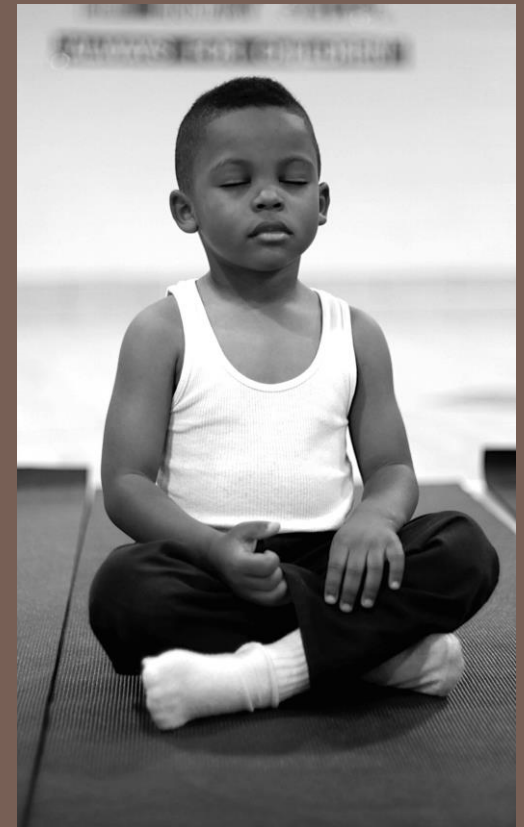


Mindfulness and School Health

Tamar Mendelson, PhD
Department of Mental Health



School Health Interdisciplinary Program Conference
August 7, 2015

Agenda

- The mindful revolution
- Mindfulness-based interventions
- Mindfulness and urban youth
- RAP Club
- The Holistic Life Foundation

Mindfulness for Everyone

- “Mindfulness meditation can boost your career and help you get a job”
The Guardian, April 21, 2015
- “Will meditation be the big new workplace trend of 2015?”
Upstart Business Journal, January 2, 2015
- “The Seahawks think mindfulness gives them an edge in the Super Bowl”
MBG, January 29, 2015

