
‡§ 87 patients were still taking opioids on postoperative day 3.
Table 3  Factor structure of BDI-II in preoperative patients

<table>
<thead>
<tr>
<th>Components of BDI-II Representing Each Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-loathing symptoms</strong></td>
</tr>
<tr>
<td>Past failure</td>
</tr>
<tr>
<td>Guilty feelings</td>
</tr>
<tr>
<td>Self-dislike</td>
</tr>
<tr>
<td>Self-criticalness</td>
</tr>
<tr>
<td>Suicidal thoughts</td>
</tr>
<tr>
<td>Worthlessness</td>
</tr>
<tr>
<td><strong>Motivational symptoms</strong></td>
</tr>
<tr>
<td>Tiredness or fatigue</td>
</tr>
<tr>
<td>Concentration difficulty</td>
</tr>
<tr>
<td>Changes in sleeping pattern</td>
</tr>
<tr>
<td>Loss of energy</td>
</tr>
<tr>
<td>Loss of interest</td>
</tr>
<tr>
<td>Loss of pleasure</td>
</tr>
<tr>
<td><strong>Emotional symptoms</strong></td>
</tr>
<tr>
<td>Sadness</td>
</tr>
<tr>
<td>Crying</td>
</tr>
<tr>
<td>Agitation</td>
</tr>
<tr>
<td>Indecisiveness</td>
</tr>
<tr>
<td>Irritability</td>
</tr>
<tr>
<td>Changes in appetite</td>
</tr>
<tr>
<td>Loss of interest in sex</td>
</tr>
</tbody>
</table>

**Cognitive** (pessimism, past failure, punishment feelings, self-criticalness, suicidal thoughts, worthlessness)

**Somatic**

**Affective**

### Table 4  Univariate analysis of variables influencing time to opioid cessation

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Hazard Ratio</th>
<th>Hazard Ratio 95%</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legitimate Preoperative Opioid Use*</td>
<td>0.25</td>
<td>0.13–0.49</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Motivational Symptoms*</td>
<td>0.59</td>
<td>0.45–0.77</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Self-Perceived Risk of Addiction*</td>
<td>0.60</td>
<td>0.38–0.93</td>
<td>0.0229</td>
</tr>
<tr>
<td>Emotional Symptoms*</td>
<td>0.67</td>
<td>0.51–0.89</td>
<td>0.0048</td>
</tr>
<tr>
<td>Self-Loathing Symptoms*</td>
<td>0.78</td>
<td>0.69–0.89</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

* Hazard ratios for the rate of opioid cessation reflect the 75th vs the 25th percentile of continuous variables.

† Hazard ratios for the rate of opioid cessation reflect the presence vs the absence of dichotomous variables.

### Table 5  Multivariate analysis of variables influencing time to opioid cessation

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Hazard Ratio</th>
<th>Hazard Ratio 95%</th>
<th>P value</th>
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</thead>
<tbody>
<tr>
<td>Self-Loathing Symptoms*</td>
<td>0.86</td>
<td>0.75–0.99</td>
<td>0.037</td>
</tr>
<tr>
<td>Motivational Symptoms*</td>
<td>0.89</td>
<td>0.59–1.37</td>
<td>0.60</td>
</tr>
<tr>
<td>Emotional Symptoms*</td>
<td>0.87</td>
<td>0.54–1.38</td>
<td>0.55</td>
</tr>
<tr>
<td>Legitimate Preoperative Opioid Use†</td>
<td>0.26</td>
<td>0.12–0.55</td>
<td>0.0004</td>
</tr>
<tr>
<td>Self-Perceived Risk of Addiction*</td>
<td>0.50</td>
<td>0.31–0.80</td>
<td>0.0036</td>
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<td>Surgery Type (compared with Knee Replacement)</td>
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<td>10.71</td>
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<td>5.34</td>
<td>2.14–13.36</td>
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<tr>
<td>Total Hip Replacement</td>
<td>2.11</td>
<td>0.97–4.60</td>
<td></td>
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<tr>
<td>Thoracotomy</td>
<td>1.45</td>
<td>0.71–2.98</td>
<td></td>
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</tbody>
</table>

* Hazard ratios for the rate of opioid cessation reflect the 75th vs the 25th percentile of continuous variables.

