Spirituality, Mindfulness and the Treatment of Mental Disorders

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Talk Outline

- Definitions

- Mindfulness and Psychotherapy Research
  - Meta-Analytic Reviews
  - Depression Studies

- Applying Mindfulness to Psychotherapy
  - Key strategies and methods
  - Applications
    - Dialectical Behavioral Therapy (DBT)
    - Mindfulness Based Cognitive Therapy for Depression

- Toward a Neurobiology of Mindfulness in the Treatment of Mental Disorders
Definitions / Basic Concepts
Definitions of Mindfulness

- “Facing the bare facts of experience, seeing each event as though occurring for the first time”
  Goleman, 1988

- “Keeping one’s consciousness alive to the present reality”
  Hanh, 1991

- “Paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally”
  Kabat-Zinn, 1994

- “Awareness of present experience with acceptance”
  Germer, 2005
Relevance of Mindfulness to Mental Health Treatment

- Fundamental to the clinician-patient relationship
- Expands “mind-brain” paradigm in clinical care
- Applicable to clinical encounters
  - Integrates into many different theoretical approaches
  - Amplifies therapeutic engagement
  - Practical, portable and “user-friendly”
- Focuses on “meta-cognitive awareness”
- Relates back to basic and translational research (especially regarding new models of illness)
- Caveat: “Not applicable to everyone, everywhere”
Techniques for Experiencing Mindfulness

- **Formal practices**
  - Sitting meditations (attending to breathing, body sensations, sounds, thoughts, etc.)
  - Movement meditations (walking medication, mindful yoga stretches)
  - Group exchange (led exercises, guided discussion of experience)

- **Informal practices**
  - Mindful activity (eating, cleaning, driving, etc.)
  - Structured exercises (self-monitoring, problem-solving, etc.)
  - Mindful reading (esp. poetry)
  - Mini meditations (e.g. “3 minute breathing space”)

Review of the Literature

- Screened 727 papers, selected 39 studies involving 1,140 participants treated for a range of conditions (anxiety, depression, cancer, pain, eating disorders)
- Overall, moderate effect size: $g = 0.63$ for anxiety symptoms and $0.59$ for depressive symptoms
- Effect sizes for patients with depression ($g=0.97$) & with anxiety disorders ($g=0.95$)
### Mindfulness and Psychotherapy Research

Effect sizes of MB therapy on anxiety symptoms

<table>
<thead>
<tr>
<th>Disorder</th>
<th># studies</th>
<th>Range g</th>
<th>Average g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>7</td>
<td>0.48 - 2.13</td>
<td>0.97</td>
</tr>
<tr>
<td>Pain</td>
<td>5</td>
<td>0.21 – 0.64</td>
<td>0.44</td>
</tr>
<tr>
<td>Cancer</td>
<td>8</td>
<td>0.36 – 1.25</td>
<td>0.63</td>
</tr>
<tr>
<td>Medical</td>
<td>10</td>
<td>0.30 – 1.07</td>
<td>0.61</td>
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Mindfulness and Psychotherapy Research

Funnel plot of precision by Hedges’s $g$ for anxiety measures
### Mindfulness and Psychotherapy Research

**Effect sizes of MB therapy on depressive symptoms**

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<tr>
<td>Anxiety</td>
<td>6</td>
<td>0.56 - 0.92</td>
<td>0.75</td>
</tr>
<tr>
<td>Depression</td>
<td>4</td>
<td>0.63 – 1.52</td>
<td>0.95</td>
</tr>
<tr>
<td>Pain</td>
<td>6</td>
<td>0.47 – 0.71</td>
<td>0.51</td>
</tr>
<tr>
<td>Cancer</td>
<td>7</td>
<td>0.15 – 0.67</td>
<td>0.45</td>
</tr>
<tr>
<td>Medical</td>
<td>9</td>
<td>0.25 – 1.01</td>
<td>0.58</td>
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Mindfulness and Psychotherapy Research

Funnel plot of precision by Hedges’s $g$ for depression measures
“Mindfulness-Based Cognitive Therapy for Psychiatric Disorders: A Systematic Review” (Chiesa & Serretti 2010)

- Screened 286 papers, examined 41 studies and excluded 25 for various reasons (e.g. lack of control group).
- Analyzed a total of 16 studies involving 462 participants (235 in experimental groups and 227 in control groups) treated for anxiety disorders and depressive disorders using a variety of outcome measures (e.g. differences in 1 year relapse and recurrence rates, changes in baseline measures of depression and anxiety)
Major findings

