

VA



U.S. Department
of Veterans Affairs

VA QUERI Complementary and Integrative Health Evaluation Center (CIHEC) Cyberseminar:

What Number of Sessions of Yoga and Meditation are Associated with Improved Health?

Stephanie L. Taylor, Stephen Frochen and paper co-authors:
Diana Burgess, Scott Coggeshall, Lee Cross, Steve Zeliadt





Acknowledgements

Partners: Dr. Ben Kligler, Alison Whitehead, Dr. Janet Clark, Tammy Schult from VA Office of Patient Centered Care and Cultural Transformation (OPCC&CT)

QUERI CIHEC Funding: OPCC&CT and VA Quality Enhancement Research Initiative (grant #PEC 16-354).

CIH Therapy Patient Experience Survey Development and Data Team:

Barbara Bokhour, PhD

Claire Chen, MPH

Amy Cohen, PhD

Scott Coggeshall, PhD

Claudia Der-Martirosian, PhD

Jamie Douglas, MA

Rani Elwy, PhD

Spencer Hildie, BS

Danna Kasom, BS

Alexander Kloehn, MPH, RDN

Dr. Jolie Haun and her team for testing the survey

Karl Lorenz, MD, MSHS

Briana Lott, MPH

Michael McGowan, MA

Melissa Medich, PhD

Marlena Shin, JD, MPH

Stephanie L. Taylor, PhD, MPH

Joy Toyama, DrPH

Michelle Upham, MSW

Steven B. Zeliadt, PhD, MPH

Xiaoyi Zhang, MS



Background

- Yoga and mindfulness-based interventions can improve chronic pain, anxiety, sleep, and depression.
- However, the field has still not coalesced around an optimal number of sessions needed for some health outcomes.
- Most studies of yoga or meditation interventions understandably use a pre-set number of sessions to examine effectiveness (e.g., 6, 8, 10 sessions).
- Few have examined the effectiveness of varying numbers of sessions of yoga or meditation on health to determine the optimal number of sessions for health.



What This Presentation Addresses

We review our two papers examining:

- A very large sample of Veterans using yoga or meditation to determine
- at what # of sessions of yoga or meditation people report a change in health over a 3-month period and a 6-month period,
- among Veterans with chronic musculoskeletal pain who have not used complementary and integrative health therapies before.



Methods

Population - sampled from VA EMR:

- invited 15,608 Veterans from 18 Whole Health Flagship sites
- w moderate-to-severe chronic musculoskeletal pain
- who initiated any: chiropractic care, acupuncture, massage, **yoga, meditation/mindfulness**, Tai-Chi/Qigong

2 Data Sources to Measure CIH Therapy Use

- 1) **Survey-** OPCC&CT's Complementary and Integrative Health Patient Therapy Experience Survey, 2021-2023 - CIH therapy use and outcomes
 - Baseline svy RR = 24% of 15k invited
 - 6-month svy RR = 58% of 6,453 baseline responders
 - Taylor SL, Elwy AR, Bokhour BG et al. Exploring Measuring Patient-Reported Use and Outcomes from Complementary and Integrative Health Therapies: Development of the CIH Therapy Patient Experience Survey. Global Advances in Integrative Medicine and Health. 2024 Apr 6
- 2) **VA EMR-** For those completing the survey, we supplemented w CIH therapy use shown in EMR; covariates



Methods- How the Survey Defined CIH Therapies

- “ **Yoga** for 15 minutes or more, either by using an app, taking an online or in-person class, or doing it on your own after some training (We are not asking about just stretching or breathwork therapy. We are asking only about yoga)”
- “**Meditation, mindfulness or mantram repetition for 15 minutes of more**, either by using an app, taking an online or in-person class, or doing it on your own after some training”
- **Asked about # classes or sessions:**
 - “doing it on your own after some training”
 - “in-person with a community provider”
 - “in-person with a VA provider”
 - “at home guided by a VA provider”
 - “at home guided by a community provider”
 - “on my own, using a recording, video, or app” and “Other”



Methods- How We Determined “New” User

- Why did we care about respondent being a new CIH therapy user?
We were trying to measure change in outcomes before and after CIH therapy use, so needed to survey people just as they were starting.
- How determine “new” user?
 - 1) Pulled names to survey from the EMR based on patient having no use in 6 CIH therapies past 6 mos.
 - 2) Confirm with survey responses to the question asking # of times used in past 8 wks.
 - 3) Dropped “consistent” meditation, yoga, Tai Chi users – people who said they used
 - a) consistently (2+/wk) or
 - b) somewhat consistently used (~ 1x/wk) for 15+ mins or more for past 6 months.