† Hazard ratios for the rate of opioid cessation reflect the presence vs the absence of dichotomous variables.
Figure 1. Pre-operative average self-loathing symptoms factor score greater than or equal to 0.01 predicts prolonged opioid use after surgery (Log rank P = 0.0001).
Preoperative Depressive Symptoms

Opioid-mediated Blunting of Negative Postoperative Emotional Responses

Reinforcement

Self-Medication Hypothesis
Is This Happening Elsewhere?

- 63% of patients abuse drugs for symptoms of depression, and opioid abusers with MDD use drugs in response to feeling depressed significantly more often than patients without MDD

- In patients with no substance abuse history receiving chronic opioid therapy, depression was associated with self-reported opioid misuse in a cross-sectional study

- Preexisting MDD and other psychiatric disorders are associated with subsequent nonmedical opioid use, and an increased likelihood of subsequent opioid dependence
Opioids for Chronic Non-Cancer Pain

- Prescribing has dramatically increased over the past decade
- Systematic reviews examining RCTs show moderately improved pain, function, and disability for opioids vs. placebo

Steinman MA, Komaiko KD, Fung KZ, Ritchie CS. Use of Opioids and Other Analgesics by Older Adults in the United States, 1999-2010. Pain medicine 2014
Opioids for Chronic Non-Cancer Pain

- Prescribed for back pain, OA, neuropathic pain, myofascial pain, osteoporotic vertebral fractures, trigeminal neuralgia
- Adverse effects: GI, headache, fatigue, urinary (hesitancy, retention)
- 0.14% to 0.27% rate of addiction

Opioid Tapering

- Opioid detoxification as outpatient vs. inpatient is comparable

- Successful opioid tapering in intensive outpatient and inpatient pain rehabilitation programs ($\downarrow$ pain, $\uparrow$ functioning, $\downarrow$ depression, $\downarrow$ catastrophizing)

- Patients with comorbid chronic pain and opioid misuse can undergo tapering without $\uparrow$ pain or $\downarrow$ QOL
Guidelines for Opioid Therapy

- Thorough patient evaluation (e.g. psychological and psychosocial factors to identify potential drug misuse and abuse)
- Adequate risks vs. benefits discussion (informed consent)
- Begin with a trial of opioid therapy
- Conservative, individualized opioid regimen
- Continued patient monitoring (loss of response, AEs, aberrant behaviors)

“6.2 Clinicians should evaluate patients engaging in aberrant drug-related behaviors for appropriateness of COT or need for restructuring of therapy, referral for assistance in management, or discontinuation of COT”

7.4 Clinicians should taper or wean patients off COT who engage in repeated aberrant drug-related behaviors or drug abuse/diversion, experience no progress toward meeting therapeutic goals, or experience intolerable adverse effects.”

American Pain Society- American Academy of Pain Medicine

- Opioid taper can occur in outpatient setting without severe medical or psychiatric comorbidities
- Opioid detoxification in a rehab setting (outpatient or inpatient)
- Enforced weaning and referral to an addiction specialist may be necessary with aberrant drug-related behaviors

American Pain Society—American Academy of Pain Medicine

- 10% dose reduction weekly
- 25-50% dose reduction every few days
- At greater than 200mg/day MEQ initial wean can be more rapid
- At doses of 60-80 mg/day MEQ slower tapers may be required

National Opioid Use Guideline Group

- Tapering indications
  - Severe pain despite adequate trial of multiple opioids
  - Complications (sleep apnea, falls)
  - “Structured opioid therapy” for patients with co-morbid addiction and pain

National Opioid Use Guideline Group

- Controlled-release morphine
- Scheduled doses, consistent daily schedule
- Prescribe at frequent dispensing intervals
- 10% of total daily dose daily to 5% every 1-4 weeks
- Half the taper rate once one-third of dose is reached
- Hold or increase dose with increased pain, severe withdrawal, or worsening mood
American Society of Interventional Pain Physicians

- “It is essential to monitor for side effects and manage them appropriately including discontinuation of opioids if indicated”
- 10% of the original dose weekly
- Tapering over 6-8 weeks
- Clonidine 0.1-0.2mg PO q6hrs or Clonidine 0.1mg/24 hrs TD weekly
- Mild opioid withdrawal symptoms up to 6 months after discontinuation

Conclusions

- The safety and efficacy of long-term opioid therapy for chronic pain remains undetermined, but opioid therapy remains an important treatment option in the interdisciplinary management of a broad range of pain conditions.
- Opioid cessation should be considered in the context of adverse effects, aberrant drug behaviors, and lack of treatment efficacy.
Does Pain Serve any Function or Purpose?
Is all Pain the Same?