- MBCT in adjunct to usual care was significantly better than usual care alone for reducing major depression relapses in patients with 3 or more episodes (4 papers)
- MBCT plus gradual discontinuation of maintenance of antidepressant medication was associated with similar relapse rates at 1 year as compared with continuation of maintenance antidepressants (1 paper)
“Prevention of Recurrence in Major Depression” (Teasdale, et al, 2000)

- 145 recovered recurrently depressed patients
- Randomized to TAU or MBCT
- Relapse/recurrence assessed over 60 weeks
- Patients with 3 or more previous episodes of depression had significantly reduced risk
  - 37% relapse in MBCT vs. 66% in TAU (p < 0.005)
- No differences between groups in patients with 2 episodes of depression
“MBCT in Major Depression Replication Study” (Ma, et al, 2004)
- 75 recovered recurrently depressed patients
- Randomized to TAU or MBCT
- Relapse/recurrence assessed over 60 weeks
- Patients with 3 or more previous episodes of depression had significantly reduced risk
  - 36% relapse (10/28) in MBCT vs. 78% (21/27) in TAU (p = 0.002)
- No differences between groups in patients with 2 episodes of depression
“MBCT to Prevent Relapse in Recurrent Depression” (Kuyken, et al, 2008)

- 123 recovered recurrently depressed patients
- Randomized to antidepressant maintenance (N = 62) or MBCT (N = 61) with slow taper of antidepressant
- Relapse/recurrence assessed over 78 weeks
- No differences in relapse rates between groups at 1 year (29/61 vs. 37/62)
- MBCT group reported significantly lower HAMD and BDI scores and higher improvement is functional measures at endpoint (p ≤ 0.05)
“Antidepressant Monotherapy vs. Sequential Pharmacotherapy and MBCT, or Placebo for Relapse Prophylaxis in Recurrent Depression” (Segal, et al, 2010)

- 160 patients with 2 or more episodes of depression
- Entered algorithm-informed antidepressant treatment
- N=84 (52.5%) achieved remission and were assigned 1 of 3 study conditions: antidepressant medication, MBCT or placebo
- Relapse/recurrence assessed over 18 months
- Patients with “unstable remission” patients in both medication and MBCT group had 73% decrease in hazard for relapse (p=0.03)
- No differences among the groups in patients with “stable remission”
Applying Mindfulness to Psychotherapy Practice
Mindfulness Oriented Psychotherapy
(Germer, Siegel, Fulton, 2005)

- Therapist Mindfulness
- Mindfulness Informed Psychotherapy
- Mindfulness Based Psychotherapy
Non-judging
Non-striving
Non-attachment to outcome
Acceptance
Patience
Trust
Openness (Beginner’s mind)
Curiosity
Letting Go
Gentleness
Non-reactivity
Friendliness
Mindfulness and the Therapist

- *Increases attention* – trains the mind to sustain attention and to switch attentional focus
- *Increases empathy* - is more predictive of patient outcome than technique or theoretical orientation
- * Increases self-compassion* – therapists who are less compassionate toward themselves are less compassionate toward their patients
- *Increases affect tolerance* – therapists experience emotions as transitory, received without fear – modeling for patients how to “be with emotion”
Mindfulness Informed Psychotherapy (Shapiro & Carlson, 2009)

- Therapy informed by insights from meditation, mindfulness practice and Buddhist psychology
- Formal mediation and mindfulness practices are not taught to patients – therapist is vehicle
- Books to help guide:
  - Epstein’s *Thoughts Without a Thinker*, 2004
  - Kornfield’s *The Wise Heart*, 2008
**Mindfulness Informed Psychotherapy**  
(Shapiro & Carlson, 2009)

- Basic task: “Accepting what is”
- Basic insight: Suffering arises when we resist what is
- \[ S = P \times R \]  
  Suffering = Pain \times Resistance
- Mindfulness offers a way of openly relating to all of experience. We face and embrace everything that arises instead of resisting or running away from it
Mindfulness Informed Psychotherapy
(Shapiro & Carlson, 2009)

R.A.I.N

R = recognize what is here
A = allow and accept it
I = investigate it with intimate attention
N = non-identified awareness => reperceiving
Mindfulness-Based Therapies