Methods- The Survey Outcome Measures

Construct	Measure
Pain intensity and interference	Brief Pain Inventory (BPI)
Overall mental health, overall physical health, fatigue	PROMIS 10
Feeling depressed	PHQ2
Stress	Perceived Stress Scale (PSS)
Purpose in life	Life Engagement



Methods: Analysis

- **Restricted cubic spline (natural spline) regression**
 - Linear estimators for continuous outcomes (pain, physical health, mental health, stress, and having a purpose in life)
 - Multinomial estimators for categorical outcomes (depression, fatigue)
- **Covariates and controls**
 - # sessions used at baseline, use of other 6 CIH therapies
 - Demographic chars (gender, age, race, ethnicity)
 - Other pain tx (opioid use, pain clinic use, physical therapy use, spinal injections, number of pain sites on body)
 - Health comorbidities (Elixhauser)
 - Mental health utilization (MH care could diminish sx)



Methods: # of Sessions Veterans Used

Number of Veterans Using Yoga or Meditation

# of Sessions	Yoga at 3 Mos	Yoga at 6 Mos	Meditation at 3 Mos	Meditation at 6 Mos
1-4	432	506	768	883
5-9	233	317	395	535
10-19	116	213	190	393
20-49	56	142	103	297
50-79	8	21	19	137
80+	-	5	15	45



CLICK HERE TO DOWNLOAD THE FULL DOCUMENT OR THE HEADER INFORMATION

Results: The # of Yoga Sessions Assoc. with Changes

	During the 3 mos, having at least...	During the 6 mos, having at least...
Pain Interference w Life	NS	5+ sessions
Pain Severity	19+ sessions	17+
Overall Physical Health	14+	19+
Overall Mental Health	16+	39+
Perceived Stress	NS	21+
Purpose in Life	18+	19+
Feeling depressed		
Several/Half of the Days	13+	NS
Nearly Every Day	20+	81+*
Fatigue		
Moderate	15+	NS
Severe	1+	8+

