Disclosure Information
Western Occupational Health Conference 2011

I have the following financial relationships to disclose:
I have nothing to disclose
-and-
I will not discuss off label use and/or investigational use in my presentation

Spotting and Managing Delayed Recovery in Injured Workers

Ravi Prasad, PhD
Assistant Director, Division of Pain Management
Stanford University School of Medicine
rprasad@stanford.edu

Delayed Recovery: Key Features

• Failure to respond to initial treatment interventions
• Disability out of proportion with degree of impairment
• Increased likelihood to develop chronic disability
Implications: Patient

- Decreased overall functioning
- Increased work, social absenteeism
- Increased utilization of healthcare system
- Increased emotional distress
- Increased family stress
- Loss of income, financial strain

Implications: Provider

- Provider frustration
- Medication escalation
- Repeated use of interventions with no demonstrated efficacy for patient
- Increased likelihood of treatment denials from carrier

Implications: Society

- IOM Report (2011)
  - Chronic pain affects 116 million American adults
  - More than those affected by heart disease, cancer, and diabetes combined
  - Estimated annual cost of $635 billion in medical treatment and lost productivity
Delayed Recovery Pathway

LIFE

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

Injury
Who is at Risk?

- Adverse Childhood Experience (ACE) Study
  - CDC/Kaiser Permanente collaboration
  - Co-PIs: Robert Anda, MD, Vincent Felitti, MD
  - Examining relationship between ACEs and health/behavioral outcomes later in life
  - Data gathered from 17K individuals between 1995-97
Who is at Risk?

• Adverse Childhood Experiences
  – Physical/emotional neglect
  – Recurrent emotional abuse
  – Recurrent physical abuse
  – Sexual abuse (contact)
  – Household substance abuse
  – Incarceration of household member
  – Chronic mental illness
  – Mother treated violently
  – One or no parents

Who is at Risk?

• Higher ACE scores increase risk for developing
  – Medical/psychiatric disease
  – CD/SA issues
  – Health-related QOL issues
  – Partner violence
  – Sexual activity
  – Suicidality

Who is at Risk?

• Implications of ACE → Development of Axis II Disorder/Traits:
  – Diatheses-stress model (Weisberg, 2000)
  – Presence of an underlying Personality Disorder related to higher levels of self-reported distress and pain (Elliot, Jackson, Layfield, & Kendall 1996)
  – High risk individuals tend to have higher pain ratings
Who is at Risk?

- Other ACE-associated psychological risk factors
  [Pulliam, Gatchel, & Gardea, 2001; Vlaeyen & Linton 2000; Crombez, Vlaeyen, Heuts, & Lysens 1998]
  - Higher prevalence of Axis I disorders
  - Low positive temperament (enjoyment of life, undertaking projects with enthusiasm, etc.)
  - Avoidant/passive coping style: wishful thinking, escape behaviors
  - Pain-related fear/fear-avoidance
  - Maladaptive cognitions (Negative appraisal of internal and external stimuli, catastrophization)

Who is at Risk?

- Displacement
  - Subconscious process
  - Medical diagnosis is a safer/more acceptable representation of internalized emotional distress
  - Treatments subsequently serve to treat the underlying pathology

Who is at Risk?

- Non-psychiatric risk factors:
  - Job dissatisfaction
  - Prolonged work absence
  - Pending litigation
Identifying Delayed Recovery

• Clinical judgment
  – Pros: Minimal time involvement, no additional resources necessary
  – Cons: Difficult to justify treatment recommendations without additional corroborating data

Identifying Delayed Recovery

• Basic Psychological Assessment Tools
  – Examples
    • Pain Catastrophizing Scale (PCS)
    • Fear Avoidance Beliefs Questionnaire (FABQ)
  – Pros: Easy to administer and score, provides a starting point for patient education
  – Cons: Only identifies a cognitive tendency, not a screen for Axis I pathology, not as predictive of delayed recovery as other measures