- Mindfulness-Based Stress Reduction (Kabat-Zinn, 1990)
- Dialectical Behavioral Therapy (Linehan, 1993)
- Mindfulness-Based Cognitive Therapy (Segal, Williams & Teasdale, 2002)
- Mindfulness-Based Treatment for Insomnia (Ong, Shapiro, Manber, 2007).
- Mindfulness-Based Relationship Enhancement (Carson et al, 2004)
- Mindfulness-EAT for Binge Eating (Kristeller Hallett, 1999)
- Individual therapy, without manualized intervention
Dialectical Behavioral Therapy
(Linehan, 1993)
First developed by Marsha Linehan to treat patients with Borderline Personality Disorder (BPD), especially those with prominent suicidality and self-injurious behavior.
Biosocial Theory of BPD

Biological Emotional Dysregulation

Invalidating Environment

Pervasive Emotion Dysregulation
Core Strategies in DBT

Problem Solving

Validation

Dialectics
Balance the Skills

- Mindfulness
- Emotion Regulation
- Interpersonal Effectiveness
- Distress Tolerance
Another balance of skills

- Mindfulness
- Distress Tolerance
- Emotion Regulation
- Interpersonal Effectiveness
How do the skills work?

Self-Regulation

ACCEPTANCE

CHANGE
DBT Format

- 5 month cycle
- Each 4 week module followed by 2 weeks of mindfulness module
- 4 miss rule!
- 1st session contract/commitment focus
- Trainers: DBT text, Skills Manual, Snacks/coffee, handouts
- Patients: Folder, Pens/Paper, Diary Cards, HW sheets
The DBT Skills Modules

- Mindfulness (2 weeks)
- Distress Tolerance (4 weeks)
- Interpersonal Effectiveness (4 weeks)
- Emotion Regulation (4 weeks)
CORE MINDFULNESS SKILLS
Mindfulness States of Mind

Reasonable Mind

WISE MIND

Emotion Mind
MINDFULNESS
The “WHAT” Skills

- Observe
- Describe
- Participate
MINDFULNESS
The “HOW” Skills

- Non-judgmentally
- One-mindfully
- Effectively
MINDFULNESS

- Skills taught in lecture format
- In-session reinforcement of skills using exercises: “Art project”, Dancing, Guided imagery, Observing the breath
- Skills reinforced in individual therapy sessions
DISTRESS TOLERANCE SKILLS

Distracting Skills:

“Wise Mind ACCEPTS”

Activities
Contributing
Comparisons
Emotions
Pushing Away
Thoughts
Sensations
DISTRESS TOLERANCE SKILLS

Self-Soothing Skills: Using the Five Senses

- Vision
- Hearing
- Smell
- Taste
- Touch
DISTRESS TOLERANCE SKILLS

“IMPROVE the Moment”

_Imagery
_Meaning
_Prayer
_Relaxation
_One thing at a time
_Vacation
_Encouragement
DISTRESS TOLERANCE SKILLS

PROS and CONS

- Of tolerating distress
- Of NOT tolerating distress
Guidelines for Accepting Reality

- Observing your Breath
- Half-smiling
- Awareness
- Radical Acceptance: Turning the mind, Willingness — difficult concept to grasp
MB-CT for Depression
(Segal, Williams & Teasdale, 2002)
Integrates the mindfulness training of MBSR with cognitive therapy techniques to prevent consolidation of ruminative, negative thinking patterns that contribute to depressive relapse.

Cognitive therapy techniques include:
- Psycho-education about depression symptoms and automatic dysfunctional thoughts
- Exercises designed to demonstrate the cognitive model
- Identifying activities that provide feelings of mastery and/or pleasure
- Creating a specific relapse prevention plan
# MB-CT for Depression

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<th>MBCT Session Themes</th>
<th>Mindfulness Skill</th>
<th>Assoc. Practices</th>
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| “Automatic pilot” (acting without conscious awareness) | - Awareness of automatic pilot  
- Awareness of body | - Mindful eating  
- Body scan |
| Dealing with barriers                      | - Awareness of how chatter of the mind influences feelings and behaviors | - Body scan  
- Short breathing medication |
| Mindfulness of the breath                  | - Awareness of breath and body                         | - Breathing meditation  
- 3-minute breathing space  
- Mindful yoga |
## MBCT for Depression