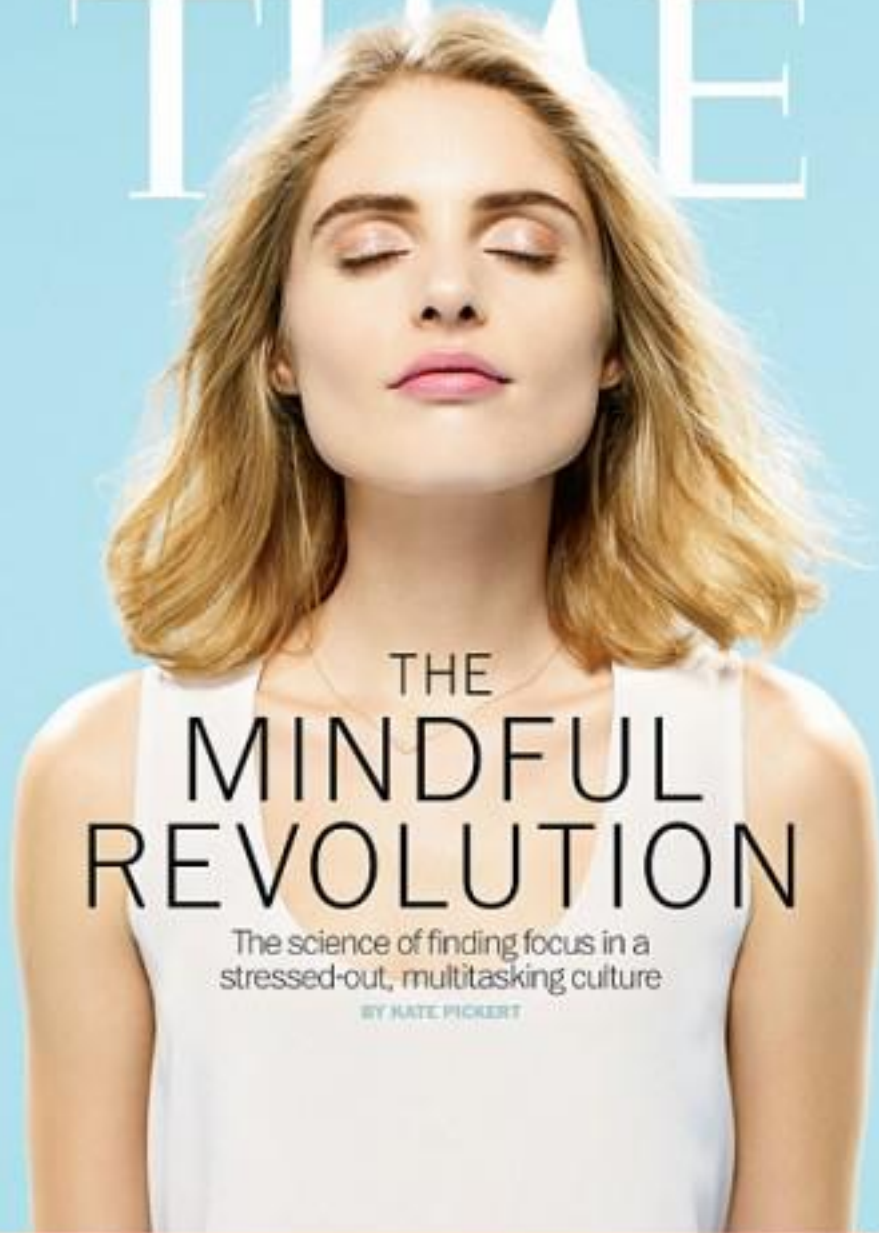
The Yoga Boom

- Over 24 million US adults practiced yoga in 2013... it's as popular as golf
USA Today, March 3, 2015
- Yoga is a \$27 Billion Industry
The Huffington Post, January 16, 2013
- Yoga: The new career path for corporate execs
The Huffington Post, September 9, 2013

FEBRUARY 3, 2014

Fleeing Syria Photographs by James Nachtwey / Peyton Power / Steve McQueen

TIME



THE
MINDFUL
REVOLUTION

The science of finding focus in a stressed-out, multitasking culture

BY NATE PICKERT

TIME.COM







What is mindfulness?



“Mindfulness means paying attention in a particular way; on purpose, in the present moment, and nonjudgmentally.”

---Jon Kabat-Zinn

What is mindfulness?

“Mindfulness is... about paying attention. That’s what meditation is, no matter what tradition or particular technique is used. In Asian languages, the word for mind and the word for heart are the same. So if you’re not hearing mindfulness in some deep way as heartfulness, you’re not really understanding it. Compassion and kindness towards oneself are intrinsically woven into it. You could think of mindfulness as wise and affectionate attention.”

—Jon Kabat-Zinn

<http://healthland.time.com/2012/01/11/mind-reading-jon-kabat-zinn-talks-about-bringing-mindfulness-meditation-to-medicine/>

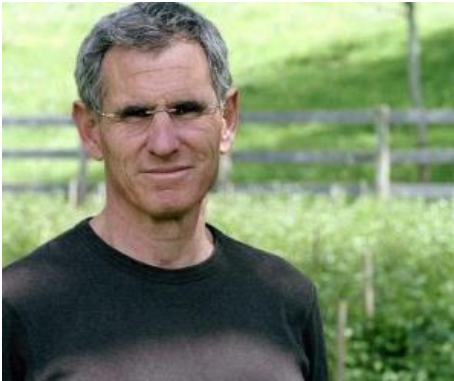
Mindfulness

- Derived from Eastern contemplative traditions
- Attending to the present moment in a sustained and receptive fashion (Brown & Ryan, 2003)
- Builds capacities for attention and awareness
- Meditation and yoga are examples
- Sanskrit root of yoga – “to yoke, to join, and to direct and concentrate one’s attention” (Collins, 1998, p.564)

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Mindfulness-Based Stress Reduction (MBSR)



- * Jon Kabat-Zinn, PhD, developed MBSR
- * Kabat-Zinn is Professor of Medicine Emeritus at the University of Massachusetts Medical Schools
- * Influenced by Thich Nhat Hanh
- * MBSR first offered in 1979 at Stress Reduction Clinic at U Mass Med Center

MBSR Content

- Uses meditation (e.g., sitting, walking, eating) and simple yoga movements
- Goal to increase stress management skills through focused nonjudgmental attention to the present moment
- Teaches skills in protected environment and helps participants generalize skills to daily life and acute stress

