Walking the Tightrope: Pain, Addiction, and Suicide

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Director, Pain and Substance Use Disorder Program
Center for Studies of Addiction
Conflict of interest

- MDC has no conflict of interest related to the topic of this presentation
Learning Objectives

- Describe the three major risk factors for suicidal behavior in patients with pain and a substance use disorder

- Explain the prevailing theory of suicidal ideation and behavior as it pertains to patients with pain and a substance use disorder.

- Contrast the pros and cons of the available pharmacologic agents used to treat substance use disorders
Suicide Overview

Suicide and Unintentional Overdoses

Pain, Mood and Substance Use Disorders

Risk Factors, Mediators and Conceptual Models

Risk Assessment and Mitigation

Summary
CPS-Consequences

• Untreated or mismanaged pain can lead to adverse effects such as delays in healing, changes in the central nervous system (neuroplasticity), chronic stress, depression, opioid addiction and suicide

McCaffery & Pasero 1999
Fishbain 1999
Mendell & Sahenk 2003
“The suffering of the suicidal is private and inexpressible, leaving family members, friends and colleagues to deal with an almost unfathomable kind of loss, as well as guilt. Suicide carries in its aftermath a level of confusion and devastation that is, for the most part, beyond description”.

Kay Redfield Jamison
Epidemiology

- Every 40 seconds someone in the world dies of suicide
- An estimated 804,000 suicide deaths occurred worldwide in 2012
- The annual global suicide rate was 11.4 per 100,000 population (15.0 male, 8.0 female)
- In the 15-29 age group it is the second leading cause of death
- Suicide by ingestion of pesticides, hanging and firearms are the most common methods used globally

http://www.who.int/mentalhealth/suicide-prevention/exesummaryenglish.pdf
1.5 Million Violent Deaths Per Year

http://www.who.int/mentalhealth/suicide-prevention/exesummaryenglish.pdf
Suicide Rate by Income

Total suicides 803 900

Low- and middle-income 606 700 (75.5%)

High-income 197 200 (24.5%)
Etiology – Biological Factors

- Diminished central serotonin plays a role in suicidal behavior
- Low concentration of 5-HIAA (5-hydroxyindoleacetic acid) in the CSF predicted future suicidal behavior and was discovered in depressed suicide attempters and in the brain stems of autopsied completed suicide victims


Etiology – Genetic Factors

- Suicidal behavior, like other psychiatric disorders, tends to run in families
- In psychiatric patients, a family history of suicide increases the risk of attempted suicide and that of completed suicide in most diagnostic groups
- This has been substantiated with twin studies and adoption studies

Etiology – Genetic Factors-cont

- Clinical risk factors to date have low predictive value
- A number of potential biomarkers of suicide have been studied
- The most promising to date has been the serotoninergic system, particularly the polymorphism of the gene coding for the serotonin transporter (5-HTTLPR) and brain-derived neurotrophic factor

Pain, Mood and Anxiety Disorders

On The Threshold Of Eternity
By Vincent Van Gogh
Mood and anxiety disorders associated with chronic pain: an examination in a nationally representative sample

Lachlan A. McWilliams*, Brian J. Coxb, Murray W. Ennsb

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bDepartment of Psychiatry, PZ-430 PsychHealth Centre, University of Manitoba, 771 Bannatyne Avenue, Winnipeg, Man., Canada R3E 3N4

Received 4 March 2003; received in revised form 10 July 2003; accepted 18 July 2003

- National Comorbidity Survey to evaluate the association between chronic pain and common mood and anxiety disorders
- Participants (n= 5877) completed the Composite International Diagnostic Interview based on the DSM
<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number of participants meeting diagnostic criteria (% in parentheses)</th>
<th>Inferential statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chronic pain (n = 382)</td>
<td>General population (n = 5495)</td>
</tr>
<tr>
<td>Any mood disorder</td>
<td>83 (21.7)</td>
<td>551 (10.0)</td>
</tr>
<tr>
<td>Depression</td>
<td>77 (20.2)</td>
<td>510 (9.3)</td>
</tr>
<tr>
<td>Dysthymia</td>
<td>20 (5.2)</td>
<td>128 (2.3)</td>
</tr>
<tr>
<td>Any anxiety disorder</td>
<td>134 (35.1)</td>
<td>992 (18.1)</td>
</tr>
<tr>
<td>Generalized anxiety disorder</td>
<td>28 (7.3)</td>
<td>144 (2.6)</td>
</tr>
<tr>
<td>Panic disorder with or without agoraphobia</td>
<td>25 (6.5)</td>
<td>103 (1.9)</td>
</tr>
<tr>
<td>Simple phobia</td>
<td>60 (15.7)</td>
<td>456 (8.3)</td>
</tr>
<tr>
<td>Social phobia</td>
<td>45 (11.8)</td>
<td>428 (7.8)</td>
</tr>
<tr>
<td>Agoraphobia with or without panic</td>
<td>32 (8.4)</td>
<td>182 (3.3)</td>
</tr>
<tr>
<td>Posttraumatic stress disorder</td>
<td>41 (10.7)</td>
<td>182 (3.3)</td>
</tr>
</tbody>
</table>

Diagnoses were made using the Composite International Diagnostic Interview. Psychiatric diagnostic categories were not mutually exclusive.
Pain, SUD and Suicidal Ideation
There is robust literature that there is a high prevalence of SI in patients with pain ranging from 18% to > 50%.


