COGNITIVE BEHAVIORAL THERAPY FOR DEPRESSION AND ENGAGEMENT IN HIV CARE FOR PEOPLE LIVING WITH HIV

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High Rates of Depression in Chronic Medical Illness: Examples of HIV and Diabetes

<table>
<thead>
<tr>
<th>General Population</th>
<th>Individuals with type 2 diabetes</th>
<th>HIV-Infected Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>7% (^1)</td>
<td>10-15% (^2)</td>
<td>Up to 36% (^3,4)</td>
</tr>
</tbody>
</table>

1. Kessler et al., 2005; Archives of General Psychiatry
2. Geffken et al., 1998; Psychiatric Clinics of North America
3. Bing et al., 2005
4. O’Cleirigh, Magidson… Safren 2015; Psychosomatics
Meta-Analyses: Depression is associated with nonadherence in medical illness

Various medical conditions

- Depression = 3 X greater odds of nonadherence (95% CI = 1.96-4.89) (12 studies)
- No HIV or Diabetes studies

Diabetes

- 47 independent samples
- Depression associated with non-adherence $r = 0.21$, 95% CI 0.17– 0.25; p<.0001

HIV

- 95 independent samples
- Depression associated with non-adherence (p<.0001) ($r = 0.19$; 95% CI = 0.14 to 0.25)


Treating depression by itself may not be enough to change health behavior (adherence): Prospective Trials

- **HIV:** Directly observed fluoxetine in marginally housed urban PLWHA (*Tsai et al, 2013 AJPH*)
  - Improvements in depression, but no difference in adherence / HIV outcomes
  - Author conclusion = need to address both depression and adherence in adherence interventions with pts with depression
CBT-AD development: Conception, pilot, efficacy, and effectiveness

1. Conception and pilot (*CFAR developmental award, Safren*)
2. Randomized pilot trial - patients in HIV care (*R21 MH066660, Safren*)
3. Efficacy study in PLWHA with injection drug use histories (*R01 DA018603, Safren*)
4. Extension to type 2 diabetes (*R01 MH078571, Safren*)
5. Hybrid efficacy/effectiveness efficacy study in patients in HIV care (*R-01 MH084757, Safren*)
6. Extension to multiple comorbidities (*K24K24MH094214, Safren*)
7. Effectiveness and implementation
   - Spanish translation on U.S. Mexico Border (*5R34MH084674, Simoni*)
   - S. Africa with nurse interventionists (pilot complete, NIH R01 proposal pending, Safren, O'Cleirigh, Joska)
   - Telemedicine w/African American women in deep south (*R34MH097588, Kempf*)
   - Web based version (*Cook/Hersch SBIR, 5RC1DA028505*)
Cognitive Behavioral Therapy for Adherence and Depression (CBT-AD)

- Each CBT module for depression integrates adherence counseling

<table>
<thead>
<tr>
<th>Psychoeducation and Motivation</th>
<th>≈1 session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence Training / Life-Steps</td>
<td>≈1 session</td>
</tr>
<tr>
<td>Behavioral Activation</td>
<td>≈2 session</td>
</tr>
<tr>
<td>Adaptive thinking (cognitive restructuring)</td>
<td>≈4 sessions</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>≈2 sessions</td>
</tr>
<tr>
<td>Relaxation Training</td>
<td>≈1 session</td>
</tr>
<tr>
<td>Maintenance &amp; Relapse Prevention</td>
<td>≈1 session</td>
</tr>
</tbody>
</table>
Initial Trial of CBT-AD in HIV (N=43)

2 Arm, cross-over design comparing CBT-AD to ETAU ( "Life-Steps" + provider letter)
- 3-month: CBT-AD resulted in improved
  - Adherence (MEMS=pill cap)
  - Depression (blinded ratings) at three months
- Gains maintained at 6 and 12 months.
- Those who “crossed over” caught up after completing the full intervention
- Plasma Viral load: longitudinal improvements comparing follow-ups to baseline

\[ F(1,42) = 21.94, p< .0001, \text{ Effect size (Cohen } d) = 1.0 \]

\[ F(1,42) = 6.32, p < .02, \text{ Cohen } d = .82 \]
Extension to HIV+ PWIDU in substance use treatment (N=89): Acute outcomes

MEMs based adherence – above:
- HLM analysis of MEMs
- Weeks 0-10
- Greater improvement in treatment versus control condition (slope = 0.887, t(86)= 2.38, p = .02)

Depression:
- Pre-Post Treatment
- Significantly greater improvements in depression in treatment versus control condition
  - MADRS (F(1,79)=6.52, p<.01])
  - Replicated with clinical global impression (F(1,79)=14.77, p<.001) )