MBSR Format

- Intensive 8-week program
- One 3-hour session and seven 2.5 hour sessions
- Generally 8-15 people in a group
- Single instructor with extensive training
- Instructional DVDs and printed materials
- Practices in group and between groups with discussion

Mindfulness-Based Cognitive Therapy (MBCT)

- Developed by researchers Zindel Segal, Mark Williams, and John Teasdale
- Based on MBSR
- Designed to reduce depression and “chronic unhappiness”
- Effective for reducing risk of depression relapse
- Found to reduce depression, anxiety, and general distress

Chiesa & Serretti, 2011; Fjorback et al., 2011; Galante, Iribarren, & Pearce, 2012; Marchand, 2012; Piet & Hougaard, 2011

Dialectical Behavior Therapy (DBT)



- Marsha Linehan, PhD, is a psychologist and Professor in the Department of Psychology at the University of Washington
- <https://faculty.washington.edu/linehan/>

Other Mindfulness Programs

- Substance use (Chiesa & Serretti, 2013; Zgierska et al., 2009)
- Parenting (Garrison Institute, 2011)
- Childbirth and postpartum (Duncan & Bardacke, 2010)
- Children and adolescents (Black, Milam, & Sussman, 2009; Rempel, 2012)

Mindfulness-Based Therapy: Meta-Analyses

- Anxiety and depression (Hofmann, Sawyer, Witt, & Oh, 2010; $n = 39$ studies)
 - ▣ Moderate effect sizes in overall sample; large effect sizes (0.97, 0.95) in patients with mood and anxiety disorders
- Somatization disorders (Lakhan & Schofield, 2013; $n = 13$ studies)
 - ▣ Small to moderate positive effects, especially with irritable bowel syndrome
- Comprehensive meta-analysis (Khoury et al., 2013; $n = 209$ studies; $n = 12,145$ subjects)
 - ▣ Effective for treating diverse psychological issues, particularly anxiety, depression, and stress

Pathways of Action

- Meditation may change gene expression, reducing inflammatory markers and leading to more rapid recovery from stress
- Implications for reducing risk of diseases caused by chronic low-grade inflammation (e.g, cardiovascular & metabolic disease, cancer)
- Alterations in brain activity and function among long-term meditators

Changing the Brain

- Compassion training changes behavior and neural patterns of response (Weng et al., 2013)
- “...we now have evidence that engaging in pure mental training can induce changes not just in the function of the brain but in the brain’s very structure...the brain can actually change and some of the changes may be beneficial and useful.” (Paulson, Davidson, Jha, & Kabat-Zinn, 2013; p.88)

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Urban youth and chronic stress

- Youth in underserved, urban communities often exposed to chronic stress and adversity (Hurt et al., 2001)
 - Neighborhood violence
 - Family conflict
 - Drug addiction in families/communities
 - Financial and housing stressors

Inner-city Baltimore



Developmental neuroscience perspective

- Childhood adversity alters brain development, impacts stress response system
- Disruptions in cognitive and emotion regulation capacities
- Impaired capacities for self-regulation linked with range of social-emotional problems

Anderson, 2003; Anderson & Teicher, 2009;
Teicher et al., 2002

Self-regulation

- What is **self-regulation**?
 - ▣ **Executive functions** - e.g., attention; impulse control
 - ▣ **Cognitive regulation** - e.g., rumination
 - ▣ **Emotion regulation** - e.g., emotional & physiological arousal
- Affects social-emotional and behavioral functioning
 - ▣ Internalizing problems - e.g., depressive symptoms, anxiety
 - ▣ Externalizing problems - e.g., aggressive behavior



I have noticed that people are dealing too much with the negative, with what is wrong... why not try the other way, to look into the patient and see positive things, to just touch those things and make them bloom?

