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

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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

- <u>Skills</u> = the ability to engage mindfully in daily life
- **Difficult to measure: self-report**
- **Five Facet Mindfulness Questionnaire (Baer et al. 2006)**
  - <u>Describe</u>: "I'm good at finding the words to describe my feelings"
  - <u>Observe</u>: "I pay attention to physical experiences, such as the wind in my hair or the sun on my face"
  - <u>Nonreact</u>: "I watch my feelings without getting carried away by them"
  - <u>Nonjudge</u>: "I tell myself I shouldn't be thinking the way I'm thinking"
  - <u>Act with Awareness</u>: "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**

- <u>**Formal**</u>**: setting aside time**
  - **sitting, walking, body-scan, mindful yoga**

- <u>**Informal**</u>**: 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
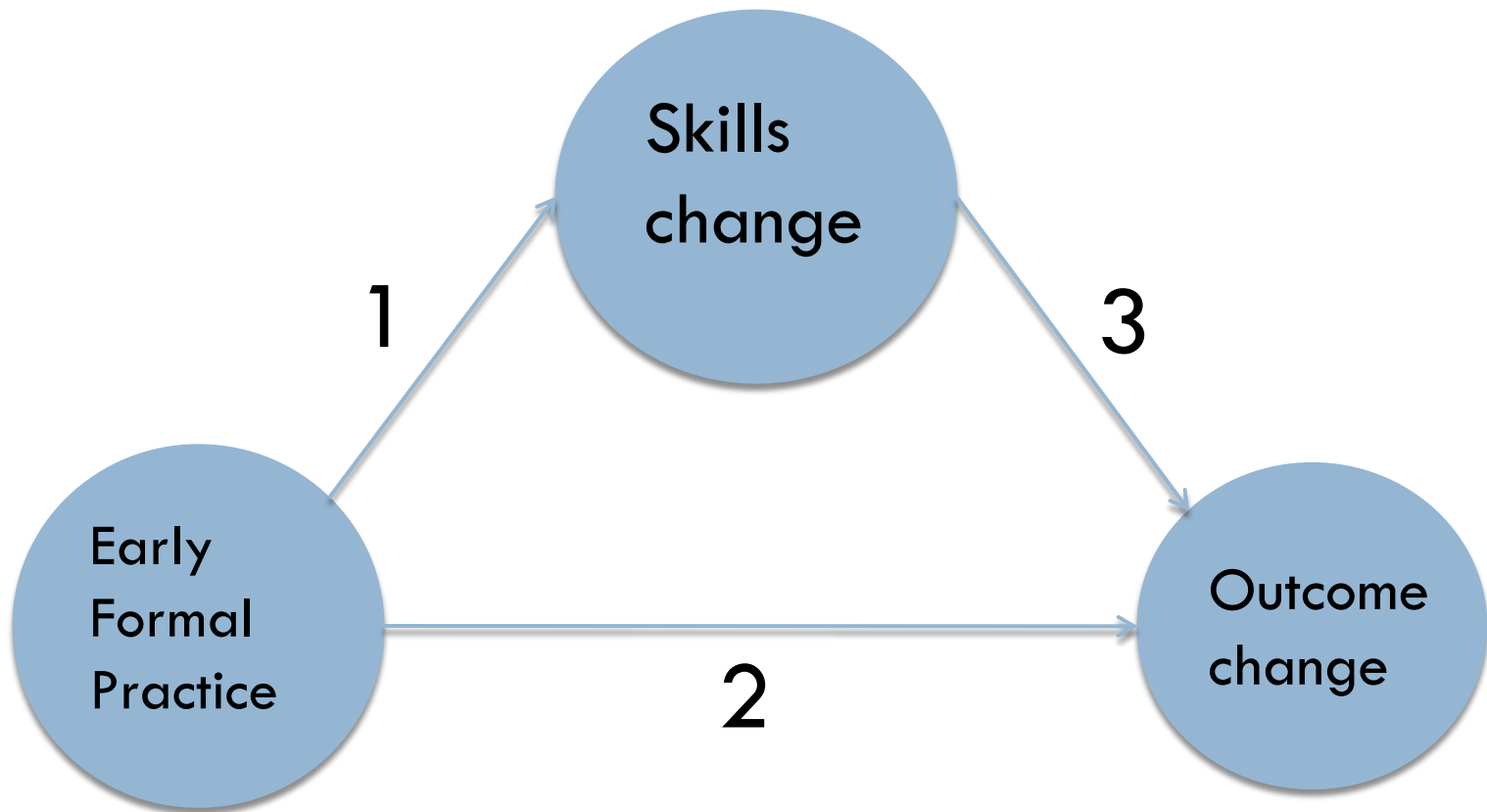
■ Practice → skills, outcomes

Hypotheses

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

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

Hypotheses

3. **Larger trajectories of change in <u>mindfulness skills</u> would predict greater improvements in <u>worry</u> and <u>quality of life</u> across treatments**

4. **Increases in the rate of change in <u>mindfulness skills</u> would *mediate* the relationship between frequency of <u>mindfulness practice</u> across the first four sessions of treatment and changes in <u>symptom variables</u> across treatment**

Mediation Model + Temporal Precedence

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**
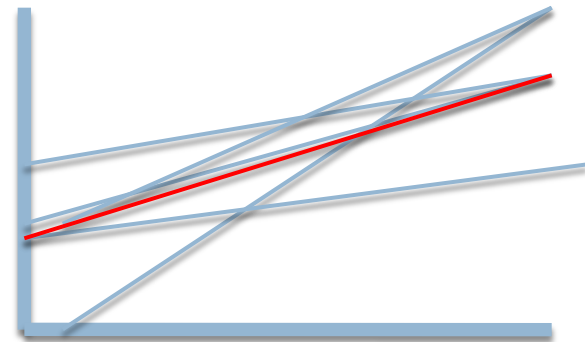
Pre, Mid-4, 8, 12, Post

- **Mindfulness Skills: FFMQ** Baer et al. (2006)

- **Worry: PSWQ-PW** Stober & Bittencourt (1998)

- **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)

	Estimate	Standard Error	z-value
FFMQ (*n*=33)	6.90	0.71	9.68***
QOLI (*n*=33)	0.41	0.08	5.47***
PSWQ-PW (*n*=32)	-3.96	0.79	-4.66***

- **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

	Beta	*z*-value	*p*-value
FFMQ (*n*=31)	0.33	0.70	0.48
QOLI (*n*=31)	-0.12	-0.28	0.78
PSWQ-PW (*n*=30)	-0.31	-0.92	0.36

- **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

	Pearson's *r*	*p*-value
QOLI (*n*=30)	0.57	.001
PSWQ-PW (*n*=21)	-0.54	.01

•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**

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