A systematic review by Tang and Crane revealed that the risk of successful suicide was doubled in patients with CP as compared to non-pain controls.

Suicide and Chronic Pain

Approximately 40% of patients seeking treatment for substance use disorders report a history of suicide attempts.\(^1\)\(^-\)\(^3\)

Compared to the general population, those with alcohol use disorders are almost 10 times more likely to die by suicide and those who inject drugs are about 14 times more likely to commit suicide.\(^4\)

% of Population

Cheatle et al Clinical and genetic characteristics of opioid addiction in patients with chronic pain 1R01DA032776-01 NIH/NIDA
SBQ-R Suicide Behaviors Questionnaire-Revised

Patient Name ___________________________ Date of Visit ________________

Instructions: Please check the number beside the statement or phrase that best applies to you.

1. Have you ever thought about or attempted to kill yourself? (check one only)
   □ 1. Never
   □ 2. It was just a brief passing thought
   □ 3a. I have had a plan at least once to kill myself but did not try to do it
   □ 3b. I have had a plan at least once to kill myself and really wanted to die
   □ 4a. I have attempted to kill myself, but did not want to die
   □ 4b. I have attempted to kill myself, and really hoped to die

2. How often have you thought about killing yourself in the past year? (check one only)
   □ 1. Never
   □ 2. Rarely (1 time)
   □ 3. Sometimes (2 times)
   □ 4. Often (3-4 times)
   □ 5. Very Often (5 or more times)

3. Have you ever told someone that you were going to commit suicide, or that you might do it? (check one only)
   □ 1. No
   □ 2a. Yes, at one time, but did not really want to die
   □ 2b. Yes, at one time, and really wanted to die
   □ 3a. Yes, more than once, but did not want to do it
   □ 3b. Yes, more than once, and really wanted to do it

4. How likely is it that you will attempt suicide someday? (check one only)
   □ 0. Never
   □ 1. No chance at all
   □ 2. Rather unlikely
   □ 3. Unlikely
   □ 4. Likely
   □ 5. Rather likely
   □ 6. Very likely
### SBQ-R

<table>
<thead>
<tr>
<th>Control</th>
<th>Experimental</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean = 5.12</td>
<td>Mean = 8.48</td>
<td>0.002**</td>
</tr>
<tr>
<td>SD = 3.49</td>
<td>SD = 4.73</td>
<td></td>
</tr>
</tbody>
</table>

For the SBQR the range of scores is from 3-18 where higher scores indicate more suicidal behavior. A cut point of $\geq 7$ is considered to indicate high risk for suicide with a sensitivity of 93% and specificity of 95%.
Pain and Suicidal Ideation: Risk Factors and Mediators
Risk Factors

- Sleep
- Pain Intensity
- Pain Duration
- Pain Type
- Opioid Dosing
Pain and Sleep Disorders

- Chronic pain is associated with multiple symptoms that may impair a patient's quality of life, including emotional distress, fatigue and sleep disturbance.

- Studies have demonstrated that 50% of patients with a number of different chronic pain conditions complain of sleep disturbance, with estimates as high as 70%-88%.

% Population Sleep Disturbance (n= 1038)

None 8%
Mild 18%
Moderate 34%
Severe 40%

Cheatle M et al “Clinical and Genetic Characteristics of Opioid Addiction in Chronic Pain” 1RO1DA032776-01 NIH/NIDA unpublished data
51 outpatients with non-cancer chronic pain were recruited and completed the Pittsburgh Sleep Quality Index, the Beck Depression Inventory, and the Multi-Dimensional Pain Inventory. Subjects were classified as suicidal ideators or non-ideators, based on the BDI.

Results indicated that 24% reported suicidal ideation and endorsed higher levels of sleep-onset insomnia, pain intensity, medication usage, pain related interference, affective distress and depressive symptoms.

Step-wise, discriminate function analysis revealed that sleep onset insomnia severity and pain intensity predicted 84.3% of the cases.

Authors concluded that chronic pain patients who self-report severe and frequent initial insomnia with concomitant daytime dysfunction and high pain intensity were more likely to report passive suicidal ideation, independent of the effects of depression severity.
Pain Intensity

Analyzed data Veteran’s Affairs’ medical records and the National Death Index (n=260,254) evaluating the association between self-assessed pain severity and SB in veterans.