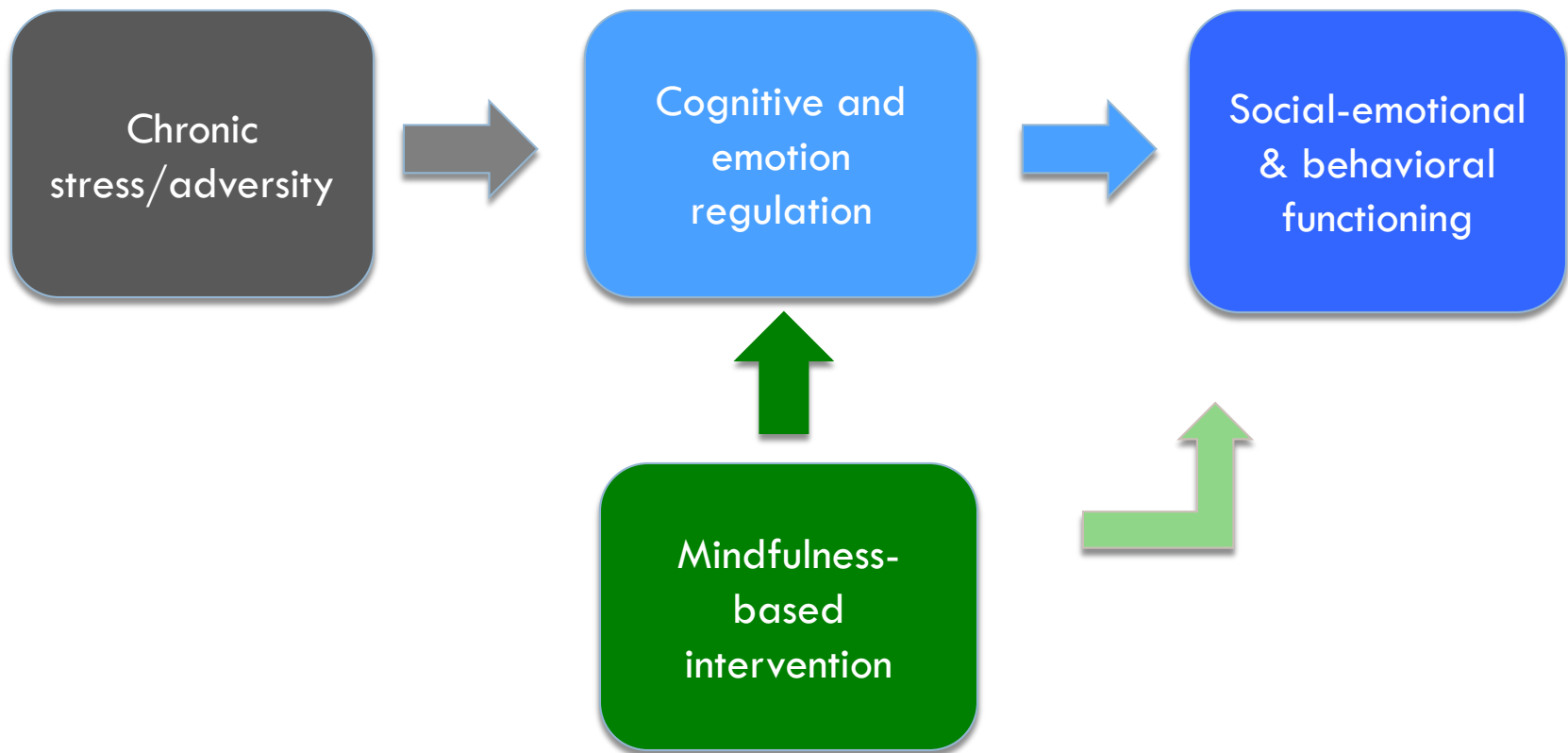
--Thich Nhat Hanh

Why bring mindfulness to urban public schools?

- Increase capacity for cognitive & emotion regulation
 - ▣ Reduce negative effects of chronic stress exposure and promote effective skills for managing stress
 - ▣ Potential to reduce or prevent:
 - depressive symptoms
 - social and behavioral difficulties
 - academic problems
 - early substance use initiation

Black, Milam, & Sussman, 2009; Birdee et al., 2009;
Galantino, Galbavy, & Quinn, 2008

Hypothesized intervention effects



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RAP Club

- Adapted from **Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS)**
- Group treatment for adolescents exposed to trauma
- One of top 3 interventions disseminated through the National Child Traumatic Stress Network
- In diverse adolescent samples, found to improve:
 - ▣ Trauma, depressive, and anxiety symptoms
 - ▣ Impulsivity
 - ▣ Attention
 - ▣ Risk behaviors

Briggs-King & Shaw, 2009; DeRosa et al., 2006; Habib, Labruna, & Newman, 2013; Kisiel, Villa, Maj, Labruna, & Habib, 2014; Weiner, Schneider, & Lyon, 2009