R01 DA018603
Safren, O’Cleirigh et al., 2012 – JCCP
Adherence gains maintained for those who did not have ongoing cocaine use despite SU treatment

- HLM analysis:
  - Intervention assignment interacted with cocaine use to predict decline in adherence during follow-up (coeff=-.78, \( t=-2.12, p=.037 \))

- 12 months
  - Cocaine users in CBT-AD = 45.0%
  - Non-users = 72.3%
  - \( t=2.50, p=.018 \)

Traeger, O’Cleirigh, ...Safren et al., 2011 presented
Nueva dia: Spanish translation and cultural adaptation at U.S. Mexico Border (Simoni R34)

- 2 Arm (N=40) feasibility RCT comparing intervention to TAU
- Longitudinal effects:
  - Adherence (electronic) and self-report
  - Depression (BDI), Viral load not significant
  - Initial effect on CD4
- Next step: Mexico City (UNAM) collaboration (faculty and dissertation students)

Simoni, Wiebe, Sauceda, Huh, Sanchez Longoria, Bedoya, Safren, SA.. AIDS and Behavior. 2013
Work in completion - Project “TRIAD”

NIMH funded efficacy trial (PI: Safren)
  R01MH084757-05
3 arm study (2:2:1 randomization)
  ‣ ETAU: Life-Steps plus provider letter
  ‣ CBT-AD
  ‣ Information/supportive psychotherapy

  ‣ Large N (240; 80 randomized per site)
  ‣ 217 (90%) completers

  ‣ 3 site study (MGH, Brown, Fenway)
  ‣ Wide inclusion criteria
  ‣ Incremental Cost effectiveness analysis
CBT-AD Overview

Modules: 12 sessions, each 50 minutes long

1. Psychoeducation and Motivation…………… 1 session
2. Adherence Training / Life-Steps…………… 1 session
3. Activity Scheduling…………………………… 2 sessions
4. Cognitive Restructuring……………………… 4 sessions
5. Problem Solving………………………………… 2 sessions
6. Relaxation Training…………………………… 1 session
7. Maintenance & Relapse Prevention………. 1 session
CBT-AD
Core Components in All Sessions

• Always discuss adherence at the start of every session (bring skills back to adherence)
• Build on material covered in previous sessions
• Based on CBT model for depression
• Flexible and individualized treatment within manualized protocol
• Learn CBT skills versus “advice giving”
• Each CBT skill can be related back to adherence/self-care
**Module 1:**

**Psychoeducation About CBT and Motivational Interviewing**

- CBT Model of Depression
- Motivational Exercise: Pros and Cons of Changing
- Intro to Structure of CBT Sessions

<table>
<thead>
<tr>
<th>CHANGING</th>
<th>NOT CHANGING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRO</strong></td>
<td><strong>NOT CHANGING</strong></td>
</tr>
<tr>
<td>(Working to Improve Depression)</td>
<td>(Keeping Things the Way They Are)</td>
</tr>
<tr>
<td>1. I’ll feel better about myself</td>
<td>1. Maybe nothing’s going to change anyway. I’ll save myself the effort.</td>
</tr>
<tr>
<td>2. I’ll feel less down all the time</td>
<td>2. Things could be worse, and I know I can deal with my life as it is even if it’s not perfect.</td>
</tr>
<tr>
<td>3. I’ll get motivated to change some things in my life</td>
<td></td>
</tr>
<tr>
<td>4. I’ll be healthier</td>
<td></td>
</tr>
<tr>
<td><strong>CON</strong></td>
<td></td>
</tr>
<tr>
<td>1. I think it’s going to be hard work</td>
<td>1. I don’t have fun anymore</td>
</tr>
<tr>
<td>2. You’re going to make me focus on feelings I’d rather avoid</td>
<td>2. My future seems very bleak</td>
</tr>
<tr>
<td>3. It might make me feel worse</td>
<td>3. I should at least try</td>
</tr>
<tr>
<td></td>
<td>4. My health is getting worse and worse.</td>
</tr>
</tbody>
</table>
Module 1: 
**Psychoeducation About CBT and Motivational Interviewing**

- **Cognitive**
  - Negative Automatic Thoughts and Beliefs concerning self, the past, present, future.