They discovered after controlling for demographic and psychiatric factors that veterans with severe pain were more likely to die by suicide than ones with mild or moderate pain (HR:1.33; 95% CI: 1.15-1.54).
Potentially Vulnerable Pain Populations
Suicidal ideation and the risk of suicide in patients with fibromyalgia: a comparison with non-pain controls and patients suffering from low-back pain

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Beatriz M Jimenez-Rodriguez²
Emilia Condés-Moreno³
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Abstract: Fibromyalgia is associated with an increased rate of mortality from suicide. In fact, this disease is associated with several characteristics that are linked to an increased risk of suicidal behaviors, such as being female and experiencing chronic pain, psychological distress, and sleep disturbances. However, the literature concerning suicidal behaviors and their risk factors in fibromyalgia is sparse. The objectives of the present study were to evaluate the prevalence of suicidal ideation and the risk of suicide in a sample of patients with fibromyalgia compared with a sample of healthy subjects and a sample of patients with chronic low-back pain. We also aimed to evaluate the relevance of pain intensity, depression, and sleep quality as variables related to suicidal ideation and risks. Logistic regression was applied to estimate the likelihood of suicidal ideation and the risk of suicide adjusted by age and sex. We also used two logistic regression models using age, sex, pain severity score, depression severity, sleep quality, and disease state as independent variables and using the control group as a reference. Forty-four patients with fibromyalgia, 32 patients with low-back pain, and 50 controls were included. Suicidal ideation, measured with item 9 of the Beck Depression Inventory, was almost absent among the controls and was low among patients with low-back pain; however, suicidal ideation was prominent among patients with fibromyalgia ($P<0.0001$). The risk of suicide, measured with the Plutchik Suicide Risk Scale, was also higher among patients with fibromyalgia than in patients with low-back pain or in controls ($P<0.0001$). The likelihood for suicidal ideation and the risk of suicide were higher among patients with fibromyalgia (odds ratios of 26.9 and 48.0, respectively) than in patients with low-back pain (odds ratios 4.6 and 4.7, respectively). Depression was the only factor associated with suicidal ideation or the risk of suicide.

Keywords: chronic low-back pain, suicidal risk, depression
Suicidal Ideation

% of population

* Control
* LBP
* FM

* p<0.0001
<table>
<thead>
<tr>
<th></th>
<th>OR</th>
<th>95% CI</th>
<th>( P )-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suicidal ideation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>26.889</td>
<td>5.72–126.42</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Low-back pain</td>
<td>4.583</td>
<td>0.826–25.432</td>
<td>0.082</td>
</tr>
<tr>
<td><strong>Risk of suicide</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>48.000</td>
<td>12.929–178.206</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Low-back pain</td>
<td>4.725</td>
<td>1.297–17.209</td>
<td>0.019</td>
</tr>
</tbody>
</table>
Risk Factors for Suicidal Ideation among Patients with Complex Regional Pain Syndrome

Do-Hyeong Lee¹, Eun Chung Noh², Yong Chul Kim³, Jae Yeon Hwang⁵, Sung Nyun Kim¹, Joon Hwan Jang¹, Min Soo Byun¹, and Do-Hyung Kang¹,⁴

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²Interdisciplinary Program of Neuroscience, Seoul National University, Seoul, Republic of Korea
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⁴Department of Psychiatry, Seoul National University College of Medicine, Seoul, Republic of Korea
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Objective  Chronic pain frequently coexists with psychiatric symptoms in patients diagnosed with complex regional pain syndrome (CRPS). Previous studies have shown a relationship between CRPS and the risk of suicide. The purpose of this study was to assess risk factors for suicidal ideation in patients with CRPS.

Methods  Based on criteria established by the International Association for the Study of Pain, 39 patients diagnosed with CRPS Type 1 or Type 2 were enrolled in this study. Suicidal ideation was assessed using item 3 of the Hamilton Depression Rating Scale (HAMD), and symptoms of pain were evaluated using the short form of the McGill Pain Questionnaire (SF-MPQ). Psychiatric symptoms were assessed in using the Structured Clinical Interview for DSM-IV Disorders (SCID-I, SCID-II), the HAMD, the Hamilton Anxiety Rating Scale (HAMA), the Global Assessment of Functioning Scale (GAF), and the Pittsburgh Sleep Quality Index (PSQI).

Results  Twenty-nine patients (74.4%) were at high risk and 10 (25.6%) were at low risk for suicidal ideation. Risk factors significantly associated with suicidal ideation included depression (p=0.002), severity of pain (p=0.024), and low scores on the GAF (p=0.027). No significant correlations were found between suicidal ideation and anxiety or quality of sleep.

Conclusion  Significant risk factors for suicidal ideation in patients with CRPS include severity of pain, depressive symptoms, and decreased functioning. These results suggest that psychiatric evaluation and intervention should be included in the treatment of CRPS.