Preliminary work

- First adapted for emerging adults at the Youth Opportunity (YO) Centers
- Employment and training program
- Most YO members 18-22
- Mental health needs of YO members identified as a concern



Adapting SPARCS

- Community based participatory methods
- Prevention rather than treatment focus
- Groups co-led by two YO members & a mental health professional
- Pre-post study: Higher intervention dose → reduced depression and improved coping
- Quasi-experimental study:
 - ▣ Improved coping
 - ▣ Reduced depression for males with high baseline depression symptoms

Mance et al., 2010; Tandon et al., 2011;
Tandon et al., 2015

RAP Club

- 12-session weekly group
- Held during school day
- Co-led by mental health counselor and young adult community member
- Core components:
 - ▣ Psychoeducation
 - ▣ Mindfulness
 - ▣ Cognitive behavioral skills

Pilot work with middle schools

- Implementation #1: 6th graders
- Implementation #2: 7th graders
- Implementation #3: 7th and 8th graders

Mindfulness skills

- Awareness of emotions
 - ▣ Check in with yourself
- Using a mindful approach (“Wise Mind”)
 - ▣ Using your emotions and your logic to help you reach an effective way to handle a problem
- Distress tolerance
 - ▣ Hang in there when you have stress or painful emotions without doing something you’ll regret later

Mindfulness practices

- Breathing
- “Munchkin mindfulness”
- “What’s different?” game
- “Guess what it is” game
- Soundball

Pilot randomized study

- 49 7th and 8th graders in 2 schools
- RAP Club ($n=29$) vs. usual school programming ($n=20$)
- Teacher-reported improvements in:
 - ▣ Emotion regulation ($d = .85$)
 - ▣ Social competence ($d = .87$)
 - ▣ Classroom behavior ($d = .69$)
 - ▣ Academic competence ($d = .76$)
- No student-reported improvements
- Session attendance associated with better outcomes

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The Holistic Life Foundation (HLF)

□ www.hlf.org

□ Co-Founders

▣ Ali Smith, Executive Director

▣ Atman Smith, Director of Youth Programming

▣ Andres Gonzalez, Chief Financial Officer

□ Stress reduction, yoga & mindfulness training



School-based mindfulness and yoga

- Breathing to settle in
- Yoga-based poses
- Breathing practice
- Discussion
- Guided reflection
- Assigned practice



Two randomized studies

- Pilot study (n = 98)
 - ▣ Yoga 4x per week for 12 weeks
 - ▣ Improvements in student-reported self regulation in response to stress ($d = .83$)
- NIDA R34 (n = 251)
 - ▣ Yoga 2 x per week for 15 weeks
 - ▣ Did not replicate pilot finding on self regulation

Feagans Gould et al., 2012; Feagans Gould et al., 2013;
Mendelson et al., 2010; Mendelson et al., 2013

Study #1: Intervention effects on self-regulation

	Adjusted Mean (Standard Error)		
Time 2 Measure	Intervention	Control	ES Cohen's <i>d</i>
Responses to Stress Questionnaire - Involuntary Engagement Scale	0.75 (0.05)	1.05 (0.05)	0.83***
--Rumination	0.76 (0.08)	1.15 (0.08)	0.70**
--Intrusive Thoughts	0.68 (0.07)	0.95 (0.08)	0.51*
--Emotional Arousal	0.65 (0.07)	1.00 (0.08)	0.64**
--Impulsive Action	0.99 (0.09)	1.23 (0.09)	0.38
--Physiologic Arousal	0.70 (0.07)	0.91 (0.07)	0.39

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Study #2: Analysis of self-regulation

- Did not replicate our pilot study finding for self-regulation... why not?
- Intervention dose and frequency
 - ▣ *What amount and intensity of program exposure is adequate to produce change?*
- School implementation factors
 - ▣ *What school characteristics facilitate or limit effective program implementation?*
- Measurement
 - ▣ *How should program impact be assessed?*
 - ▣ *How should program delivery be assessed?*