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| Staying present     | □ Awareness of attachment and aversion | □ Breathing meditation  
□ Working with intense physical sensations |
<p>| Acceptance          | □ Acceptance of thoughts and feelings as fleeting events | □ Explicit instructions to practice acceptance are in the breathing meditation/exercises |
| Thoughts are not facts | □ Decentering or re-perceiving | □ Sitting meditation (awareness of thoughts) |</p>
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<td>How can I best take care of myself</td>
<td> Awareness of signs of relapse; develop more flexible, deliberate responses at time of potential relapse</td>
<td> 3-minute coping breathing space</td>
</tr>
<tr>
<td>Dealing with future depression</td>
<td> Awareness of intention</td>
<td> Identifying coping strategies to address barriers to maintaining practice</td>
</tr>
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Settle into a comfortable, balanced sitting position on a chair or floor in a quiet room.
Keep your spine erect. Allow your eyes to close.
Bring your awareness to the sensations of contact wherever your body is being supported. Gently explore how this really feels.
Become aware of your body’s movements during breathing, at the chest, at the abdomen.
As the breath passes in and out of the body, bring your awareness to the changing sensations at the abdominal wall.
Maintain this awareness throughout each breath and from one breath to the next.
Allow the breath simply to breathe, without trying to change or control it. Just noticing the sensations that go with every movement.
As soon as you notice your mind wandering, bring your awareness gently back to the movement of the abdomen. Do this over and over again. Every time, it is fine. It helps the awareness to grow.
Be patient with yourself.
After 15 minutes or so, bring the Awareness gently back to your whole body, sitting in the room.
Open your eyes. Be ready for whatever’s next.
Exercise to Help Cognitive Defusion

This exercise is to help you see the difference between looking at your thoughts and looking from your thoughts. Imagine you are on the bank of a steadily flowing stream, looking down at the water. Upstream some trees are dropping leaves, which are floating past you on the surface of the water. Just watch them passing by, without interrupting the flow. Whenever you are aware of a thought, let the words be written on one of the leaves as it floats by. Allow the leaf to carry the thought away. If a thought is more of a picture thought, let a leaf take on the image as it moves along. If you get thoughts about the exercise, see these too on a leaf. Let them be carried away like any other thought, as you carry on watching.
Exercise to Help Cognitive Defusion

At some point, the flow will seem to stop. You are no longer on the bank seeing the thoughts on the leaves. As soon as you notice this, see if you can catch what was happening just before the flow stopped. There will be a thought that you have ‘bought’. See how it took over. Notice the difference between thoughts passing by and thoughts thinking for you. Do this whenever you notice the flow has stopped. Then return to the bank, letting every thought find its leaf as it floats steadily past.
Toward a Neurobiology of Mindfulness and Its Role in Treating Mental Disorders
Gray Matter Increases from Mindfulness Meditation

- **R** anterior insula (area involved with interoceptive awareness) **L** temporal gyrus and **R** hippocampus (Hozel, 2008)
- **R** orbito-frontal cortex, **R** thalamus, **R** hippocampus and **L** inferior temporal gyrus - all implicated in emotional regulation and response control (Luders, 2009)
- **L** hippocampus, posterior cingulate cortex, temporoparietal junction and cerebellum (Hozel, 2011)
[11]C-raclopride binding potential images in a participant during (A) attention and (B) meditation.

Reduced [11]C-raclopride binding potential in ventral striatum is evidence of increased endogenous dopamine release during meditation.

Cortical areas thicker in meditators

Lazar et al., 2005
8 Weeks of Mindfulness Training Results in Greater Activity in LPFC and Insula (Farb et al., 2007)
On fMRI, activation of prefrontal cortex is associated with mindfulness

MPFC = medial prefrontal cortex; VMPFC = ventromedial prefrontal cortex; RVLPFC = right ventrolateral prefrontal cortex.

Chronic Stress and Depression

HPA axis theory of depression – stress plays a key role

Role of neuromodulation in health and disease (e.g. depression as a dysregulation of control mechanisms)

Cognitive distortion theory of depression – critical role in maintaining depressive episode and in predicting relapse
Clinical depression is associated with morphological changes in the brain

(R. Sapolsky and B. McEwen)

Chronic stress reduces neurotrophic support for sustaining morphological integrity

(Y. Sheline)

Chronic antidepressant treatments increase the mobilization of neurotrophins (BDNF) and neurogenesis that helps to regenerate normal morphology and function
Dysregulated Circuits in Depression
(Mayberg, 2003)
Dysregulated Circuits in Depression (Mayberg, 2003)
References: Articles


References: Books


Acknowledgements

- Michael Baime, M.D.
  - Overview of Mindfulness and MBSR
- Shauna Taylor, Ph.D.
  - Applying Mindfulness to Psychotherapy Practice
- Melissa DeJesus, M.D. and Mee Park, M.D.
  - Dialectical Behavioral Therapy
- Chris Mace, Ph.D.
  - Mindfulness-Based CBT