Psychiatry Investig 2014;11:32-38
Opioid Dosing


**Opioid dose and risk of suicide**

Mark A. Ilgen, PhD\(^1,2\), Amy S. B. Bohnert, PhD\(^1,2\), Dara Ganoczy, MPH\(^1\), Matthew J. Bair, MD\(^3,4\), John F. McCarthy, PhD\(^1,2\), and Frederic C. Blow, PhD\(^1,2\)

- Retrospective data analysis on the risk of suicide by different opioid doses in Veterans with CNMP.
- After controlling for demographic and other clinical features (depression, PTSD etc) the results indicated that higher opioid doses were associated with increased risk of suicide mortality.
- Compared with individuals that received \(\leq 20\) mg morphine equivalent daily dose (MEDD), those prescribed 20 to 50 MEDD had a hazard ratio (HR) of 1.48 (95% CI: 1.25-1.75); 50 to \(>100\) MEDD HR of 1.69 (95% CI: 1.33-2.14); and 100 + a HR of 2.15 (95% CI: 1.64-2.81).
Possible Mediators

- Catastrophizing
- Burdensomeness
- Social Isolation
- Mental Defeat
Pain-related catastrophizing as a risk factor for suicidal ideation in chronic pain

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b Health Services Research and Development, Cincinnati VA Medical Center, USA

Received 16 January 2006; received in revised form 13 June 2006; accepted 6 July 2006

• 1,512 patients seeking treatment for chronic pain completed a variety of questionnaires assessing pain, coping and psychosocial functioning
• Approximately 32% of this population reported some form of recent suicidal ideation
• Results indicated that the 2 predictors of the presence and degree of suicidal ideation were the magnitude of depressive symptoms and the degree of pain-related catastrophizing
• Authors concluded that independent of pain severity or depressive symptomatology there is a strong association between pain-coping strategies and suicide related cognitions
113 patients referred for pain related health complaints to a Clinical Health Psychology clinic

Intake interview included BDI-II, MPQ and one question on burdensomeness “It would be better for everyone involved if I were to die” on a 5-point Likert scale measuring frequency of having the thought (1 = “Never or none of the time” to 5 = “Always or a great many times”)

Results revealed that perceived burdensomeness was the sole significant predictor of SI (b = 3.068, P = 0.004, OR = 21.503 [2.680 to 172.547]).

A retrospective chart review of 466 patients with CNCP treated in a behaviorally based pain program

Results revealed a high rate of SI (26%).

Logistic regression revealed that history of sexual/physical abuse (Beta=0.825; p<0.020; OR=2.657 [95% CI=1.447-4.877]), family history of depression (Beta=0.471; p<0.006; OR= 1.985 [95% CI= 1.234-3.070]) and being socially withdrawn (Beta=0.482; p< 0.001; OR= 2.226 [95% CI= 1/413-3.505]) were predictive of SI
Interpersonal Theory of Suicide

Mental defeat

Depression - Social Rank Theory

PTSD – CBT & Exposure therapy

Gilbert & Allan, 1998

Ehlers et al., 1998
Mental defeat in chronic pain

- A concept to characterise the deeper impact of pain on self-concept

- A state of mind marked by a sense of a loss of autonomy, agency and human integrity

- A type of self-processing, where persistent pain results in negative beliefs about the self in relation to pain

Tang et al, 2007 CJP; Tang et al., 2010; PAIN
Mental defeat

• “Defeat of the mind”

• “The pain is taking over and you cannot cope with what you are supposed to do”

• “I just felt everything had beaten me and there’s nothing I could do. I couldn’t fight anymore.”

• “The pain belittles you as a person”

• “It’s like you’re not a human being”

Tang, Salkovskis et al., 2009; BJCP, 48; 1-20
Mental Defeat Is Associated With Suicide Intent in Patients With Chronic Pain

Nicole K.Y. Tang, DPhil,* Philippa Beckwith, DClinPsych,† and Polly Ashworth, DClinPsych‡

- N=62 chronic pain pts (42F; 20M)
- Past suicide attempts
  - 12.9% once
  - 9.7% twice or more
- Current and worst ever suicidal ideation
  - Beck Scale of Suicide Ideation – to measure intent
- Other psychological predictors of suicidality
  - Depression, Anxiety, Hopelessness and Pain self-efficacy

## Correlations with suicide intent

<table>
<thead>
<tr>
<th></th>
<th>Suicidal ideation (Worst ever)</th>
<th>Suicidal Ideation (In the past week including today)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>0.33*</td>
<td>0.002</td>
</tr>
<tr>
<td>Depression</td>
<td>0.32*</td>
<td>0.19</td>
</tr>
<tr>
<td>Pain Self-Efficacy</td>
<td>-0.20</td>
<td>0.005</td>
</tr>
<tr>
<td>Hopelessness</td>
<td>0.19</td>
<td>-0.12</td>
</tr>
<tr>
<td>Mental defeat</td>
<td>0.45**</td>
<td>0.13</td>
</tr>
</tbody>
</table>

Correlation between worst ever & current SI = 0.33**
Risk Mitigation

- Risk Assessment
- Intervention

Risk Assessment

- Age >45
- Gender (female)
- Alcohol dependence
- Past suicide attempts
- History of psychological hospitalization
- Poor social support
- Unemployed
- Divorced
- Mental disorders