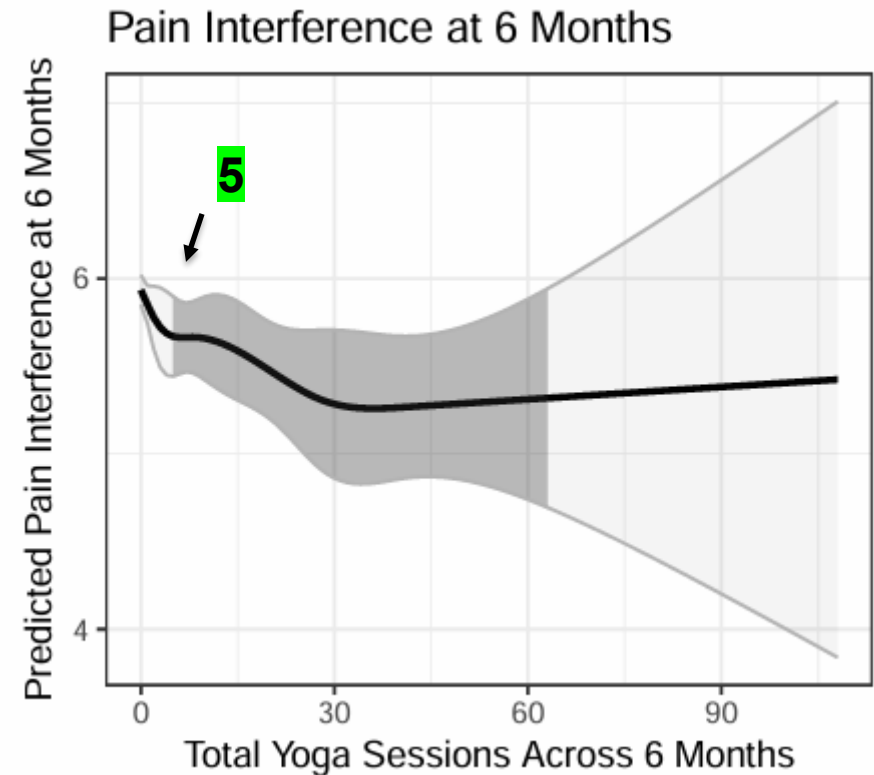
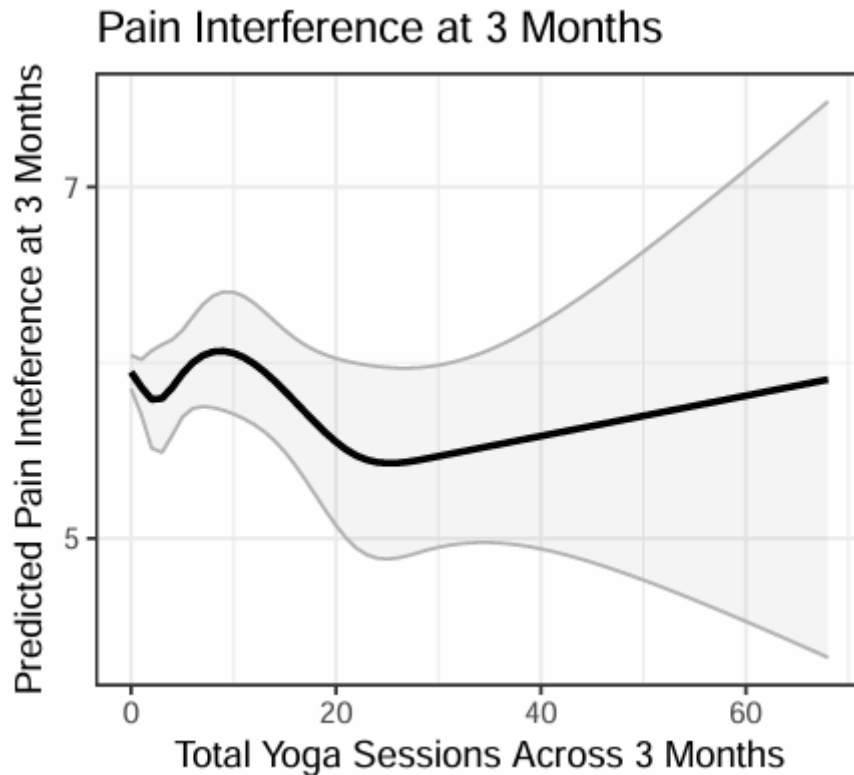
* So few people had this many sessions that we have to interpret this result with caution



Yoga: Pain Interference

At 3 months, using yoga was unassociated with a change in pain interference.

At 6 months, having 5-62 sessions was assoc. with decreased pain interference.

