



# Yoga for Depression: Current Research, Future Directions, Practical Advice

Lisa A. Uebelacker, Ph.D.



# Overview

- What is yoga and why yoga for depression?
- Yoga for persistently depressed adults
- Yoga for pregnant depressed women
- Development of yoga for depressed adolescents
- Future research
- Practical advice

# Poll Question # 1

- What is your experience with yoga?
  - I practice yoga currently.
  - I am a yoga teacher.
  - I have practiced yoga in the past but not currently.
  - I have never practiced yoga.

# Poll Question #2

- What is your primary VA role?
  - Researcher
  - Clinician
  - Split between researcher and clinician
  - Student, trainee, fellow
  - Other

# What is yoga?

- Postures -- asanas
  - Breath control -- pranayama
  - Withdrawal of senses, concentration, meditation, enlightenment
  - Ethics and self-discipline -- yamas and niyamas
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- US: Hatha yoga –
    - Focused on physical practice
    - Many styles



## Research

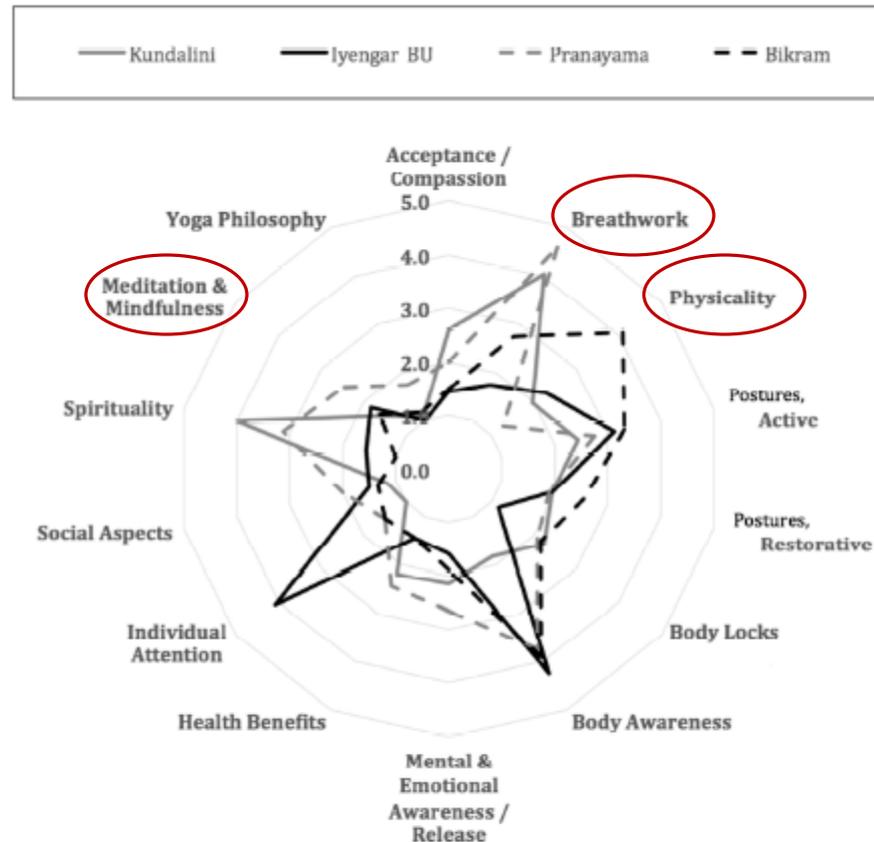
# The Essential Properties of Yoga Questionnaire (EPYQ): Psychometric Properties