Assessment

- Mental Health Screening
- Suicide Risk
- SUD Screening
- UDS
## Mental Health Screening Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th># of Items</th>
<th>Time to Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beck Depression Inventory II (Beck et al, 1996)</td>
<td>21</td>
<td>5 - 10 minutes</td>
</tr>
<tr>
<td>Beck Depression Inventory – Fast Screen for Medical Patients</td>
<td>7</td>
<td>&lt; 5 minutes</td>
</tr>
<tr>
<td>(Beck et al, 2000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profile of Mood States II:</td>
<td>65</td>
<td>10 - 15 minutes</td>
</tr>
<tr>
<td>Full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short (McNair et al, 1971)</td>
<td>35</td>
<td>5 - 10 minutes</td>
</tr>
<tr>
<td>Zung Self-Rating Depression Scale (Zung 1965)</td>
<td>20</td>
<td>10 minutes</td>
</tr>
<tr>
<td>Center for Epidemiologic Studies Depression Scale:</td>
<td>20</td>
<td>5 - 10 minutes</td>
</tr>
<tr>
<td>Full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short (Radloff, 1977)</td>
<td>10</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Patient Health Questionnaire:</td>
<td>9</td>
<td>5 minutes</td>
</tr>
<tr>
<td>PHQ-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHQ-4 (Kroenke et al 19990)</td>
<td>4</td>
<td>&lt; 5 minutes</td>
</tr>
</tbody>
</table>
# Opioid Abuse and SUD Screening Tools

<table>
<thead>
<tr>
<th>Patients considered for long-term opioid therapy:</th>
<th>Items</th>
<th>Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORT Opioid Risk Tool</td>
<td>5</td>
<td>By patient</td>
</tr>
<tr>
<td><strong>SOAPP</strong>® Screener &amp; Opioid Assessment for Patients w/ Pain</td>
<td>24, 14, &amp; 5</td>
<td>By patient</td>
</tr>
<tr>
<td>DIRE Diagnosis, Intractability, Risk, &amp; Efficacy Score</td>
<td>7</td>
<td>By clinician</td>
</tr>
</tbody>
</table>

**Characterize misuse once opioid treatments begins:**

<table>
<thead>
<tr>
<th>PMQ Pain Medication Questionnaire</th>
<th>26</th>
<th>By patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM Current Opioid Misuse Measure</td>
<td>17</td>
<td>By patient</td>
</tr>
<tr>
<td>PDUQ Prescription Drug Use Questionnaire</td>
<td>40</td>
<td>By clinician</td>
</tr>
</tbody>
</table>

**Not specific to pain populations:**

| CAGE-AID Cut Down, Annoyed, Guilty, Eye-Opener Tool, Adjusted to Include Drugs | 4 | By clinician |
| RAFFT Relax, Alone, Friends, Family, Trouble | 5 | By patient |
| DAST Drug Abuse Screening Test | 28 | By patient |
| SBIRT Screening, Brief Intervention, & Referral to Treatment | Varies | By clinician |
| AUDIT-C Alcohol Use Disorders Identification Test Consumption | 3 | By patient |
Urine Drug Monitoring

- Recent guidelines (Chou et al, 2009) recommend periodic UTS for CNCP patients on COT

- Assess only the presence of a particular drug and/or metabolite in a specific concentration at a specific moment in time

- A positive result does not diagnose
  - Drug addiction
  - Physical dependence
  - Impairment

- Absence of Rx opioid may reflect diversion, but also hoarding
The P4: A Brief Measure

Past suicide attempts
Suicide Plan
Probability of completing suicide
Preventative factors

Slide courtesy of Lynn Webster, MD
P4 Suicidality Screener

Have you had thoughts of actually hurting yourself?

NO  YES

1. Have you ever attempted to harm yourself in the past?

NO  YES

2. Have you thought about how you might actually hurt yourself?

NO  YES

3. There’s a big difference between having a thought and acting on a thought. How likely do you think it is that you will act on these thoughts about hurting yourself or ending your life some time over the next month?

a) Not at all likely __________

b) Somewhat likely __________

c) Very likely __________

4. Is there anything that would prevent you from harming yourself?

NO  YES  → [What? _______________]

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Shared (“Risk” Response)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Items 1 and 2</td>
</tr>
<tr>
<td>Minimal</td>
<td>Neither is shaded</td>
</tr>
<tr>
<td>Lower</td>
<td>At least one item is shaded</td>
</tr>
<tr>
<td>Higher</td>
<td>At least one item is shaded</td>
</tr>
</tbody>
</table>


Slide courtesy of Lynn Webster, MD
SBQ-R Suicide Behaviors Questionnaire-Revised

Patient Name ___________________________ Date of Visit _____________

Instructions: Please check the number beside the statement or phrase that best applies to you.