**Acute Pain**
- **Hurt = Harm**
  - Avoidance decreases damage
- **Etiology:**
  - Clear pathway
  - Often single cause
- **Treatment Course**
  - Fixed end point
  - Immobilization often essential for recovery
  - Medications

**Chronic Pain**
- **Hurt ≠ Harm**
  - Fear-avoidance cycle
- **Etiology:**
  - Many unknowns
  - Multifactorial
- **Treatment Course**
  - No fixed end point
  - Immobilization can worsen condition
  - Medications: Caution
Management Approach to Pain

- Similar to other chronic health conditions lacking a cure
- Focus on quality of life & functioning
Example: Diabetes

- Regulate diet
- Check blood sugars
- Exercise regularly
- Take insulin/medications
- Monitor wounds
Chronic Pain Management

- Medical optimization
  - Physician, NP, PA

- Physical reconditioning
  - Rehabilitation provider (PT, OT)

- Behavioral/lifestyle modification
  - Pain Psychologist
Interdisciplinary Management

Diabetes
- Regulate diet
- Check blood sugars
- Exercise regularly
- Take insulin/medications
- Monitor wounds

Chronic Pain
- Medical optimization
- Physical reconditioning
- Behavioral/lifestyle modification
Learn to Live with Pain?

LIFE
Learn to Live with Pain?

LIFE

Family Friends Work School
Sports Leisure Self-care Music
Vacations Hobbies Dining
Entertainment Socializing
Cooking Cleaning Errands
Learn to Live with Pain?

LIFE

Family Friends Work School
Sports Leisure Self-care Music
Vacation Hobbies Dining
Entertainment Socializing
Cooking Cleaning Errands
Learn to Live with Pain?

LIFE
- Family
- Friends
- Work
- Sports
- Leisure
- Self-care
- Music
- Vacations
- Hobbies
- Dining
- Entertainment
- Socializing
- Cooking
- Cleaning
- Errands
- Pain
  - Decreased activity levels
  - Increased emotional distress
  - Interpersonal problems
  - Physical deconditioning
  - Increased number of doctor office visits
  - Sleep disturbances
Yes, Learn to Live with Pain!

LIFE
- Family
- Friends
- Work
- School
- Sports
- Leisure
- Self-care
- Music
- Vacations
- Hobbies
- Dining
- Entertainment
- Socializing
- Cooking
- Cleaning
- Errands

Pain
Chronic Pain Management

- Development of active self-management tools
- Goal of improving self-efficacy
Common Curriculum Components: Psychology

- Overview of pain
- Pacing of activities
- Pain & stress physiology
- Relaxation training
- Sleep hygiene
Common Curriculum Components: Psychology

- Identifying environmental stressors (work & home)
- Development of stress management techniques (e.g., cognitive restructuring)
- Assertiveness/communication skills development
- Flare contingency planning
Common Curriculum Components: Psychology

- Relaxation training
- The role of cognitive processes
Stress, the Nervous System, and Pain

Nervous System

Central Nervous System
- Brain
- Spinal Cord

Peripheral Nervous System
- Somatic Nervous System
- Autonomic Nervous System
  - Sympathetic Nervous System: Activates the body to deal with stressful situations
  - Parasympathetic Nervous System: Helps the body return to a calmer state
Stress, the Nervous System, and Pain

- Sympathetic Activation
  - Increased heart rate
  - Increased blood pressure
  - Increased muscle tension
  - Constriction of blood vessels
  - Release of stress hormones
  - Pupil dilation
  - Change in breathing patterns
  - Additional systemic changes
Stress, the Nervous System, and Pain

- Parasympathetic Activation
  - Decreased heart rate
  - Decreased blood pressure
  - Decreased muscle tension
  - Expansion of blood vessels
  - Discontinuation of stress hormone release
  - Pupil constriction
  - Change in breathing patterns
  - Additional systemic changes
Stress, the Nervous System, and Pain