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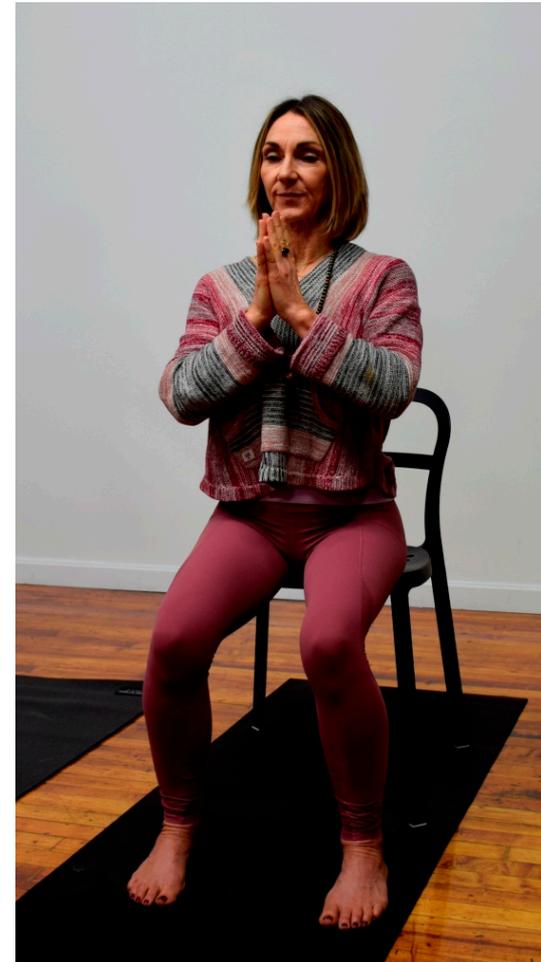
**Figure 1. EPYQ Ratings: Subset of Specific Yoga Types**



Note: We predicted that Bikram would require the most physical exertion, followed by Iyengar and Kundalini, with Pranayama as the least active practice. We anticipated that exertion would have an inverse correlation with more meditative aspects of yoga practice.

# Why yoga for depression?

- Physical activity
  - Elevated heart rate
  - Strengthening
  - Flexibility
- Mindfulness practice
  - Noticing breath
  - Non-judgmental attention to thoughts, feelings, physical sensations
- Altering breath
  - Calming central nervous system?



# Why yoga for depression?

- Current treatments (medications, psychotherapy) insufficient
- Widely available
- Relatively inexpensive
- Focus on positive mental and physical health



## Holistic Approaches to Depression

Funding:  
R01 NR012005  
(PI: Uebelacker)

[clinicaltrials.gov](https://clinicaltrials.gov)  
identifier:  
NCT01384916

# Collaborators

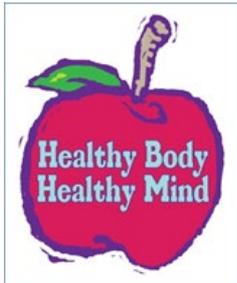
- Ana Abrantes
- Cynthia Battle
- Leslie Brick
- Monica Broughton
- Debbie Bourque
- Mimi Budnick
- Liz Butler
- Julie Cloutier
- Gary Epstein-Lubow
- Sarah Garnaat
- Brandon Gaudiano
- Tom Gillette
- Patricia Hottel
- Morganne Kraines
- Richard Liu
- Joanne Matthew
- Gretchen Mayhew
- Ivan Miller
- Nicole Nugent
- Julie Shore
- Jennifer Spaziano
- David Strong
- Tanya Tran
- Geoff Tremont
- Audrey Tyrka
- All participants
- And more...



# Rationale – Study of yoga as adjunctive treatment for depression

- Many claims that yoga is useful for depression
- Plausible mechanisms by which yoga may have an impact on depression
- Existing studies of varying to poor quality
- Expectation that yoga may be used as an adjunctive intervention

# RCT Design



Primary outcome: Depression

Secondary outcomes:

- Social and role functioning
- Physical health



# Inclusion criteria

- Adults
- Elevated depressive symptoms
- Met criteria for MDD in past 2 years
- Antidepressant medication  $\geq 8$  wks
- Yoga-naïve
- No current hazardous substance use
- Medically cleared for moderate physical activity
- Fluent in English

# Yoga class outline

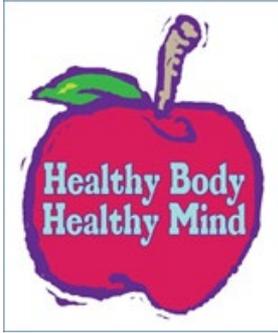
- Greeting
- Pranayama and seated meditation
- Warm-ups and half sun salutation
- Standing postures
- Seated postures
- Inversion and knee-down twist
- Guided shavasana
- Wrap-up and homework discussion