1. Have you ever thought about or attempted to kill yourself? (check one only)
   ☐ 1. Never
   ☐ 2. It was just a brief passing thought
   ☐ 3a. I have had a plan at least once to kill myself but did not try to do it
   ☐ 3b. I have had a plan at least once to kill myself and really wanted to die
   ☐ 4a. I have attempted to kill myself, but did not want to die
   ☐ 4b. I have attempted to kill myself, and really hoped to die

2. How often have you thought about killing yourself in the past year? (check one only)
   ☐ 1. Never
   ☐ 2. Rarely (1 time)
   ☐ 3. Sometimes (2 times)
   ☐ 4. Often (3-4 times)
   ☐ 5. Very Often (5 or more times)

3. Have you ever told someone that you were going to commit suicide, or that you might do it? (check one only)
   ☐ 1. No
   ☐ 2a. Yes, at one time, but did not really want to die
   ☐ 2b. Yes, at one time, and really wanted to die
   ☐ 3a. Yes, more than once, but did not want to do it
   ☐ 3b. Yes, more than once, and really wanted to do it

4. How likely is it that you will attempt suicide someday? (check one only)
   ☐ 0. Never
   ☐ 1. No chance at all
   ☐ 2. Rather unlikely
   ☐ 3. Unlikely
   ☐ 4. Likely
   ☐ 5. Rather likely
   ☐ 6. Very likely
Columbia–Suicide Severity Rating Scale (C-SSRS)

<table>
<thead>
<tr>
<th>Ideation</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wish to be dead or not wake up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Nonspecific thoughts</td>
<td></td>
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<tr>
<td>3. Specific thoughts of method</td>
<td></td>
<td></td>
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<tr>
<td>4. Some intent to act, no plan</td>
<td></td>
<td></td>
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<tr>
<td>5. Specific plan and intent</td>
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<table>
<thead>
<tr>
<th>Intensity</th>
<th>Most Severe Ideation:</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>NA</th>
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<tbody>
<tr>
<td>a. Frequency of thought</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>b. Duration of thoughts</td>
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<td></td>
<td></td>
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<tr>
<td>c. Controllability of thoughts</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>d. Deterrents</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>e. Reasons</td>
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<table>
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<tr>
<th>Behaviors</th>
<th>Yes</th>
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<tbody>
<tr>
<td>Actual suicide attempts</td>
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<tr>
<td>Interrupted attempts</td>
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<tr>
<td>Aborted attempts</td>
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<tr>
<td>Preparatory actions</td>
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<tr>
<td>Non-suicidal self-injurious behaviors</td>
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<table>
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<tr>
<th>Severity of Injury</th>
<th>Lethality of Suicide Attempts</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>NA</th>
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</thead>
<tbody>
<tr>
<td>Most serious attempt</td>
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<td></td>
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<table>
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<tr>
<th>Potential Lethality of Suicide Attempts</th>
<th>0</th>
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<th>NA</th>
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</thead>
<tbody>
<tr>
<td>Most serious attempt</td>
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Intervention
## Risk Stratification

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<thead>
<tr>
<th></th>
<th>LOW</th>
<th>HIGH</th>
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<tbody>
<tr>
<td><strong>Plans</strong></td>
<td>Vague</td>
<td>Specific</td>
</tr>
<tr>
<td><strong>Means</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(lethal supply Rx opioids)</td>
</tr>
<tr>
<td><strong>H/O Suicide Attempts</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Level of Support</strong></td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Coping Abilities</strong></td>
<td>Good</td>
<td>Poor</td>
</tr>
<tr>
<td><strong>Relationship with HCP</strong></td>
<td>Good</td>
<td>Poor</td>
</tr>
<tr>
<td><strong>Willingness to Contract</strong></td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Acute Suicidal Phase

- IP treatment depending on severity of depression and SI/plans
- Pharmacotherapy targeting depression and sleep
- If opioids Rx do so in small amounts with family member dispensing
- Frequent UDS to ensure adherence
Chronic Depression/SI

- Require ongoing psychiatric/psychological care as part of overall pain management program
- Frequent UDS if opioids Rx until mood stabilizes
- Regular mental health screening
Risk Mitigation
Biopsychosocial Approach to Pain and Addiction Care
Comprehensive pain management programs based on the biopsychosocial model of pain, typically emphasizing *cognitive behavioral therapy*, a graded *exercise program* and appropriate *medication management* have been shown to significantly improve treatment outcomes (return to work, pain reduction and increase in activity).

Gallagher, 1999
Loeser & Turk, 2000
McCraken & Turk, 2002
Cheatle & Gallagher, 2006
Biopsychosocial Treatment Program

- CBT
- Exercise
- Nutrition
- Evidence-based rational pharmacotherapy
- Social Support
Exercise, Pain and Opioid Sparing

- Exercise not only can enhance the release of endogenous opioids (endorphins) thus reducing the use of prescription opioids, but can also reduce the mortality and morbidity related to major health conditions.

- Recent data from randomized studies suggest that aerobic exercise also significantly improves function and quality of life in patients with chronic low back pain.

- Exercise has proven to be a potent anxiolytic as it both blunts the body’s response to cortisol and increases brain serotonin levels; epidemiological studies have shown that exercise both prevents anxiety disorders and effectively treats them.


Most patients with chronic noncancer pain have had multiple trials of physical therapy, many of which have been not efficacious and, in some cases, exacerbated the pain.