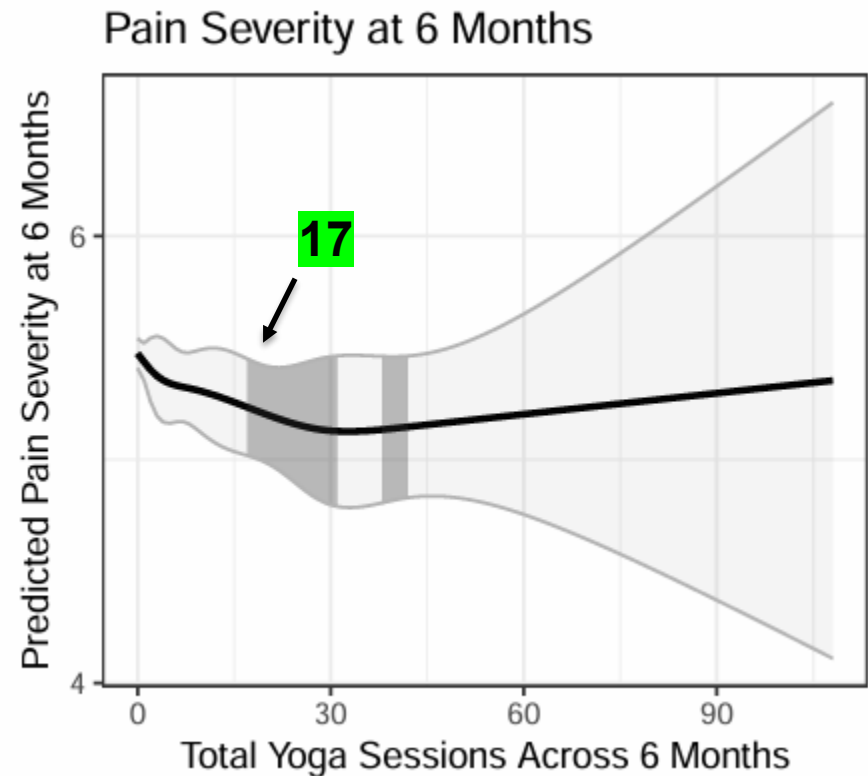
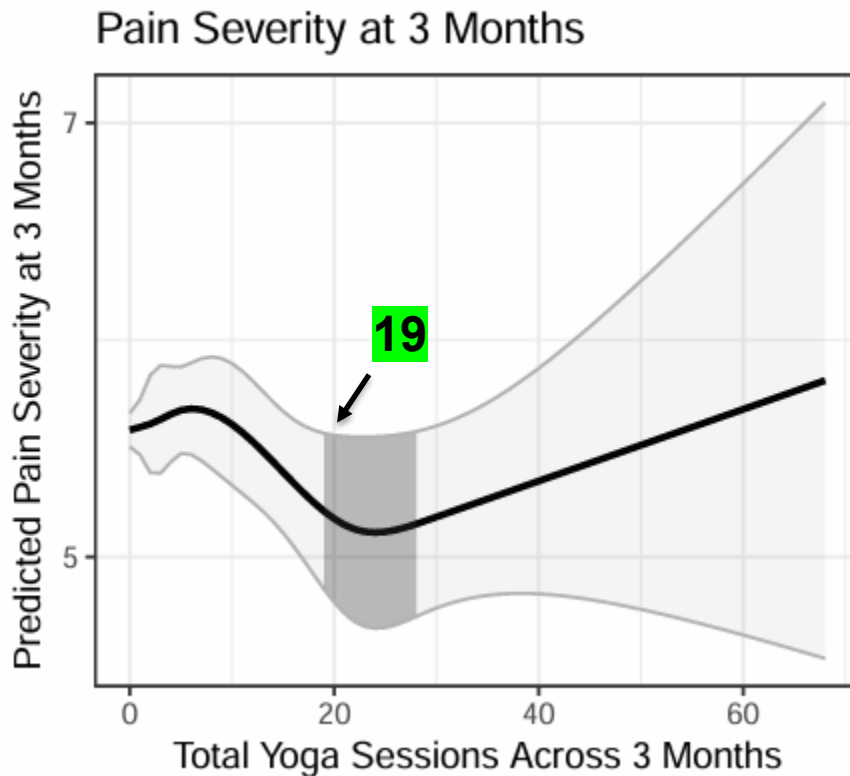




Yoga: Pain Severity

At 3 months, having 19-27 sessions yoga was associated w decreased pain severity.

At 6 months, having 17-41 sessions was too.