# Healthy Living Workshop



- Alcohol, nicotine, & caffeine
- Being a smart patient
- Stroke and Alzheimer's disease
- CAM approaches to depression
- Cancer prevention
- Depression and diabetes
- Nutrition
- Getting a good night's sleep
- Physical pain
- Prevalence and causes of depression
- Protecting your heart
- Spirituality and religion
- Your brain on drugs
- Physical activity
- Germs colds and the flu



### Enrollment

Expressed interest in study (n=1470)

Signed consent (n=220)

Randomized (n=122)

- Excluded (n=86)
- Declined participation (n=12)

### Allocation



YOGA (n=63)

HLW (n=59)



### Follow-Up

Completed assessments:

- Week 10 (n=58)
- 3 follow-up assessment (n = 49)
- 6 follow-up assessment (n = 45)

Completed assessments:

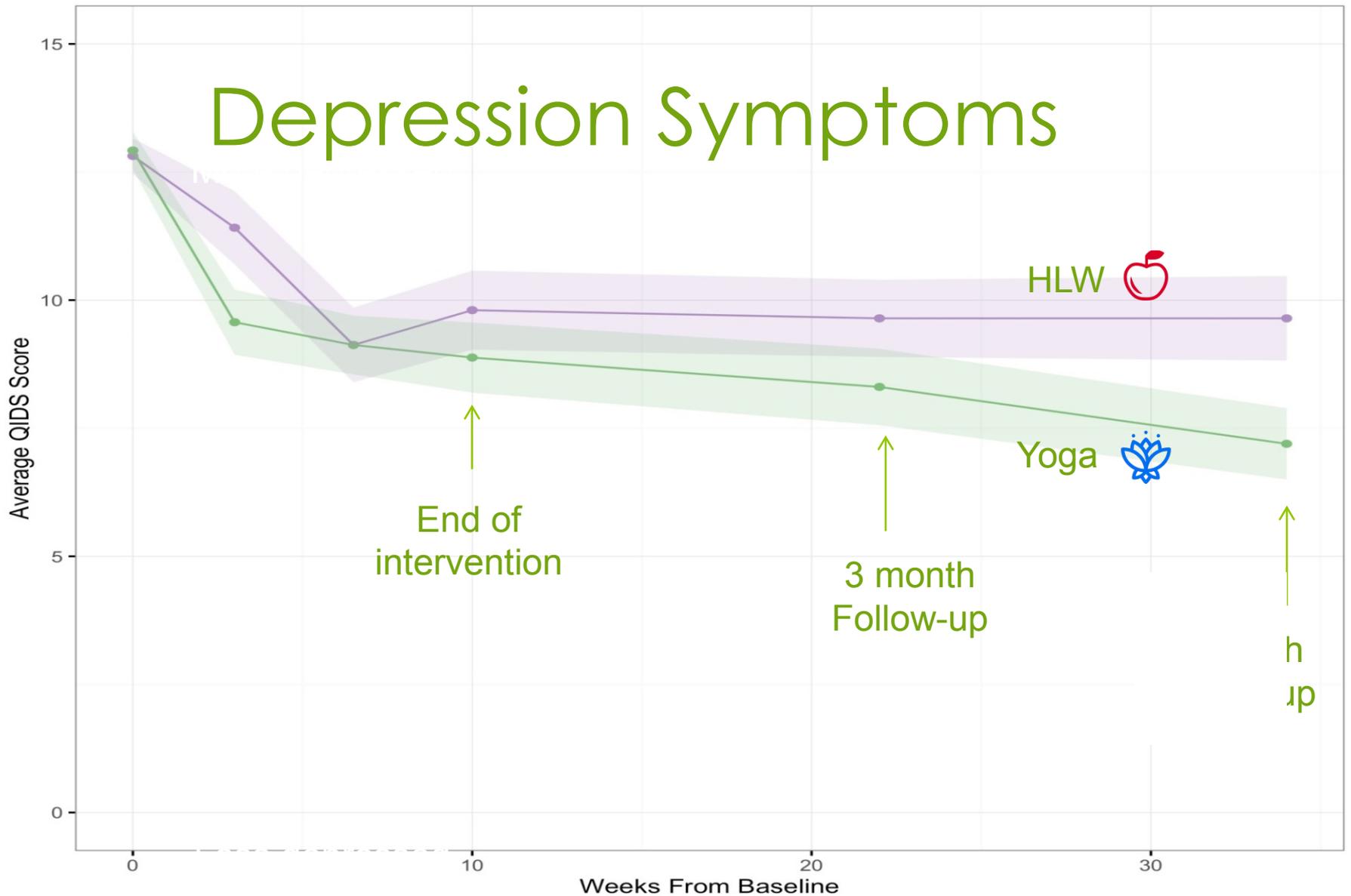
- Week 10 (n=46)
- 3 follow-up assessment (n = 45)
- 6 follow-up assessment (n = 45)

