Relationships among formal mindfulness practice, mindfulness skills, worry, and quality of life

Across an acceptance-based behavior therapy for generalized anxiety disorder

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Disclosure

- Principle Investigators:
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  - Susan Orsillo, Suffolk University

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Mindfulness

- Nonjudgmental awareness of present-moment experience
  - Awareness, attention to whatever arises
  - Allowing, letting be, non-changing, opening to

- Increasingly applied in mindfulness- and acceptance-based clinical interventions:
  - MBSR, MBCT, ACT, DBT, MBRP, etc.

- Mindfulness as practices & skills
Mindfulness: Skills

- **Skills** = the ability to engage mindfully in daily life
- Difficult to measure: self-report
- Five Facet Mindfulness Questionnaire (Baer et al. 2006)
  - **Describe:** “I’m good at finding the words to describe my feelings”
  - **Observe:** “I pay attention to physical experiences, such as the wind in my hair or the sun on my face”
  - **Nonreact:** “I watch my feelings without getting carried away by them”
  - **Nonjudge:** “I tell myself I shouldn’t be thinking the way I’m thinking”
  - **Act with Awareness:** “it seems I’m ‘running on automatic’ with little awareness of what I’m doing”
Mindfulness: Skills

- Higher levels of and increases in skills (FFMQ, MAAS, FMI, KMS, etc.) related to important clinical health constructs
  - Psychological symptoms, perceived stress, psychological well-being, self-compassion, anxiety, depression, thought suppression, emotion regulation difficulties, experiential avoidance… (Baer et al., 2006; Carmody & Baer, 2008)

- Learned by participants with diverse clinical presenting problems: how are skills learned?
Mindfulness: Practice

- If mindfulness is a skill, it can be learned, and skills will improve with practice

- **Formal**: setting aside time
  - sitting, walking, body-scan, mindful yoga

- **Informal**: purposeful application to daily life activities
  - dishes, driving, taking the bus, bathing

- **Mixed relationship** between amount of formal between-session practice and outcomes (Vettese et al. 2009):
  - Meta-analysis; MBSR studies;
  - Cross-sectional: 13 of 24 studies found positive relationships
Acceptance Based Behavior Therapy

- Individual therapy; 16 sessions

- GAD (uncontrollable worry, difficulty concentrating, irritability, tension, sleep disturbance, fatigue, causes distress or impairment)

- Core ABBT components
  - Teach mindfulness skills (flexibly)
    - Increase awareness, acceptance, decentering
  - Decrease experiential avoidance
  - Increase valued action
General Question

- Does practicing formal mindfulness early in treatment lead to increases in mindfulness skills, which then predict clinical improvements for GAD?

- Longitudinal design: temporal precedence
  - Practice → skills, outcomes
Hypotheses

1. Higher frequency of formal mindfulness practice across the first four sessions would predict greater increases in mindfulness skills across treatment.

2. Higher frequency of formal mindfulness practice across the first four sessions of therapy would predict greater improvements in worry and quality of life across treatment.
Hypotheses

3. Larger trajectories of change in mindfulness skills would predict greater improvements in worry and quality of life across treatments.

4. Increases in the rate of change in mindfulness skills would mediate the relationship between frequency of mindfulness practice across the first four sessions of treatment and changes in symptom variables across treatment.
Mediation Model + Temporal Precedence

1. Early Formal Practice
2. Skills change
3. Outcome change
Measures

- Frequency of formal practice across sessions 2-4
  - Weekly in session, client report
    - Current sample: mean 18.5 (SD=8.9) total practices or about 6.2 per week

Pre, Mid-4, 8, 12, Post

- Mindfulness Skills: FFMQ  Baer et al. (2006)
- Quality of Life: QOLI  Frisch, Cornwell, Villanueva, & Retzlaff (1992)
  - 16 life domains: Importance x Satisfaction
Sample

- 33 people with GAD (principal diagnosis)

- 77% White; 66% female; 94% heterosexual; mean age = 34; mean # of additional diagnoses = 1.07 (Most common: SAD, depressive disorders, OCD)
Latent Growth Curve Modeling

- SEM method for calculating estimates of longitudinal change
- Takes into account individual change variation
- Mplus software
- Computes missing data through maximum likelihood replacement
Results: Hypothesis 1 & 2

Step 1: Unconditional Models

Slope of change between time points (m4, m8, m12, Post)

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>Standard Error</th>
<th>z-value</th>
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</thead>
<tbody>
<tr>
<td>FFMQ (n=33)</td>
<td>6.90</td>
<td>0.71</td>
<td>9.68***</td>
</tr>
<tr>
<td>QOLI (n=33)</td>
<td>0.41</td>
<td>0.08</td>
<td>5.47***</td>
</tr>
<tr>
<td>PSWQ-PW (n=32)</td>
<td>-3.96</td>
<td>0.79</td>
<td>-4.66***</td>
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- Significant improvement between time points across treatment (m4 to Post)
- Unstandardized: e.g. Skills increased 6.9pts on FFMQ every 4 sessions
Results: Hypothesis 1 & 2

Step 2: Conditional Models:
Practice added as time-invariant predictor of slopes

<table>
<thead>
<tr>
<th>Measure</th>
<th>Beta</th>
<th>z-value</th>
<th>p-value</th>
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<tbody>
<tr>
<td>FFMQ (n=31)</td>
<td>0.33</td>
<td>0.70</td>
<td>0.48</td>
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<tr>
<td>QOLI (n=31)</td>
<td>-0.12</td>
<td>-0.28</td>
<td>0.78</td>
</tr>
<tr>
<td>PSWQ-PW (n=30)</td>
<td>-0.31</td>
<td>-0.92</td>
<td>0.36</td>
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• Early frequency of practice did not predict magnitude of change in skills, quality of life, or worry

• Hypotheses 1 and 2 were unsupported
Results: Hypothesis 3 (does skill change predict outcome change?)

Residual Gains: regression of m4 on Post scores
- Gives change score above and beyond variation in Post scores predicted by m4 scores

Correlations between residual gains of FFMQ and outcomes

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<thead>
<tr>
<th></th>
<th>Pearson’s r</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>QOLI (n=30)</td>
<td>0.57</td>
<td>.001</td>
</tr>
<tr>
<td>PSWQ-PW (n=21)</td>
<td>-0.54</td>
<td>.01</td>
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• Hypothesis 4 was unable to be tested
Discussion

- Frequency of early formal mindfulness practice did not predict observed improvements in mindfulness skills, worry, and QOLI

- Mindfulness skill increases related to improvements in worry and quality of life
  - mindfulness skill gain is clinically beneficial for people with GAD
Why not formal practice?

- Low power: Type II error?
- Did not measure duration (minutes) of practice
- No measure of quality of practice
  - Meditation as experiential avoidance?
- ABBT: many avenues of learning mindfulness
  - informal practice, psychoeducation, metaphors, therapist modeling, valued action
- Cultural/worldview congruence, prior experience, interactions?
Limitations & Future Directions

- Imperfect measurement of practice, skills
  - Did not measure informal practice
- No measure of quality of practice
- Mindfulness with culturally, racially, and socio-economically diverse populations
- Mechanisms of mindfulness; specific facets of mindfulness skills
- How to “optimize” mindfulness skill acquisition?
Conclusion

- Mindfulness skills may be an important target in treatment for people with GAD
  - Related to decreased worry, increased quality of life
  - Not directly related to frequency of early formal practice
  - Indicates multiple (possibly interacting) ways of learning mindfulness skills
  - Provide flexibility for clients’ backgrounds, life contexts, and preferences