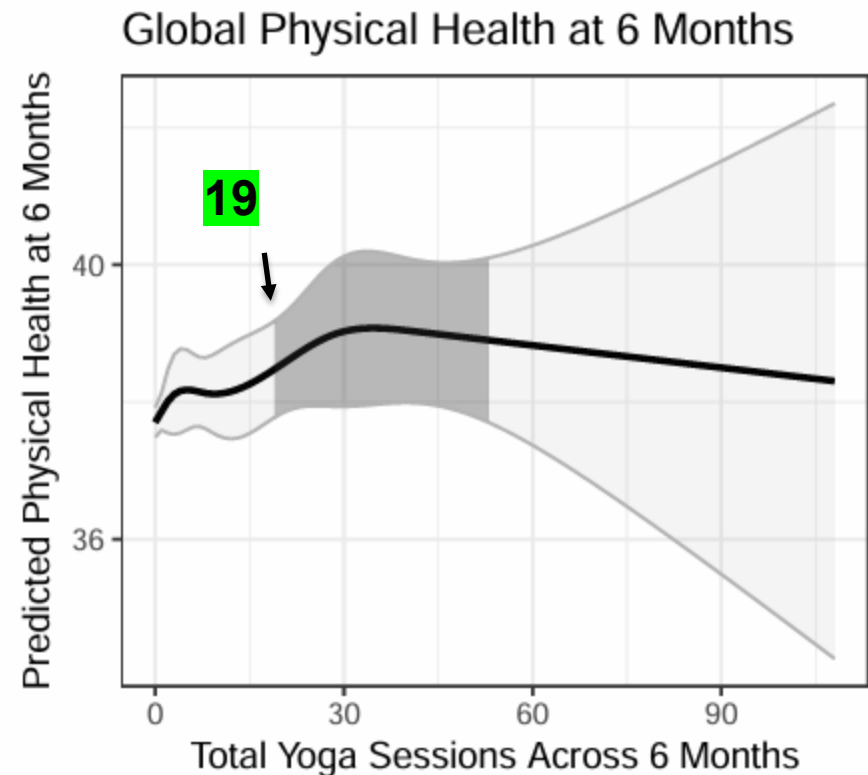
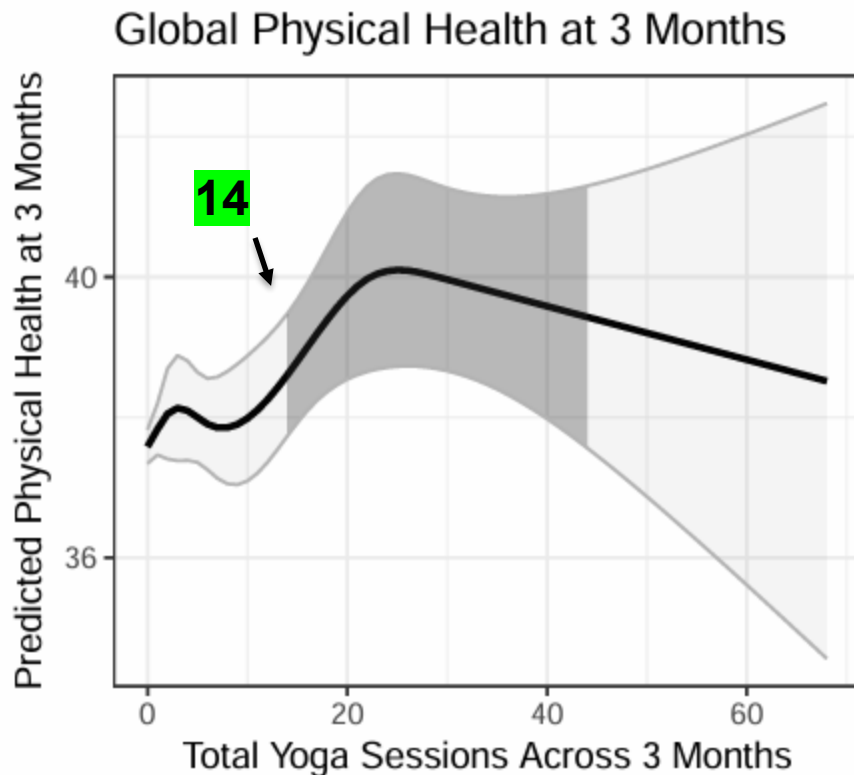




Yoga: Global Physical Health

At 3 months, having 14-43 yoga sessions was assoc. w increased global physical health.

At 6 months, having 19-52 sessions was too.