### Analysis

Analyzed (n=63)

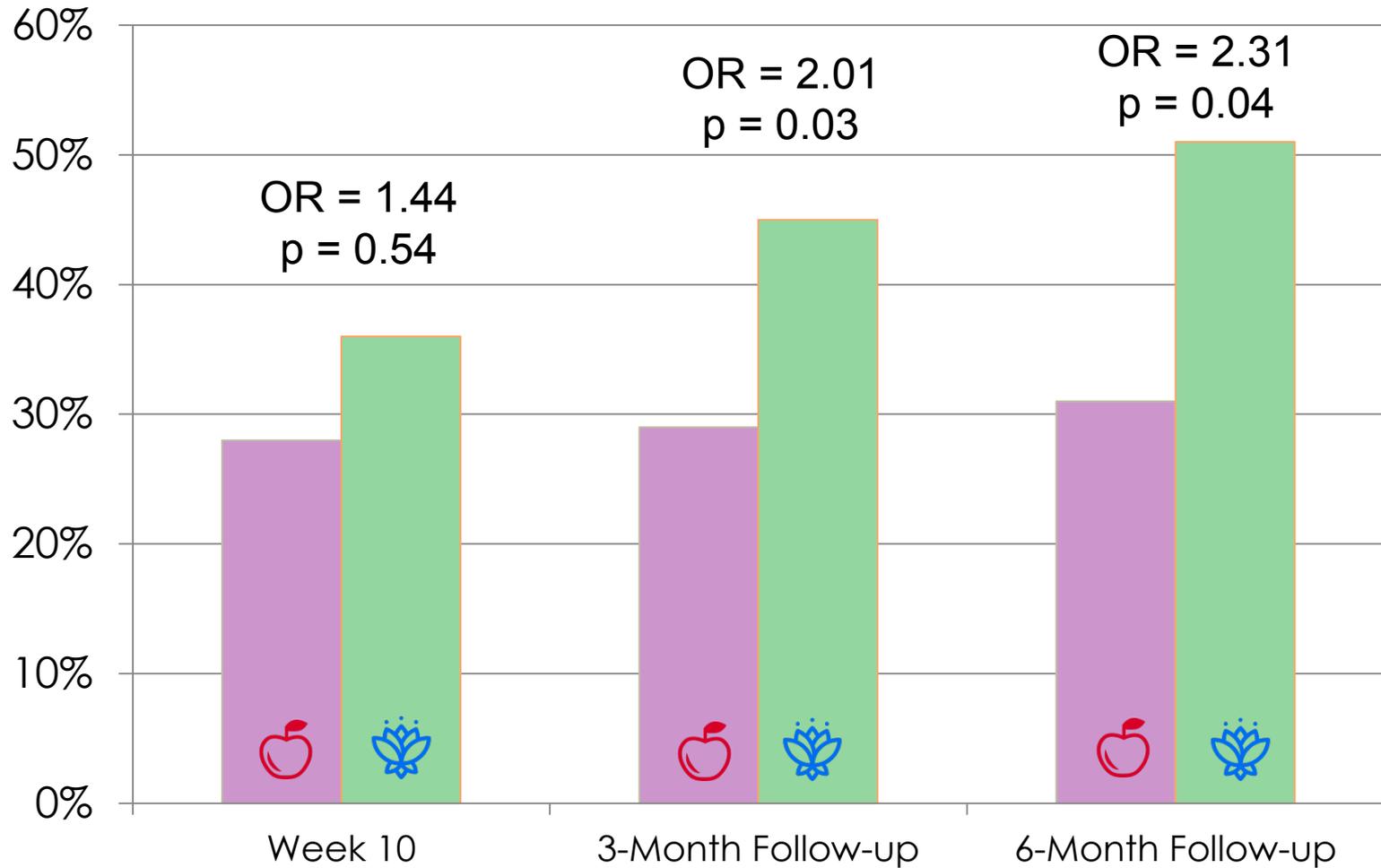
Analyzed (n=59)

