Dosage of Yoga: 
Researching Yoga in the Schools

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Dosage

• “The amount of a medicine, drug, or vitamin that should be taken at one time or regularly during a period of time” (Webster).

• MINIMAL THERAPEUTIC DOSAGE
  • Dosage below which yoga will not have a significant, measurable effect (see Cook-Cottone, 2013).
Attunement Model

Internal System: Real Self
- cognitive (thoughts)
- emotional (feelings)
- physiological (body)

The Representation of Self (Authentic Self)

External System: Ecological Context
- microsystem (family)
- exosystem (community)
- macrosystem (culture)
Disordered Self
In the field of exercise science, studies show significant dose-response outcomes including:

- physical functioning,
- mental health,
- emotional well-being,
- social functioning,
- general health,
- and vitality

with lowest dosages often showing no effects

(e.g., Martin, Church, Thompson, Earnest, & Blair, 2009).
Why Explore Dosage?

- To control for dosage as a confounding variable in efficacy studies.
- Translation to practice - recommended therapeutic dosage.
- To better understand the key mechanisms of change.
Dosage and the Yoga Sutra

- *Practice becomes firmly grounded when well attended to for a long time without break and in all earnestness*"

1:14, Pantanjali, Yoga Sutras (Satchidananda, 2012)
School Data

• **Dosages included** (a few examples):
  • Asana, breathing, meditation, relaxation; 60-minutes, 1/week, 12 weeks
  • Asana, relaxation, reflection, massage; 30- minutes, 3/week, 3 weeks
  • Asana, breathing, role-playing, guided imagery, discussion, music, visual aides; 30-minutes, 3/week, 8 weeks
  • Poses, relaxation, breathing, internal cleansing, songs; 75-minutes, 7/week, 1 month.
  • *(Cook-Cottone, 2013; Serwacki & Cook-Cottone, 2012).*
Yoga and Life Skills Program

- Yoga, life skills work, journaling, guided relaxation; 90-minutes, 1/week, 14 weeks (e.g., Scime & Cook-Cottone, 2008).
Africa Yoga Project

What is Mechanism of Change?
Dosage: What Matters?

Since I started doing yoga, I have always been very active. I feel very comfortable and I feel very joyful. I like doing yoga. I enjoy doing it at my free time. Yoga helps me to recover from pains and many other things. I like all the poses of yoga and they help me feel very happy. I like yoga because it made me a new person. And I will always like yoga.
Dosage: How Often?

- Classes per month/days per month (Ross et al., 2012).
- Control and measurement of home practice (Ross et al., 2012; Sherman, 2012).
- Are they teaching? (AYP data)
- Do they practice when they teach? (AYP data)
- Were participants in attendance? (Serwacki & Cook-Cottone, 2012)
- “Consistency of Practice” (Sherman, 2012)
- See Cook-Cottone, 2013.
Dosage: How Long?

- Duration of yoga intervention; how many weeks in length? (Uebelacker et al., 2010; Sherman, 2012).
- Minutes per session (Klein & Cook-Cottone, 2013).
- Previous yoga interventions.
- Years of practice prior to intervention.
- *See Cook-Cottone, 2013.*
Dosage: Composition

- Content of session affecting dosage (i.e., 45 minute session with 30 minutes asana and 15 minutes meditation; Klein & Cook-Cottone, 2013).
  - Which limbs of yoga?
  - How much of each limb?
  - Other physical activity (Ross et al., 2012).
  - See Cook-Cottone, 2013.
Dosage: Integrity

- Quality of practice or treatment integrity (Sherman, 2012)
- School variables affecting integrity (e.g., Scime & Cook-Cottone, 2008)
- Attendance- late arrival, early exit.
- *See Cook-Cottone, 2013.*
Current Recommendations

• A regular practice would be comprised of 2-3 sessions per week for at least one hour per session. (Uebelacker et al., 2010)

• There is trend for western studies to report twice weekly sessions from 60 to 90 minutes in length Sherman (2012).
  • moderate to higher doses would include session lengths at 90 minutes or more and/or frequency of greater than 3 sessions per week.
  • See Cook-Cottone, 2013.
Current Recommendations

- There is still a dearth of recommendations for minimum duration.
  - Efficacy across studies of various mental and physical issues *trending at over one month* of practice with intervals of 4, 6, 9, 12, 16, and 32 weeks of practice.
  - shorter durations would fall below 6 weeks,
  - moderate at 6-12 weeks,
  - longer duration studies at 13 to 32 weeks.
  - Sherman (2012) observed a median duration across yoga studies reviewed was *at 8 weeks*.
  - These categories are somewhat arbitrary cutoffs.

- Researchers should provide of previous literature to support dosage conditions used in current study (Sherman, 2012).
Last Thoughts….

• Rhetorical questions…
  • Is yoga an intervention (with a discrete beginning and end) or a lifelong practice?
  • Should our answer to this question be reflected in how we describe and study outcomes?
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