Pain

Nervous System Activation
Stress, the Nervous System, and Pain

Pain

Nervous System Activation
Stress, the Nervous System, and Pain

Pain

Nervous System Activation
Stress, the Nervous System, and Pain

Pain \rightarrow Anxiety \rightarrow \text{Nervous System Activation} \rightarrow \text{Pain}
Stress, the Nervous System, and Pain
Stress, the Nervous System, and Pain

Pain

Guilt
Anxiety
Anger

Nervous System Activation
Stress, the Nervous System, and Pain
Stress, the Nervous System, and Pain
Relaxation Training

- Breathing exercises
  - Deep
  - Slow
  - Mind control
Relaxation Training

- Why does this work?
  - Parasympathetic activity
  - Distraction
Stress, the Nervous System, and Pain
Stress, the Nervous System, and Pain

- Anxiety
- Anger
- Sadness
- Guilt
- Cognitive Processes
- Nervous System Activation
- Diet
- Financial Strain
- Pain
- Sleep
- Relationship Issues

Diagram showing the interconnections between stress factors and their effects on the nervous system and pain.
The Role of Cognitions

Situation → Interpretation → Consequences
- Emotional
- Behavioral
- Physical
The Role of Cognitions

- Situation
- Interpretation
- Consequences
  - Emotional
  - Behavioral
  - Physical
The Role of Cognitions

- Thought processes are often rooted in our core perception of ourselves and our roles in this world
- Usually shaped by early experiences
- Much of our maladaptive behaviors are rooted in dysfunctional thought patterns
- Can take a significant amount of time and work to alter our automatic thought processes
The Role of Cognitions

Pain

- This will never end
- Life is terrible
- The day is ruined

Sadness
- Anxiety
- Anger
- Overextend
- Snap at others
- NS activation
Where do we Break the Cycle?

- Pain
  - This will never end
  - Life is terrible
  - The day is ruined

- Sadness
  - Anxiety
  - Anger
  - Overextend
  - Snap at others
  - NS activation
Cognitive Restructuring

- Is this helpful?
- Is this accurate?
Cognitive Restructuring

**Previous Thoughts**
- There is nothing I can do to control this
- Life is terrible
- Nothing will get done today

**Modify Thoughts**
- Are these statements helpful?
- Are these statements accurate?
## Cognitive Restructuring

<table>
<thead>
<tr>
<th>Previous Thoughts</th>
<th>Modified Thoughts</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ There is nothing I can do to control this</td>
<td>▪ I can practice self-management skills</td>
</tr>
<tr>
<td>▪ Life is terrible</td>
<td>▪ Life may feel terrible now, but I know this flare will end</td>
</tr>
<tr>
<td>▪ Nothing will get done today</td>
<td>▪ I don’t know what the rest of the day will be like but I will make the most of it by pacing</td>
</tr>
</tbody>
</table>
The Role of Cognitions

Pain

- This is just a flare
- This moment will pass
- The day is not set

↓ Sadness
↓ Anxiety
↓ Anger
- Pace
- Engage
↓ NS activation
Empirically Validated Treatment: Self-Management Education

- Lambeek, Van Mechelen, Knol, Loisel, Anema (2010)
- Linton & Ryberg (2001)
- Flor, Fydrich, Turk (1992)
Empirically Validated Treatment

  - Randomized control trial (n=213)
  - All patients received regular primary care tx + Minimal Treatment (information pack, pamphlet) or 6-session CBT treatment
  - Assessments administered at pretest and 12-month follow-up
  - Risk for developing long-term sick absence decreased 9x in CBT group
  - CBT participants had decreased medical utilization compared to increase in other groups
Empirically Validated Treatment

- Linton & Nordin (2006)
  - 5-year follow-up of Linton & Andersson (2000) study, also used supplemental records from the National Insurance Authority
  - 97% completed follow-up questionnaire
  - CBT group had significantly less pain, higher activity, better quality of life, and better general health compared to Minimal Treatment Group
  - Risk of long-term sick leave 3x higher in the non-CBT group
  - CBT group had significantly less lost productivity costs
Empirically Validated Treatment

  - Patients deemed HR for development of chronic disability were randomly assigned to an early intervention FR group (n=22) or a non-intervention group (n=48). Low risk non intervention subjects also evaluated (n=54)
  - Patients tracked at 3 month intervals over the course of a year
  - HR patients in the early intervention group had significantly lower rates of healthcare utilization, medication use, and self-report pain variables
Empirically Validated Treatment cont’d