# Depression Symptoms



Jebelacker, L. A., Tremont, G., Gillette, T., Epstein-Lubow, G., Strong, D. R., Abrantes, A., Tyrka, A. R., Tran, T., Gaudiano, B. A., & Miller, I. W. (2017). Adjunctive yoga vs. health education for persistent major depression: A randomized controlled trial. *Psychological Medicine*, 47: 2130-2142.

# Response Rate



# Qualitative Data

- What did you like about the study program? Please tell us specific things that you liked.
- What did you NOT like about the program? How could it be improved? Again, please tell us specific details.
- What is the most important thing that you learned?

Uebelacker, L. A., Kraines, M., Broughton, M. K., Tremont, G., Gillette, L. T., Epstein-Lubow, G., Abrantes, A. M., Battle, C. B., & Miller, I. W. (2017). Perceptions of hatha yoga amongst persistently depressed individuals enrolled in a trial of yoga for depression. *Complementary Therapies in Medicine*, 34: 149-55.



# Instructors

*“The teachers were all wonderful.”*

*“I liked the tone set by the instructors – the attitude of not judging or comparing yourself to others.”*

*“I liked the way the instructors helped me to change a pose to a way I would be getting the same effect and it was comfortable to me.”*

*“The teachers were all great! They were gentle, non-judgmental, helpful, loving, caring.”*



# Key elements of classes

*“I loved feeling relaxed at the end.”*

*“I liked the physical-ness of the class, the stretching.”*

*“I liked when the yoga instructors tied the poses and the breathing to a concept like thinking about control, or judgment, or courage.”*

*“I loved how the instructors had us stop and reflect on how we were feeling at certain points in the classes.”*

# Effects of yoga

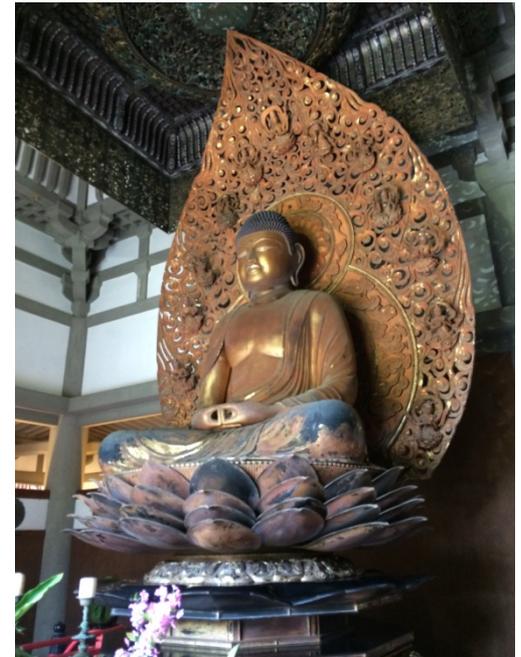
*The most important thing I learned was when I feel overwhelmed or anxious or fidgety that I can take a minute and just focus on my breathing -- can help relax me and make me feel more focused and less overwhelmed."*

(What is the most important thing you learned?) *"Concentration to get more in tune with the moment"*

*"The yoga taught me to relax."*

(What is the most important thing you learned?)