- **Behavioral**
  - Decrease in pleasurable activities, motivation, decrease in problem solving

- **Physiological**
  - Sleep, concentration, appetite, fatigue, restlessness
Module 1: Psychoeducation About CBT and Motivational Interviewing

Cognitive
- I should be doing more with my life
- I should see my son more
- I am a horrible person
- Why bother taking my medicine
- I am worthless

Behavioral
- Stay home, Watch TV
- Do Drugs
- Avoid people (sister, friends)

Physiological
- Sleep all the time, body pain

Activity Scheduling

Relaxation Training

Problem Solving

Cognitive Restructuring
Module 1: Psychoeducation About CBT and Motivational Interviewing

Introduction to CBT Session

• Start each session by setting an agenda
• Monitor improvement (Adherence form and CES-D)
• Review of previous sessions and homework
• Follow specific topics in each session
• Many sessions involve assigning skills to practice during the upcoming week (HW)
• All sessions will focus on treatment adherence
• This therapy is different than other forms of therapy.
Module 2: 
**Life-Steps (Adherence Training)**

- Multi-Step Adherence Intervention
- Use of AIM method
- Based on evidence-based, cognitive-behavioral, and problem-solving intervention (Safren, Otto, & Worth, 1999; Cognitive and Behavioral Practice)
Module 2: Life-Steps

Steps

1. Psychoeducation, Motivation for Adherence
2. Getting to Appointments
3. Communication with Treatment Provider
4. Coping with Side Effects
5. Obtaining Medications
6. Medication Schedule
7. Storing Medications
8. Cue Control Strategies
9. Handling Slips
10. Review and Phone Follow-Up
Module 2: Life-Steps

What does adherence look like?

* Twice a day regimen *

Morning Dose

Evening Dose

Drug concentration

Amount of drug in a dose

Amount of drug in a dose

Higher toxicity (side effects)

Therapeutic Drug Level

Threshold of Viral Suppression
Module 2: Life-Steps

... and non-adherence?

* Twice a day regimen *

Drug concentration

8 AM 8 PM 8 PM

Drug resistant virus

Therapeutic Drug Level Achieved

Amount of drug in a dose

Threshold of Viral Suppression

Drug resistant virus
Module 2: Life-Steps

AIM Method

First: Articulate the particular goal
Second: Identify barriers to reaching the goal
Third: Make a plan to overcome the barriers, as well as to develop a backup plan

What are your top five reasons for staying adherent and taking care of your medical illness?

1. 
2. 
3. 
4. 
5. 
Module 2: Life-Steps

Steps

1. Psychoeducation, Motivation for Adherence
2. Getting to Appointments
3. Communication with Treatment Provider
4. Coping with Side Effects
5. Obtaining Medications
6. Medication Schedule
7. Storing Medications
8. Cue Control Strategies
9. Handling Slips
10. Review and Phone Follow-Up
Module 3: Activity Scheduling

**Cognitive**
- I should be doing more with my life
- I should see my son more
- I am a horrible person
- Why bother taking my medicine
- I am worthless

**Behavioral**
- Stay home, Watch TV
- Do Drugs
- Avoid people (sister, friends)

**Physiological**
- Take meds and sleep all the time, body pain
Module 3: Activity Scheduling

• Introduction of activity scheduling in context of chronic illness

• Work with client to identify and schedule pleasurable activities

• Introduction of self-monitoring
# Module 3: Activity Scheduling

## Activity Log

<table>
<thead>
<tr>
<th></th>
<th>Mon</th>
<th>Tues</th>
<th>Weds</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning</td>
<td>Watch TV - 2</td>
<td>CBT - 6</td>
<td>Watch TV - 1</td>
<td>Read paper/crossword -6</td>
<td>Watch TV - 3</td>
<td>Watch TV - 2</td>
<td>Watch TV - 2</td>
</tr>
<tr>
<td>Afternoon</td>
<td>Watch TV - 2</td>
<td>Web Design - 7</td>
<td>Job interview - 1</td>
<td>Walk neighbor’s dog - 6</td>
<td>Web Design - 7</td>
<td>Coffee w/friend - 5</td>
<td>Game on TV - 3</td>
</tr>
</tbody>
</table>
Module 4: Cognitive Restructuring

Cognitive
I should be doing more with my life
I should see my son more
I am a horrible person
Why bother taking my medicine
I am worthless

Behavioral
Stay home, Watch TV
Do Drugs
Avoid people (sister, friends)

Physiological
Sleep all the time, body pain

Module 4:

**Cognitive Restructuring**

- Introduce Technique of “cognitive restructuring”
- Explanation of Automatic Thoughts
- Explanation of Cognitive Distortions
- Introduction to Using Thought Record
- Estimated 2 or 3 sessions
Module 4: Cognitive Restructuring

Cognitive Distortions

Maintain Negative Thinking and Negative Emotions

- All-or-Nothing Thinking
- Mental Filter
- Disqualifying the Positive
- Jumping to Conclusions (Mind Reading, Fortune Telling)
- Magnification/Minimization
- Catastrophizing
- Emotional Reasoning
- “Should” Statements
- Labeling and Mislabling
- Personalization
- Maladaptive Thinking

“Starbucks will open on your block.”