Physical therapy program for patients with chronic noncancer pain should include:

• Acquiring first-aid techniques for pain relief at home
• Establish a well-balanced independent exercise program. This should include establishing weekly goals that can be achievable that will not lead to an increase in pain or discouragement
CBT Therapy
Cognitive Behavioral Therapy

- CBT focuses on maladaptive thought patterns (catastrophizing) and behaviors (kinesiophobia) that occur frequently in patients with CNCP

- The objective of CBT is to guide the patient in recognizing and reconceptualizing his/her personal view of pain, identifying their role in the process of healing and promoting the patient being proactive rather than passive, and competent rather than incompetent

- CBT include specific skill acquisition (relaxation therapy, stress management, cognitive restructuring) followed by skill consolidation and rehearsal, and relapse training (Turk, Flor, 2006)
CBT has been found to be efficacious for a number of chronic pain disorders including:

- Arthritis (Keefe & Caldwell, 1997)
- Sickle Cell disease (Chen et al, 2004)
- Chronic low back pain (Lamb et al, 2010; Glombiewski et al, 2010)
- TMJ (Turner et al, 2006)
- Lupus (Greco et al, 2004)
- Pain in breast cancer patients (Tatrow et al, 2006)
Biological Substrates of CBT on Pain

- 16 high catastrophizing patients with fibromyalgia were randomized into a group that received a 4 week course of CBT or a control group that received only fibromyalgia education material.

- Resting state fMRI evaluated functional connectivity between key pain processing brain regions at baseline and post-treatment.

Results revealed that catastrophizing correlated with increased resting state functional connectivity between S1 and anterior insula.

The CBT group demonstrated a larger reduction in both pain and catastrophizing as compared to the control group at the 6-month follow-up and reduced resting state connectivity between S1 and anterior/medial insula at post-treatment and these changes were associated with concurrent treatment-related reduction in catastrophizing.

The authors concluded that CBT via reducing catastrophizing helps normalize pain-related brain responses.
CBT-I has been demonstrated to be equally effective or even superior to pharmacotherapy in patients with chronic primary insomnia.
CBT-I consists of:

- Psychoeducation about sleep and insomnia
- Stimulus control
- Sleep restriction
- Sleep hygiene
- Relaxation training
- Cognitive restructuring
This was a parallel-group, randomized, single blind trial of CBT-I with a contact/measurement control condition.

Twenty-eight subjects with chronic neck and back pain were randomized into the 2 groups.

Results revealed that patients who received CBT-I had significantly improved sleep and these patients maintained a statistically and clinically improved total sleep time even 6 months after treatment ended, despite the persistence of moderate to severe pain.

Pharmacotherapy should target 4 domains:

- Pain
- Sleep
- Mood
- Substance Use Disorders
Pharmacologic Approaches to Sleep Disorders

- Benzodiazepine and Receptor Agonists (BzRAS)
- Non-benzodiazepine receptor agonists
- Melatonin receptor agonists
- Sedative antidepressants
- Atypical antipsychotic medications,
- Antiepileptic Drugs
Benzodiazepine and Receptor Agonists (BzRAS)

- BzRAS include benzodiazepines (example Temazepam, Triazolam) and a newer class of non-benzodiazepine drugs (for example, Zolpidem).

- This class of drugs binds to GABA-A receptors and induces sedative/hypnotic, amnestic, anxiolytic and anticonvulsant effects.

- Many short term clinical trials show that BzRAS improve sleep quality, sleep latency, wakefulness after sleep onset and total sleep time.

- Most benzodiazepines (excluding Triazolam) have intermediate to long half-life, helping patients fall asleep and stay asleep longer.
Benzodiazepines may work well in short-term efficacy trials, but there is a paucity of data on long-term use and there are many documented adverse effects:

- Cognitive impairment
- Decreased attention
- Anterograde amnesia
- Depressive symptomatology with cognitive and psychomotor slowing
- Abruptly discontinuing benzodiazepines may lead to rebound insomnia, seizure activity

Given these multiple safety concerns, benzodiazepines have fallen out of favor as a class of drugs for use in sleep disorders.
Drug Misuse and Abuse

Non-Benzodiazepine Receptor Agonists (NBzRAS)

- Non-benzodiazepine receptor agonists include Ambien (Zolpidem), Sonata (Zalepon), and Lunesta (eszopiclone) are the newest class of FDA approved hypnotics used for insomnia.

- These class of drugs improve sleep latency and have potential for fewer daytime side effects, given their short half-life and receptor binding profile.
Antidepressants
Antidepressants

- Sedative antidepressants, such as tricyclic antidepressants mirtazapine and Trazodone, are useful in treating chronic pain patients with insomnia.

- These classes of drugs help to relieve:
  1. Insomnia
  2. Any associated depression that negatively influences pain perception
  3. The pain condition itself

- Tricyclic antidepressants have pro-serotonergic, noradrenergic, dopaminergic and sodium channel blocking effects that may account for their efficacy in pain and depression, along with anticholinergic and antihistaminic effects that lead to sedation.
Antidepressant medication

- The role of antidepressant medication may relate, in part, to the high prevalence of co-occurring depression in chronic pain
- There is evidence of the analgesic properties of tricyclics and certain SNRIs
- TCAs, SNRIs like opioids are used to modulate descending inhibitory pain pathways
Gabapentin and pregabalin often used to treat chronic pain conditions with comorbid insomnia.