PCS Sample

<table>
<thead>
<tr>
<th></th>
<th>Not at All</th>
<th>To a Slight Degree</th>
<th>To a Moderate Degree</th>
<th>To a Great Degree</th>
<th>All the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I worry all the time about whether the pain will ever end</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I don't think I can go on</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>It's been a week and I still feel I'm never going to get any better</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
FABQ Sample

<table>
<thead>
<tr>
<th>Question</th>
<th>Completely Disagree</th>
<th>Unsure</th>
<th>Completely Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My previous exercise severity during activities</td>
<td>0 1 2 3 4 5 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical activity makes my pain worse</td>
<td>0 1 2 3 4 5 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical activity might harm my back</td>
<td>0 1 2 3 4 5 6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Identifying Delayed Recovery

- Diagnostic Assessment Tools
  - Example:
    - Structured Clinical Interview for DSM-IV (SCID)
  - Pros: Assist with identifying the presence of psychiatric disorders known to be associated with disability and functional impairment
  - Cons: Time consuming, not as predictive of delayed recovery as other measures, not self-administered (SCID)

- Gatchel Algorithm (Gatchel, Polatin, Mayer, 1995)
  - Pros: Predicted with 90.7% accuracy ACLB patients that would go on to develop chronic disability problems
  - Cons: Time intensive—requires administration of multiple assessment devices
Identifying Delayed Recovery

• Orebro Muskuloskeletal Pain Screening Questionnaire
  
  — Pros: Brief (25-items rated 0-10), self-administered, decent reliability & validity, 80+ % accuracy of identifying individuals who may go on to have extended sick leave secondary to functional problems
  
  — Cons: Lower level of accuracy in identifying individuals who may go on to have extended sick leave due to pain

Orebro Sample

Other Variables to Explore

• Cultural factors
  
  — Are cultural variables playing a role in use of injury as a socially accepted reason for disability?
  
  — Other culture specific issues

• Family influences
  
  — Are solicitous behaviors from well-meaning family members creating subconscious secondary gain?
  
  — Are other family stressors creating subconscious secondary gain?
Other Variables to Explore

• Work environment
  – Is a stressful work environment of lack of workplace satisfaction creating subconscious secondary gain?
  – Can RTW be accomplished through setting up a modified transition plan with IW & employer?

• Presence of untreated medical conditions
  – Fractures, cancer, other organic pathologies

Early Intervention

• Participation in a structured program comprised of cognitive behavioral treatment and physical therapy training

• General Goals:
  – Develop healthier, adaptive coping habits
  – Shift locus of control
  – Decrease fear-avoidance behaviors
  – Increase overall functioning
  – Return to work

Early Intervention

• Different structures

• Average program duration: 6-9 weeks

• Weekly sessions combine PT and psychology treatment (~ 3 hours), or CBT alone

• Emphasis on self-management versus passive strategies
Common Curriculum Components: CBT

- Overview of pain (hurt vs. harm)
- Introduction to self-management strategies (e.g., relaxation training, pacing)

Pacing of Activities

Typical activity pattern of chronic pain patients:

![Waveform diagram]

Goal Activity Pattern:

![Waveform diagram]
Common Curriculum Components: CBT

- Identifying environmental stressors (work & home)
- Development of stress management techniques (e.g., cognitive restructuring, communication skills training, etc.)

Cognitive Restructuring

- Cognitive behavioral theories posit that our thoughts guide our behavior
- 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 negative thought patterns
- Patients with depression typically have a negative view of self, world, and future

Cognitive Restructuring

<table>
<thead>
<tr>
<th>Situation</th>
<th>Interpretation</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe Wake with</td>
<td>Nothing I can do</td>
<td>Irritable, Depressed</td>
</tr>
<tr>
<td>pain</td>
<td>Life is terrible</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nothing will get done</td>
<td>Anxious, Isolate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frustration, Increased</td>
</tr>
<tr>
<td></td>
<td></td>
<td>physiological arousal</td>
</tr>
</tbody>
</table>
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

Previous Thoughts

• There is nothing I can do to control this
• Life is terrible
• Nothing will get done today