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phone: (216) 271-5800 / e-mail: fn@funnytimes.com
## Module 4: Cognitive Restructuring
### Example Worksheet

<table>
<thead>
<tr>
<th>Time and Situation</th>
<th>Automatic Thoughts</th>
<th>Mood and Intensity</th>
<th>Thinking Error</th>
<th>Rational Response</th>
</tr>
</thead>
</table>
| Stayed home instead of going to a dinner at my sister’s house | I should be doing more with my life  
I should see my son more  
I am a horrible father  
Why bother taking care of myself – taking medicines  
I am worthless | Depressed (90)  
Angry at self (75) | All or nothing thinking  
Should statements  
Labeling | I am trying to do more with my life, and get my son back in my life – it’s hard work  
I have made my mistakes with my son in the past, but I am making progress being consistent and see my son more |
Module 5: Problem Solving

• Depression makes tasks seem overwhelming
• Five Steps of Problem Solving
• Breaking Down Overwhelming Task into Manageable Steps
Module 5:

Problem Solving

Cognitive
- I should be doing more with my life
- I should see my son more
- I am a horrible person
- Why bother taking my medicine
- I am worthless

Behavioral
- Stay home, Watch TV
- Do Drugs
- Avoid people (sister, friends)

Physiological
- Sleep all the time, body pain
Module 5: Problem Solving

Five Steps

1. Articulate the Problem
2. List All Possible Solutions
3. List the Pros and Cons of Each Solution
4. Rate Each Solution
5. Implement the Best Option
Module 5: Problem Solving

Sample worksheet to generate best solution

<table>
<thead>
<tr>
<th>Possible Solution</th>
<th>Pros of Solution</th>
<th>Cons of Solution</th>
<th>Overall Rating of Solution (1-10)</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>
## Problem: Don’t get to see my son

<table>
<thead>
<tr>
<th>Possible Solution</th>
<th>Pros of Solution</th>
<th>Cons of Solution</th>
<th>Overall Rating of Solution (1-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get back at my x-wife by telling the court what she does</td>
<td>I will get back at her, She will get what she deserves</td>
<td>Won’t help my situation May backfire</td>
<td>3</td>
</tr>
<tr>
<td>Use drugs or alcohol whenever I think about it (what doing now)</td>
<td>Feel better right away</td>
<td>Wont help my situation, may make it less likely that court will grant me visitation</td>
<td>3</td>
</tr>
<tr>
<td>Just live with the fact that he won’t ever see me, and grow up without me</td>
<td>Its over – that’s what the situation is Don’t have to do anything</td>
<td>Feel worse, add to depression</td>
<td>2</td>
</tr>
<tr>
<td>Steal him from my x-wife and move to Alabama</td>
<td>Get to have him in my life</td>
<td>Could end up in jail with no visitation</td>
<td>2</td>
</tr>
<tr>
<td>Restart the process of going to court and seeing if I can get visitation back</td>
<td>Its really hard, its risky, they may look at me negatively because of my past</td>
<td>Hopefully it will work</td>
<td>6</td>
</tr>
<tr>
<td>Spy on him and secretly visit him at school</td>
<td>Will get to see him</td>
<td>Could get in trouble, then not get to see him again</td>
<td>2</td>
</tr>
</tbody>
</table>
Module 6: Relaxation Training

Cognitive
- I should be doing more with my life
- I should see my son more
- I am a horrible person
- Why bother taking my medicine
- I am worthless

Behavioral
- Stay home, Watch TV
- Do Drugs
- Avoid people (sister, friends)

Physiological
- Sleep all the time, body pain

Relaxation Training
Module 6: **Relaxation Training**

- **Breathing Retraining**
  - Diaphragmatic Breathing Technique

- **Progressive Muscle Relaxation**

- **Skill can be adapted for use in managing illness symptoms and medication side effects**

- **Resource:** [http://cmhc.utexas.edu/mindbodylab.html](http://cmhc.utexas.edu/mindbodylab.html)
Improvement in CBT

What many clients expect progress to look like

What progress usually looks like

Sessions

Progress
Thank you

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  • Dr. Steve Safren
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  • Pamela Handelsman
  • Luis Serpa
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  • Jared Israel
  • Jackie Bullis

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  • Fenway Health
  • The Miriam Hospital
  • Cape Town Research Team
  • University of Miami
  • King’s College Research Team
  • Harare Research Team

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