*"My body is not my enemy, and that physical strength and emotional strength are connected."*



# Yoga outside of class

*“I’ve learned to use the yoga in many situations and throughout the day”*

[I learned] *“that I can do yoga anywhere.”*

*“Yoga and the breathing can help calm me and refocus me during stressful times”*

*“The breathing [is]...something I can do at work whenever I feel stressed.”*

I *“realized I’d have to dedicate time every day for a longer-term benefit I think – and I’m too depressed at the moment to feel motivated.”*

# Concerns or drawbacks

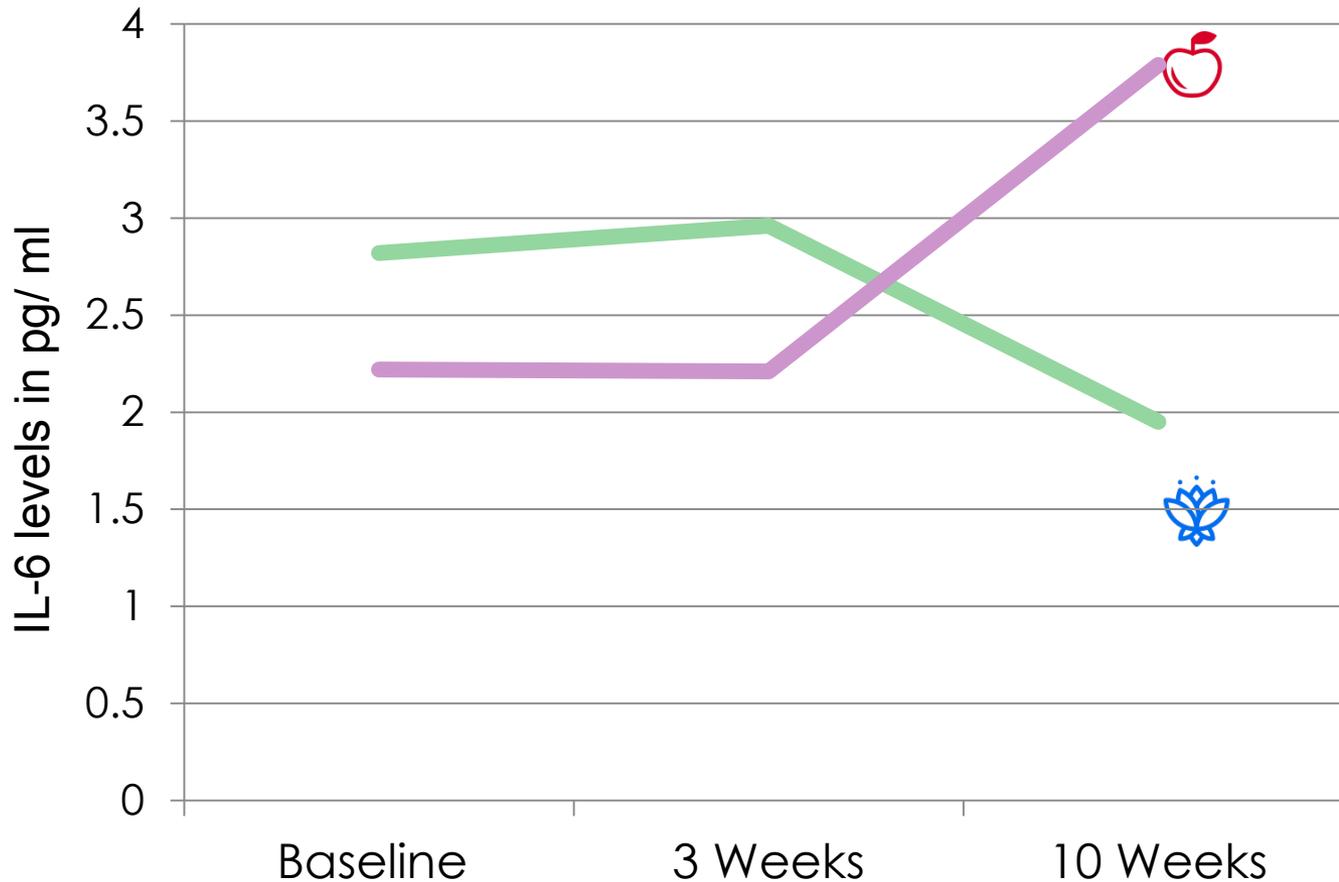
- Difficulties with participation because of physical limitations
- Wanting more individualized instruction
- Not liking the class time
- Wanting an opportunity to participate more, and particularly to attend make up classes
- Wishing that the written take-home materials that we had provided had illustrations