Modified Thoughts

• I can practice self-management skills
• Life may feel terrible now, but I know this flare will end
• I don’t know what the rest of the day will be like but I will make the most of it by pacing

Cognitive Restructuring

<table>
<thead>
<tr>
<th>Situation</th>
<th>Interpretation</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe</td>
<td>Wake with pain</td>
<td>I can practice self-management skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Life may feel terrible now, but I know this flare will end</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I don’t know what the rest of the day will be like but I will make the most of it through pacing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increased physiological arousal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Goal-oriented</td>
</tr>
</tbody>
</table>
Common Curriculum Components: CBT

- Flare contingency planning
- Maintaining gains

Common Curriculum Components: PT

- Replication of work activities (graded exposure as needed)
- Individualized exercise plans
- Behaviorally address fear avoidance behaviors

Empirically Validated Treatment: Self-Management Education

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

- Risk for developing long-term sick absence significantly reduced (Linton & Andersson, 2000)

- Sustained increases in activity, QOL (Linton & Nordin, 2006)

- Less loss productivity costs (Linton & Nordin, 2006)

Empirically Validated Treatment: Early Intervention

- Lower rates of healthcare utilization, medication use, and self-report pain variables (Gatchel, Polatin, Noe, Gardea, Pulliam, & Thompson, 2003)

- 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 x1 year (Gatchel, Polatin, Noe, Gardea, Pulliam, & Thompson, 2003)

Timing is Critical!

- Marhold, Linton, Melin (2000)
  - Randomized control trial (n=72): Compared outcomes from a 12-session CBT RTW program in individuals who had a history of LT sick leave (>12 mo) versus ST sick leave (2-6 mo), & a control group
  - Treatment was more effective than control in the ST leave group but not for the LT leave group
Addressing Delayed Recovery with Limited Resource Availability

• Employ use of a biopsychosocial formulation of the patient’s predicament versus focusing solely on a biomedical model

• Engage in multidisciplinary treatment whenever possible, even if an EIP is not available

• Remain confident, positive, and reassuring (Thomas & McAdams, 2004)

Addressing Delayed Recovery with Limited Resource Availability

• Provide patient education on course of pain
  – Dedicate a fixed portion of the appointment to counseling
  – Set weekly appointments to track functioning
  – Provide overview of pain course
  – Normalize tendency to develop fear of movement and address fear-avoidance behavior

Addressing Delayed Recovery with Limited Resource Availability

• Emphasize focus on function versus pain elimination: Set functional goals (resumption of normal activities, RTW) and use activity tracking sheets (Hawthorne Effect)

<table>
<thead>
<tr>
<th></th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:00</td>
<td>Gym</td>
<td>Pool Ex</td>
<td>Gym</td>
<td>Pool Ex</td>
</tr>
<tr>
<td>6:00</td>
<td>Dinner Prep</td>
<td>Dinner Clean</td>
<td>Dinner Prep</td>
<td>Dinner Clean</td>
</tr>
<tr>
<td>7:00</td>
<td>Walk dog</td>
<td>Kids HW</td>
<td>Walk dog</td>
<td>Kids HW</td>
</tr>
<tr>
<td>8:00</td>
<td>PC work</td>
<td>Car project</td>
<td>Pay bills</td>
<td>Read book</td>
</tr>
</tbody>
</table>
Addressing Delayed Recovery with Limited Resource Availability

- Minimize repeated invasive procedures & medication dose escalation in the absence of functional improvement

Summary

- Delayed recovery has significant implications for patients, providers, and society
- Remain cognizant of risk factors associated with delayed recovery
- Use assessment tools and/or local providers (e.g., psychologist, PT) to assist with identification of high risk patients
- Enroll in Early Intervention program as soon as delayed recovery identified
- Dedicate a fixed portion of the session to patient education & reassurance
- Focus on functioning vs. symptoms

References

- Committee on Advancing Pain Research, Care, and Education: Institute of Medicine. Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research. 2011.
References