  - HR non-intervention group displayed more symptoms of chronic pain disability compared to low risk subjects
  - Greater cost savings associated with early intervention ($12,721) vs no intervention group ($21,843). Cost variables included healthcare visits, medication, lost wages, early intervention program cost
Stanford Comprehensive Interdisciplinary Pain Program (SCIPP)

- Typical patient
- Pain conditions accepted
- Admission criteria
Interdisciplinary Treatment

- Physical Therapy
- Occupational Therapy
- Medication Optimization (cocktail)
- Lifestyle/Behavioral Modification
Scheduled Activities

- AM Rounds
- Physical Therapy
- Occupational Therapy
- Pain Coping Skills Class
- Individual Provider Visits
Unscheduled Activities

- Independent practice
- Walking
- Activity tracking log
Behaviors Reinforced

- Consistent across all team members, including nursing
- Application of self-management skills
- Increased activity levels
- Focus on functioning
Behaviors not Reinforced

- Consistent across all team members, including nursing
- Pain behavior
- Medication focus
- Somatic complaints
- Inactivity
SCIPP Outcomes

- \( n = 44 \) (19 male, 25 female)
- Minimum of 1 pain diagnosis

- Assessments:
  - Center for Epidemiologic Study of Diseases—Depression Scale (CESD)
  - McGill Pain Questionnaire (MPQ)
  - McGill Pain Questionnaire-Visual-Analog Scale (MPQ-VAS)
  - Profile of Mood States (POMS)

- Administered within 24 hours of admission and discharge
Total CESD score was significantly lower at discharge than at admission ($p < .001$)
Significant reductions were detected on the MPQ sum score ($p=.005$) and each of the MPQ subscales – PRI (single item pain rating index; $p=.007$) and Affective ($p=.01$)
Average pain as assessed by the MPQ-VAS was also significantly lower upon discharge than at admission ($p < .001$)
Profile of Mood States

![Graph showing scores for various mood states such as Anger Hostility, Tension Anxiety, Depression Dejection, Vigor Activity, Fatigue Inertia, and Confusion Bewilderment. The x-axis represents Admit/Discharge Score, and the y-axis ranges from 0 to 30. Each mood state is represented by a different patterned bar.](image-url)
SCIPP Outcomes

- Significant changes on
  - CESD ($p<.001$)
  - MPQ-VAS average pain ($p<.001$)
  - MPQ summary score ($p=.005$)
  - MPQ pain rating index ($p=.007$)
  - MPQ affective score ($p=.01$)
  - POMS Tension-Anxiety ($p=.005$)
  - POMS Depression-Dejection ($p=.001$)
  - POMS Vigor-Activity ($p=.005$)
  - POMS Fatigue-Intertia ($p=.002$)
  - POMS Confusion-Bewilderment ($p=.003$)
  - POMS Total Mood Disturbance ($p=.01$)

- No significant difference on
  - POMS Anger-Hostility
Other Literature Findings

- 373 CPRP participants (3 week)
- ~57% on opioids at admission
- Assessments at admission, discharge, and 6-month (70% return rate; pain severity, depression, psychosocial functioning, health status, pain catastrophizing)
- Pain severity and depression higher in opioid users at admission
- Significant improvement on all variables at discharge, 6-month follow-up regardless of opioid status

Other Literature Findings

- 705 (600 completed) outpatient interdisciplinary program participants
- Opioid group tapered with cocktail
- Opioid group improved same as more than non-opioid group (pain severity, catastrophizing, sleep, treatment satisfaction, pain-related functioning domains)

Addressing Chronic Pain in the Context of Substance Use Disorders

- Employ use of a biopsychosocial formulation of the patient’s predicament versus focusing solely on a biomedical model
- Emphasize focus on function versus pain elimination: Set functional goals (resumption of normal activities, RTW) and use activity tracking sheets
Addressing Chronic Pain in the Context of Substance Use Disorders

- Medication reduction can improve functional outcomes
- Interdisciplinary care enhances results and can lead to decreased medical utilization

Lambeek, Van Mechelen, Knol, Loisel, Anema (2010); Flor, Fydrich, Turk (1992)
Buchner, Zahlten-Hinguranage, Schiltenwolf, Neubauer (2006); Linton & Ryberg (2001)