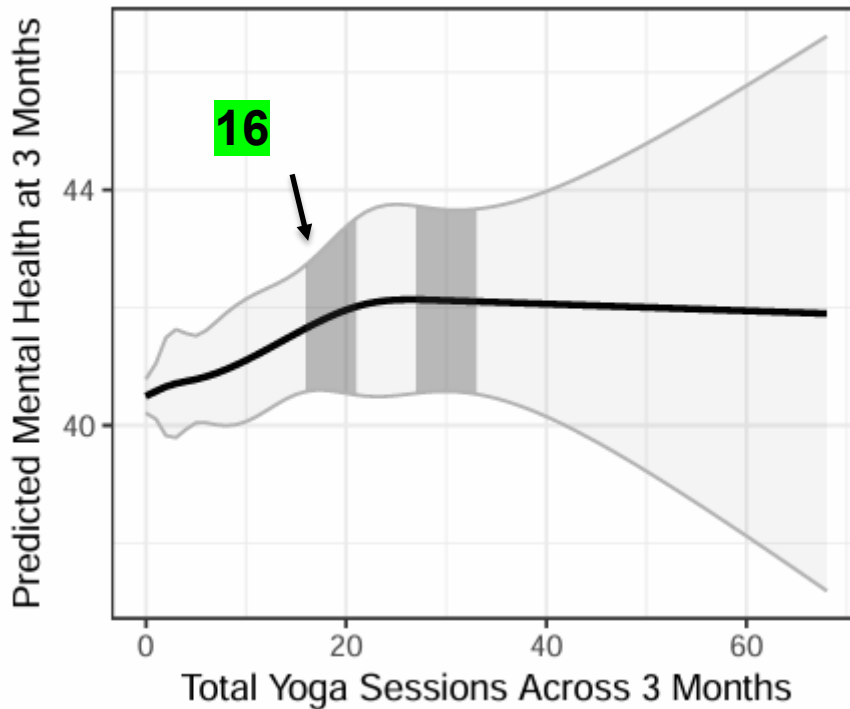


Yoga: Global Mental Health

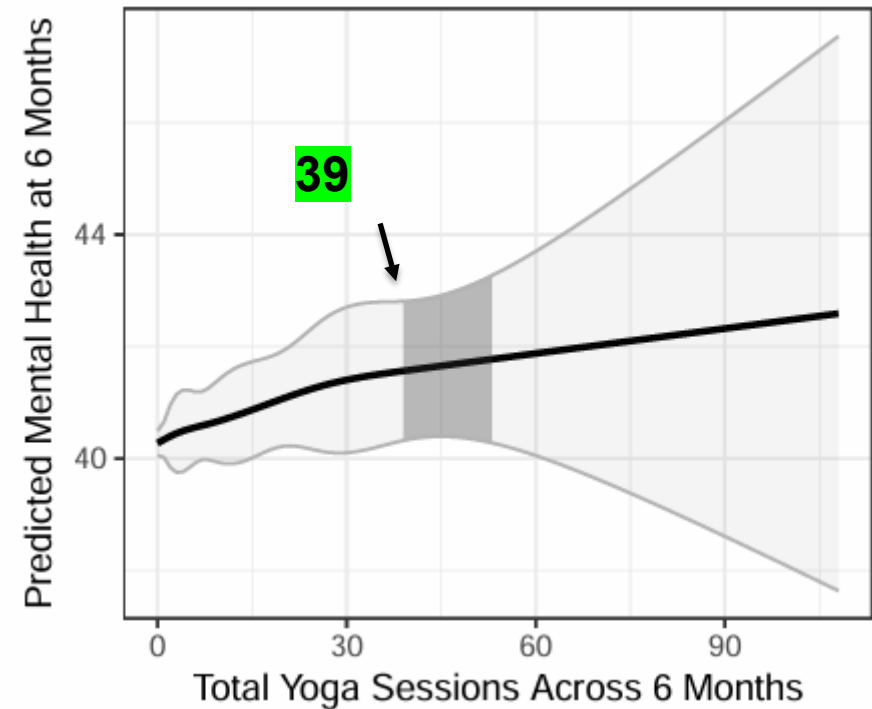
At 3 months, having 16-32 yoga sessions was assoc. w increased global mental health.

At 6 months, using 39-52 sessions was too.