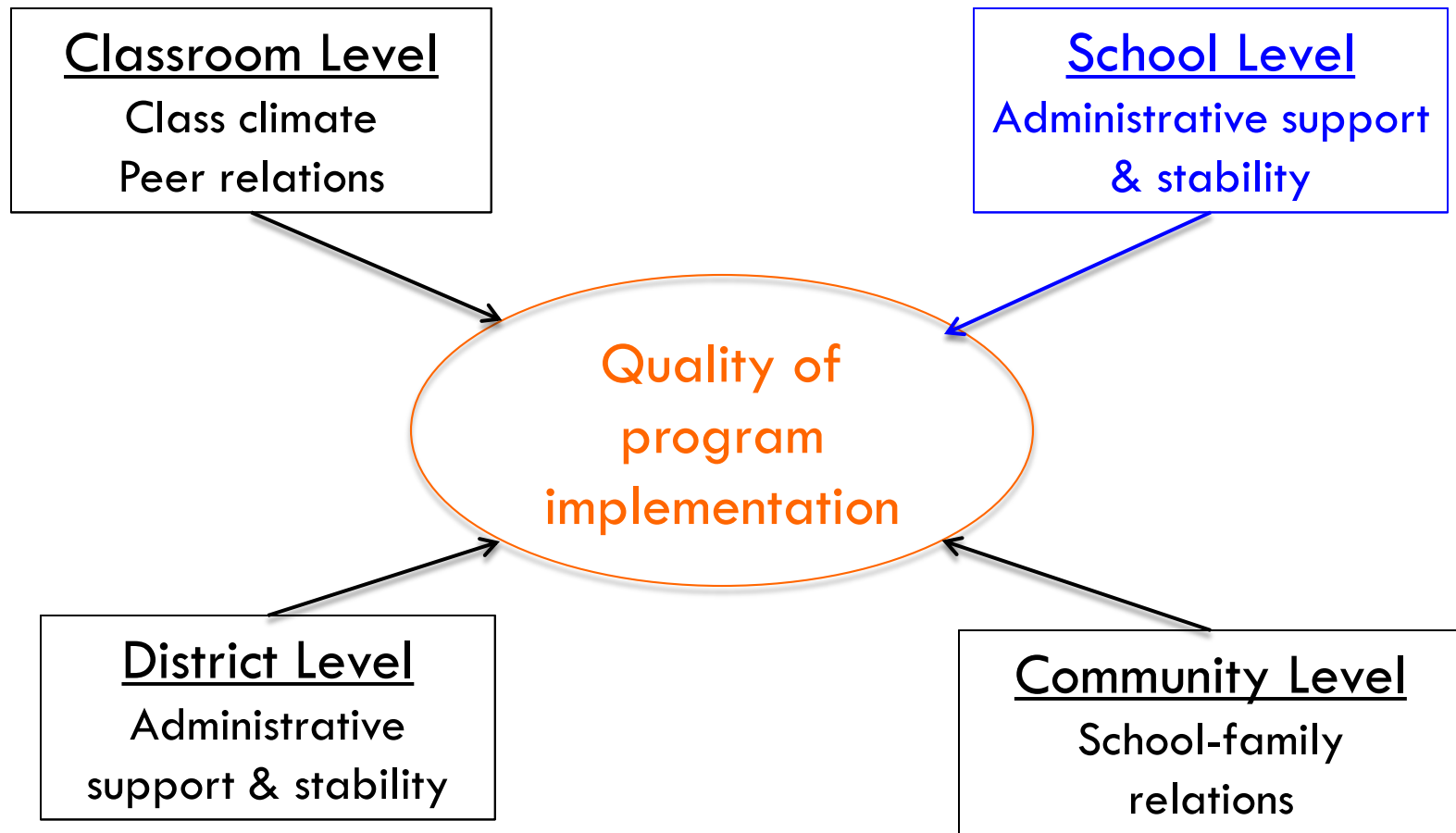
What is a “therapeutic dose” of mindfulness for middle school students?