In multiple studies of patients with neuropathic pain and fibromyalgia, self-reported sleep outcomes suggest positive effects on sleep latency and wakefulness after sleep onset, as well as increased deep sleep.

Both have adjunctive effects on depression and anxiety.

Pregabalin showed increased efficacy in promoting sleep in patients with diabetic neuropathy, compared to amitriptyline in a recent study.

Adverse effects include dizziness, next day sedation, GI symptoms and peripheral edema.
Medication-Assisted Therapy
Medication Assisted Treatment

- Methadone
- Buprenorphine
- Extended Release and Oral Naltrexone
Methadone

- Methadone is a full mu opioid agonist
- Blocks NMDA and monoamine reuptake
- Pharmacokinetic and pharmacodynamic effects of methadone have advantage over other opioids in that methadone is long-acting, development of tolerance is low, thus potentially leading to lower dosing long-term
- Methadone has NMDA receptor blocking activity and this may be the reason for efficacy in treating neuropathic pain
- Patients on MMT for OUD who do experience CNCP require higher dosing
Buprenorphine Formulations
Buprenorphine is a partial agonist at the mu-opioid receptors and an antagonist at the kappa receptors.

Mu-opioid receptor activity produces the analgesic effects of buprenorphine, while a strong affinity for the kappa receptors render them inactive.
Ultra-Low-Dose Buprenorphine as a Time-Limited Treatment for Severe Suicidal Ideation: A Randomized Controlled Trial

Yoram Yovell, M.D., Ph.D., Gali Bar, Ph.D., Moti Mashiah, M.D., Yehuda Baruch, M.D., Irina Briskman, M.D., Jack Asherov, M.D., Amit Lotan, M.D., Amihai Rigbi, Ph.D., Jaak Panksepp, Ph.D.

- Severely suicidal patients without substance abuse were randomly assigned to receive either buprenorphine or placebo (in a 2:1 ratio), in addition to their ongoing individual treatments
- Patients who received ultra-low-dose buprenorphine had a greater reduction in Beck Suicide Ideation Scale scores than patients who received placebo, both after 2 weeks (mean difference -4.3, 95% CI=-8.5, -0.2) and after 4 weeks (mean difference=-7.1, 95% CI=-12.0, -2.3)

Extended Release and Oral Naltrexone

- Naltrexone for extended-release injectable suspension
- Effective for treatment of opioid and alcohol dependence
- Low dose naltrexone now being used off label to treat fibromyalgia
Access Issues
Interventions

- **Office-based interventions**
  - Training non-BH staff on CBT etc
  - Antidepressant therapy/pain self-management program
    Kroenke et al 2009

- **E-health**
  - Computer-assisted CBT
  - Telemedicine
  - Smartphone Apps
Summary

• Pain and SUD are potentially independent risk factors for suicide
• Patients suffering from both pain and SUD are particularly vulnerable
• Possible mediators of the relationship between pain, SUD and suicidal risk include insomnia, sense of burdensomeness, social isolation and poor stress-coping abilities, in particular, catastrophizing
• Given the high co-occurrence of pain, SUD and suicidal ideation, patients with chronic pain should be routinely screened for depression and suicide
• A clinic should have an action plan for intervention in cases of patients identified as being actively suicidal or at high-risk for suicide (contracting, referral to behavioral health, close monitoring of potentially lethal medications, etc)
• **Globally poor access to mental health services needs to be addressed**
Future Directions

- Develop and test novel delivery systems for CBT/CAM and other non-pharmacologic interventions
- Healthcare economics research to support improved access to interdisciplinary pain care, behavioral health and SUD treatment
- Pharmacogenomics research supporting decision making for non-opioid pharmacotherapeutics (precision medicine)
- Research on biological substrates of non-pharmacologic interventions
- Investigate phenotypic and genotypic characteristics of suicidal ideation and behavior in patients with pain and pain and SUD
From: mother of pain sufferer
Date: Fri 3 Feb 2012
To: cheatle@upenn.edu
Subject: daughter’s suicide from unrelieved pain

“My 45 yo daughter suffered for 4 ½ years of constant back pain-unrelieved by narcotics and mostly ignored by all of the MD’s I took her to....on Jan 9th 2012, she killed herself by jumping off a high bridge to end her agony. It was HER RELENTLESS AGONIZING PAIN which eventually killed her. When she recognized the only narcotic she could tolerate no longer worked, there was no hope left...she knew her old age would be a nightmare...it is then that she made the decision to get out of her inferno. “
Acknowledgements

- Grant 1RO1DA032776-01 from the National Institute on Drug Abuse, National Institutes of Health

- University of Pennsylvania
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  - Dana Divens
  - Ann Bradshaw

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  - Lynn Webster, MD

- Harvard University
  - Mohammed Issa, MD
  - Robert Jamison, PhD
THANK YOU !!

Martin D. Cheatle, Ph.D.  

cheatle@upenn.edu