Global Mental Health at 3 Months



Global Mental Health at 6 Months

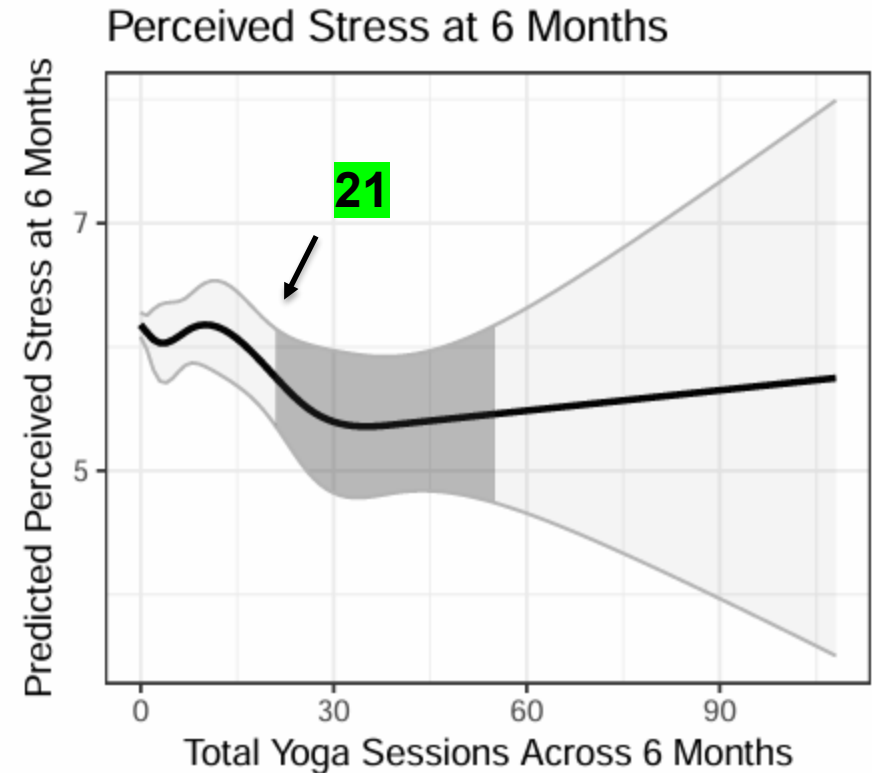
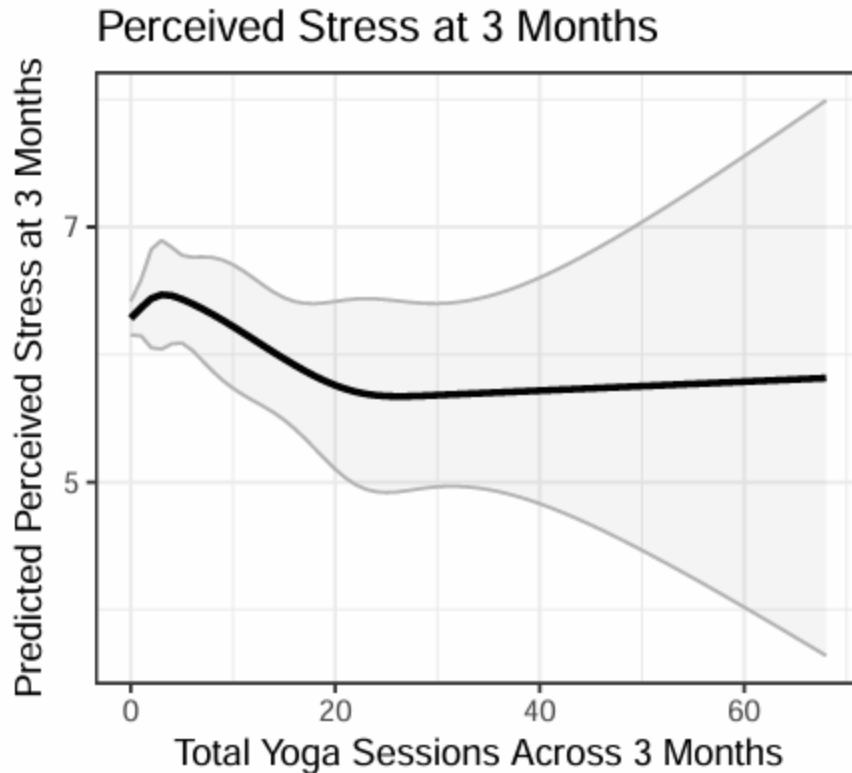




Yoga: Perceived Stress

At 3 months, using yoga was unassociated with a change in perceived stress.

At 6 months, however, using 21-54 sessions was assoc. w decreased perceived stress.