# Markers of inflammation

- IL-6
  - TNF-alpha
  - C-reactive protein
- 
- Measured at BL, 3 weeks, 10 weeks
  - Subset of total sample



# IL-6: marker of inflammation



Nugent, N. R., Brick, L., Armev, M. F., Tyrka, A. R., Ridout, K. K., & Uebelacker, L. A. Benefits of yoga on IL-6: findings from a randomized controlled trial of yoga for depression. Under review.

# Summary

- People taking an antidepressant medication, with persistent depression
- Yoga vs. health education (HLW)
- At week 10, yoga NOT > HLW for depression
- Over entire study including 6 months follow-up, yoga > HLW
  - Depression
  - Social functioning, life activities
  - General health perceptions
- Instructors very important
- Participants learned mindfulness
- Participants used breathing in every day life





Journal of  
*Clinical Medicine*



*Review*

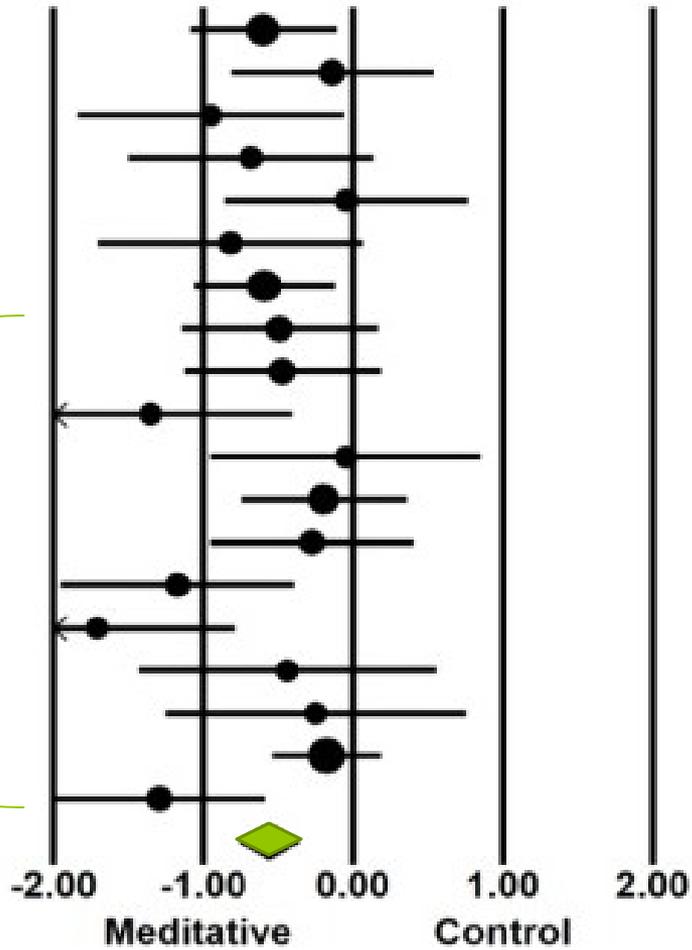
# Effects of Meditative Movements on Major Depressive Disorder: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

Liye Zou <sup>1,\*</sup> , Albert Yeung <sup>2</sup>, Chunxiao Li <sup>3</sup>, Gao-Xia Wei <sup>4</sup>, Kevin W. Chen <sup>5</sup>,  
Patricia Anne Kinser <sup>6</sup> , Jessie S. M. Chan <sup>7</sup> and Zhanbing Ren <sup>8,\*</sup>