- Intervention exposure includes:
 - # weeks, session length, outside practice (dose)
 - # sessions/week (frequency)
- No empirically supported dose recommendations
- Most school-based mindfulness studies do not assess influence of dose on outcomes
 - 23 of 48 studies (48%) reported some aspect of dose
 - 5 of 48 studies (10%) assessed dose impact on outcomes
- Cook-Cottone, 2013; Feagans-Gould, Dariotis, Greenberg, & Mendelson, 2015

Intervention dose across studies

	# Sessions per week	# Weeks	Session length	Outside practice?
Study #1	4	12	45 min	yes
Study #2	2	16	45 min	yes

School factors related to intervention implementation



School implementation challenges

- Lack of administrative support linked to:
 - ▣ Scheduling difficulties
 - ▣ Inappropriate spaces for teaching yoga
- Lack of teacher involvement linked to:
 - ▣ Low student attendance at yoga
 - ▣ Missed opportunities for skills reinforcement
- Difficulty of sustaining positive collaboration
 - ▣ High turnover of teachers and principals

Responses to Stress Questionnaire (RSQ)

Involuntary Engagement Scale

	Not at all	A little	Some	A lot
When I have problems with other kids I feel sick to my stomach or get headaches	1	2	3	4
When problems with other kids happen, I can't always control what I do	1	2	3	4
My thoughts start racing when I have problems with other kids	1	2	3	4
When I have problems with other kids, right away I feel really angry, sad, scared, or worried	1	2	3	4
When problems with other kids come up, I get upset by things that don't usually bother me	1	2	3	4

Student voices from study #2

- *“Like if sometimes I don’t wanna fight them, I be like just, just calm yourself down, just sit down and move away from the situation.” (5th grade female)*
- *“I get to learn new stuff and I get to learn about new things and stuff to help me in life, when I grow up like when I’m a young adult, or an older, like in my teens, or when I’m , you know when, when I’m getting ready to do something that I know is not the right choice, then I have a way to calm me down.” (5th grade female)*
- *“I could use them [program skills] in the future because when you get older more things will happen so you will get more stressful, and you’ll think life is like over, so you might wanna learn yoga before that happens.” (6th grade male)*

Urban Teachers

- Public school teachers in disadvantaged communities face multiple challenges
 - ▣ Students with behavioral and emotional issues
 - ▣ Overcrowded classrooms
 - ▣ Lack of professional support
- Teachers have high rates of burnout and attrition

Pilot study: Yoga and mindfulness for teachers

- 43 elementary and middle school teachers recruited from 7 schools
- Teachers randomized (by school) to 6-session yoga course or no-intervention control group
- Intervention— 45 min sessions over 3 weeks after school; yogic breathing techniques, yoga postures, guided mindfulness practices
- Six themes: breath, stress, anger, thoughts, energy, love

Feasibility

- Recruitment:
 - Out of ~70 teachers, 52 consented to the research
 - 9 consenting teachers dropped out
 - 5 did not complete any study procedures
 - 4 completed pretest but dropped out after only 1 session
- Retention rate among the 43 participants: 82.7%
- Attendance and program completion: 72% of participants attended 4 out of 6 classes

Preliminary Outcomes

	Intervention (n=21)	Control (n=22)		
	M (SD)	M (SD)	Cohen's <i>d</i>	<i>p</i>
Stress				
Baseline	2.85 (0.74)	2.75 (0.61)	0.15	0.62
Posttest	2.56 (0.63)	2.71 (0.64)	0.24	0.38
Change score	-.29 (0.42)	-.04 (0.50)	0.54	.08
Emotional Exhaustion				
Baseline	31.48 (10.04)	30.05 (12.51)	0.13	0.68
Posttest	29.81 (8.50)	30.68 (10.81)	0.09	0.77
Change Score	-1.67 (4.02)	.63 (6.60)	0.42	0.17

Qualitative feedback from teachers

- *“I knew I was stressed but felt like it was just a part of the job. I learned that I can keep myself from getting too stressed by listening to my body and taking time to breathe deeply and calm down before continuing with my day.”* (2nd grade teacher)
- *“I would have gotten more out of the program if more time was spent talking about how to use the lessons with my students.”* (4th grade teacher)

Mindful Moment

- Whole school approach
- Brief daily mindful practices morning & afternoons
- Teacher trainings
- Optional yoga for teachers
- Offered at Patterson High School
 - ▣ Suspensions decreased
 - ▣ Attendance increased
 - ▣ Increase in # of 9th graders promoted to 10th grade
 - ▣ Average 9th grade GPA increased

Limitations in the research on mindfulness and school health

- Small samples
- Lack of active control conditions
- Lack of long-term follow-ups
- Over-use of self-reports
- Few measures of academic achievement
- Lacking adequate measures of program implementation fidelity and its relation to outcomes

Acknowledgements – RAP Club

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Thank you!

