

Mindfulness for Migraine: Recent Clinical Trial Evidence

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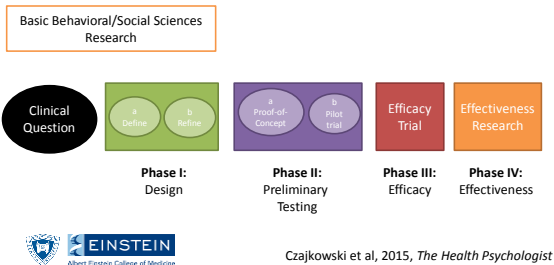
What is a behavioral intervention?

- Biofeedback
 - Relaxation Training
 - Cognitive behavioral therapy
-
- Conversation about medication during office visit
 - Frequency and mode of administration
 - Interactions with staff in billing department
 - Commute to office
 - Cost of care



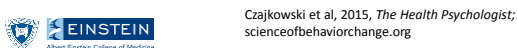
Development and Testing of Behavioral Interventions

- ORBIT Model

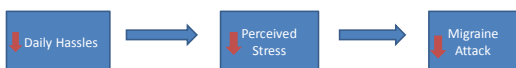


Development and Testing of Behavioral Interventions

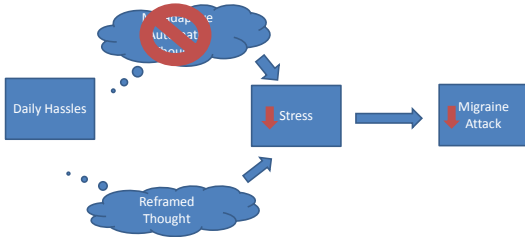
- ORBIT and SOBC models both recommend evaluating the theoretical pathway systematically before large-scale efficacy trials



First Wave: Behavior Change



Second Wave: Cognitions

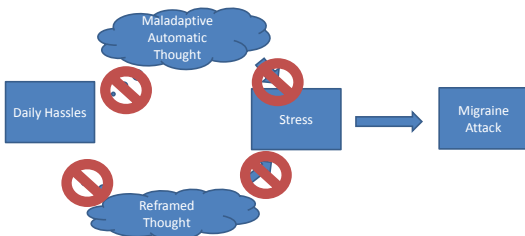


Third-Wave Therapies

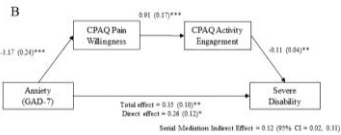
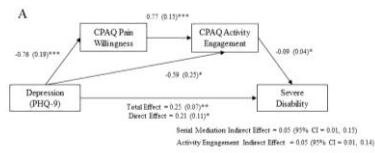
- Mindfulness
 - Paying Attention
 - Present moment
 - Non-judging → Acceptance
- Acceptance



Third Wave



Acceptance, Psychiatric Symptoms and Disability



Seng, Kuka, Smitherman & Buse, 2018, *Headache*

Bronx MBCT for Migraine Trial

- Aim: Develop and evaluate a migraine-specific MBCT protocol in people with CM and EM
 - Primary hypothesis: The MBCT group will demonstrate larger decreases in migraine-related disability compared to WL/TAU
 - Secondary hypotheses:
 - Compared to the WL/TAU group, the MBCT group will demonstrate larger
 - Decreases in attack frequency and severity (secondary outcomes)
 - Increases in mindfulness (mechanism)
 - Decreases in stress (mechanism)
 - These effects will be stronger in CM than EM



Treatment Development

- Adapted existing protocols for chronic head pain and depression
- Migraine Experience
 - **Treatment rationale:** chronic disease with episodic attacks
 - **Migraine-specific content:** migraine phases, modifiable factors contribute to migraine onset
 - Replaced yoga poses that could contribute to neck strain from pain protocol with **gentle movement** from depression protocol
 - Highlighted **recognizing aversion** skills from depression protocol
- Treatment Expectations
 - **Individual** format
 - 120 min weekly groups replaced with **75 min** weekly individual sessions
 - Maintained 20-30 min **guided mindfulness practice** in each session



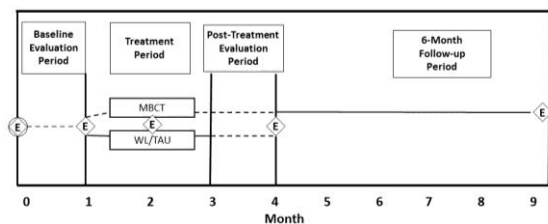
Singer, Buse & Seng, 2017

Participant Recruitment

- Referrals from neurology clinics and advertisements in the NYC area
- Inclusion
 - ICHD-3 beta headache diagnosis of migraine
 - Aged 18-65
 - Diary confirmed 6 headache days/month with at least one discreet migraine attack and 4 waking hours pain-free
 - Ability to read English
 - Capacity to consent.
- Exclusion
 - New preventative pain treatments (four weeks of baseline)
 - Severe psychiatric illness that would interfere with participation



Study Design



Baseline Participants

- Diary-confirmed Migraine or Probable Migraine
- Patient Characteristics
 - Mean Age = 39.67 (SD = 11.59)
 - 66 (91.7%) Female
 - 58 (80.6%) White
 - 11 (15.3%) Hispanic/Latino/a
- Clinical Characteristics
 - MIDAS Mdn = 40.5 (IQR = 22.0 – 59.75)
 - MIDAS A (Frequency/3 mo) M = 29.4 (SD = 14.8)
 - MIDAS B (Severity 0-10) M = 7.24 (SD = 1.8)
 - HDI M = 50.2 (SD = 19.2)



Mindfulness, Acceptance and Clinical Outcomes

	Mindfulness (FFMQ)		Acceptance (CPAQ)	
	Correlation	p-value	Correlation	p-value
HDI	-.535	<.001	-.688	<.001
MIDAS (ps presented)	.030	.805	-.273	.021
MIDAS A (Frequency)	-.013	.712	-.267	.024
MIDAS B (Severity)	.069	.563	-.275	.020
PROMIS-Anxiety	-.405	<.001	-.333	.004
PROMIS-Depression	-.338	<.001	-.479	<.001



Effect of Mindfulness Practice on Stress

- N = 18 in MBCT Group
- Daily diaries for 3 months
 - 2 months during MBCT, 1 month follow-up.
 - Perceived Stress Scale (4-item)
 - Mindfulness practice (# minutes)
- Mixed models
 - Mindfulness practice on PSS

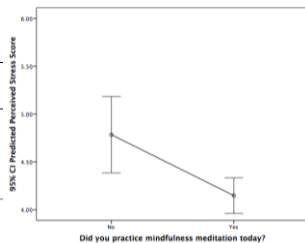


Singer, 2017

Mindfulness Practice Associated with Lower PSS

Linear Mixed Models for Repeated Measures (Days): Meditation Practice and Same Day Perceived Stress Adjusted for Previous Day's Stress

PSS Same Day with PSS Previous Day			
	B	SE	p
Fixed Effects			
Intercept	2.80	.43	<.001
Day	-.003	.002	.182
Perceived Stress (previous day)	.37	.03	<.001
Mindfulness Practice			
Did not (0)	.34	.15	.020
Did Practice (1)			



Necessary Future Directions

- Clarifying relationships between behavioral risk factors and biomedical risk factors in migraine broadly
- Clarifying relationships between mindfulness training and relevant behavioral risk factors in migraine
- Improving our "Assays" for both risk factors and outcomes in migraine (SOBC language)