*J. Clin. Med.* **2018**, *7*, 195; doi:10.3390/jcm7080195

Std diff in means and 95% CI

Yoga studies



# Prenatal yoga for depression

- Treatment development study (PI: Cynthia Battle)
- Objectives:
  - Develop and refine a treatment manual
  - Develop a teacher training program
  - Develop intervention adherence scale
  - Assess feasibility and acceptability of classes in an open pilot trial
  - Assess safety
  - Prepare for larger clinical trial



R34 MH0855053; Battle C.L., **Uebelacker, L. A.**, Magee S.R., Sutton K.A., Miller, I.W. (2015). Potential for prenatal yoga to serve as an intervention to treat depression during pregnancy. *Women's Health Issues*, 25, 134-41.

# Demographics and Clinical Characteristics

- n = 34
- Age: mean = 28, SD = 5.8 years
- Race
  - White/ Caucasian, n =14 (41%)
  - Hispanic/ Latino, n=12 (35%)
  - Black/ African American, n = 7 (21%)
  - Asian, n = 1 (3%)
- Gestation at baseline: mean = 19.3 weeks, SD = 4.6
- Current pregnancy was planned, n = 17 (50%)
- No live births prior to this pregnancy, n = 22 (65%)
- Major Depressive Disorder=29 (85%)

# Acceptability

- Goal = 1 class/ week X 8 weeks (8 classes)
  - Among all enrolled, mean classes attended= 5.7
  - Among those who initiated, mean = 6.7
- No injuries due to yoga reported, in spite of systemic and regular inquiry at every class and every assessment point
- High satisfaction ratings
- Depression decreased over time

# Feedback from Participants

- Benefits of yoga
  - Calming and relaxing
  - Time just for me, or time for me and the baby
    - *“It did make me feel better to have that time set aside when I can relax and I can just focus on me.”*
  - Mindful awareness, focus on the present moment
  - Improved mood
  - Ability to choose responses; learned new coping methods:
    - *[I would tell myself] ‘take a breath,’ and then tell [my husband] ‘You are not responding. I need you to respond right now.’”*

# Feedback from Participants

- Physical activity/ stretching was helpful
- Only a few ambivalent responses
  - *“I’d probably, I’d say... it’s been helpful. It certainly hasn’t hurt.”*
- Over half of participants reported practicing at home
- Barriers to attendance: work schedule, childcare, transportation, physical illness or injury

# Ongoing research –

- RCT of yoga vs. “Mom Baby Wellness Workshop” for depressed pregnant women
- PI: Cynthia Battle
- Funding: NICHD



<http://www.butler.org/research/wellness-for-two.cfm>

# New research-- TeenThrive

- PIs: Shirley Yen and Lisa Uebelacker
- Co-I: Jen Wolff, Celeste Caviness
- Phase 1: Focus groups
- Phase 2: Open trial
- Phase 3: RCT

Funding: NCCIH

[Butler.org/teenthrove](http://Butler.org/teenthrove)



# Preliminary Thoughts – Focus Groups

- What do you think of when you think of yoga? Middle aged women like my mom
- Hard to interest boys in yoga
- Significant concerns about comparison to others in class
- Previous experiences of yoga do NOT match what we plan to do
- But lots of enthusiasm
- As long as class is only 45 mins long

# Future Research Questions

- What specific aspects of yoga are most helpful for people with depression?
- How important is pranayama?
- How frequently should people attend class?
  - 2 vs. 3 times per week (Streeter et al., 2017)
- Does more yoga home practice result in better outcomes?
- Are there factors that predict that someone will respond well to yoga?
  - Expectation that yoga will be helpful (Uebelacker et al., 2018)

# Practical Advice for People with Depression

- Experiment with different classes.
- Look for a teacher who helps you feel comfortable, safe, not self-conscious
- Trust your body – teacher's instructions are suggestions
- For beginners or people who are not physically fit, try classes that are:
  - “Gentle,” “beginners”
  - Viniyoga
- Notice whether the classes help you to feel more relaxed, energetic, or happy
- Consider tai chi
- May be better to have live teacher than a video

# Thank you

- Collaborators
- Yoga teachers
- Health education teachers
- Research staff
- Participants





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