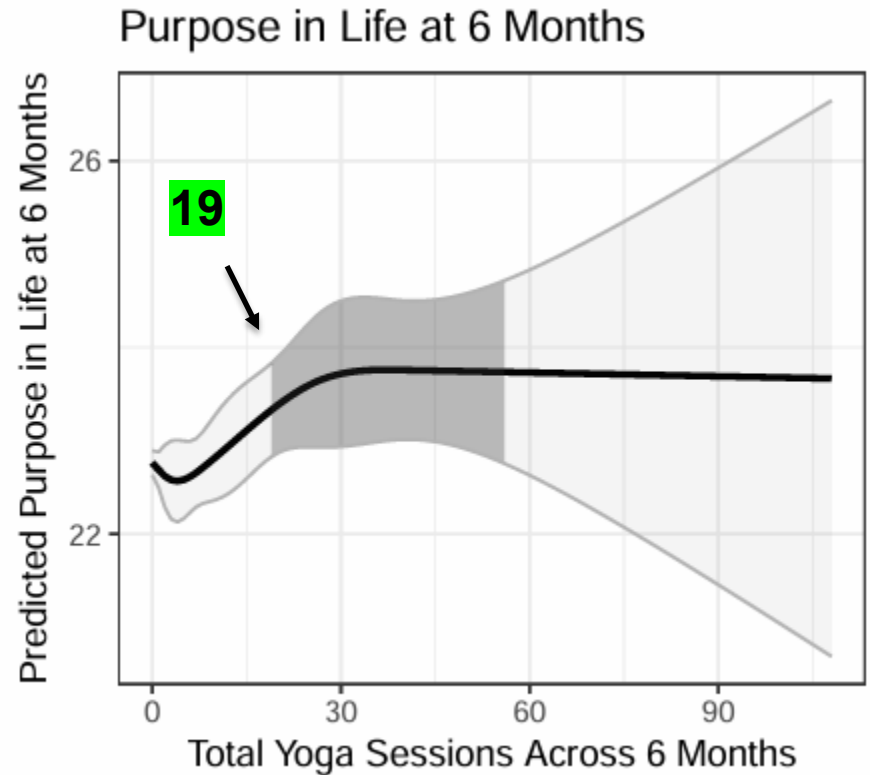
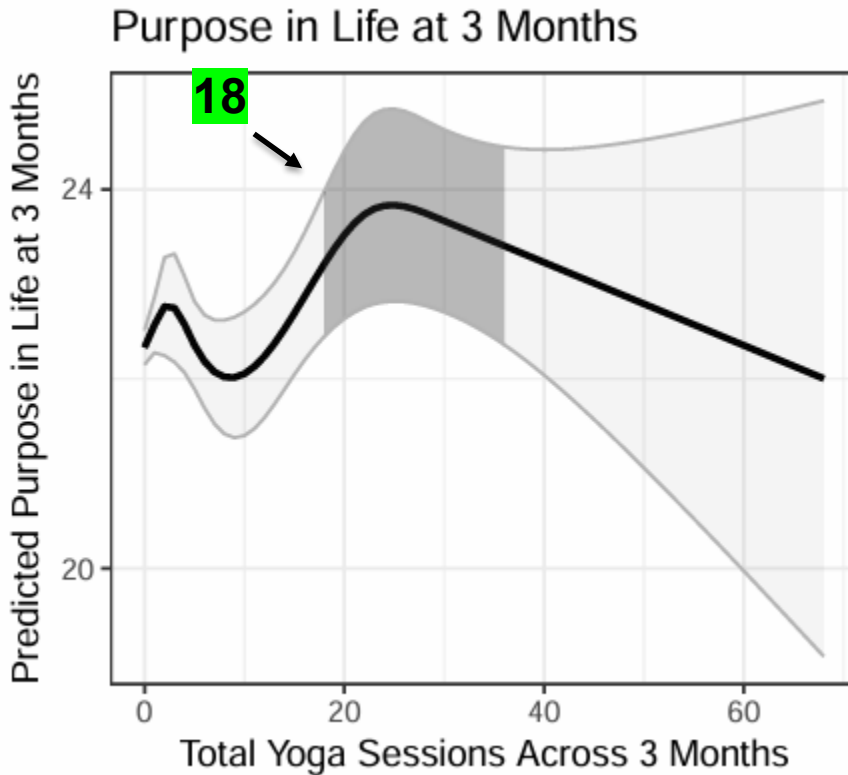




Yoga: Purpose in Life

At 3 months, having 18-35 yoga sessions was assoc. w an increased purpose in life.

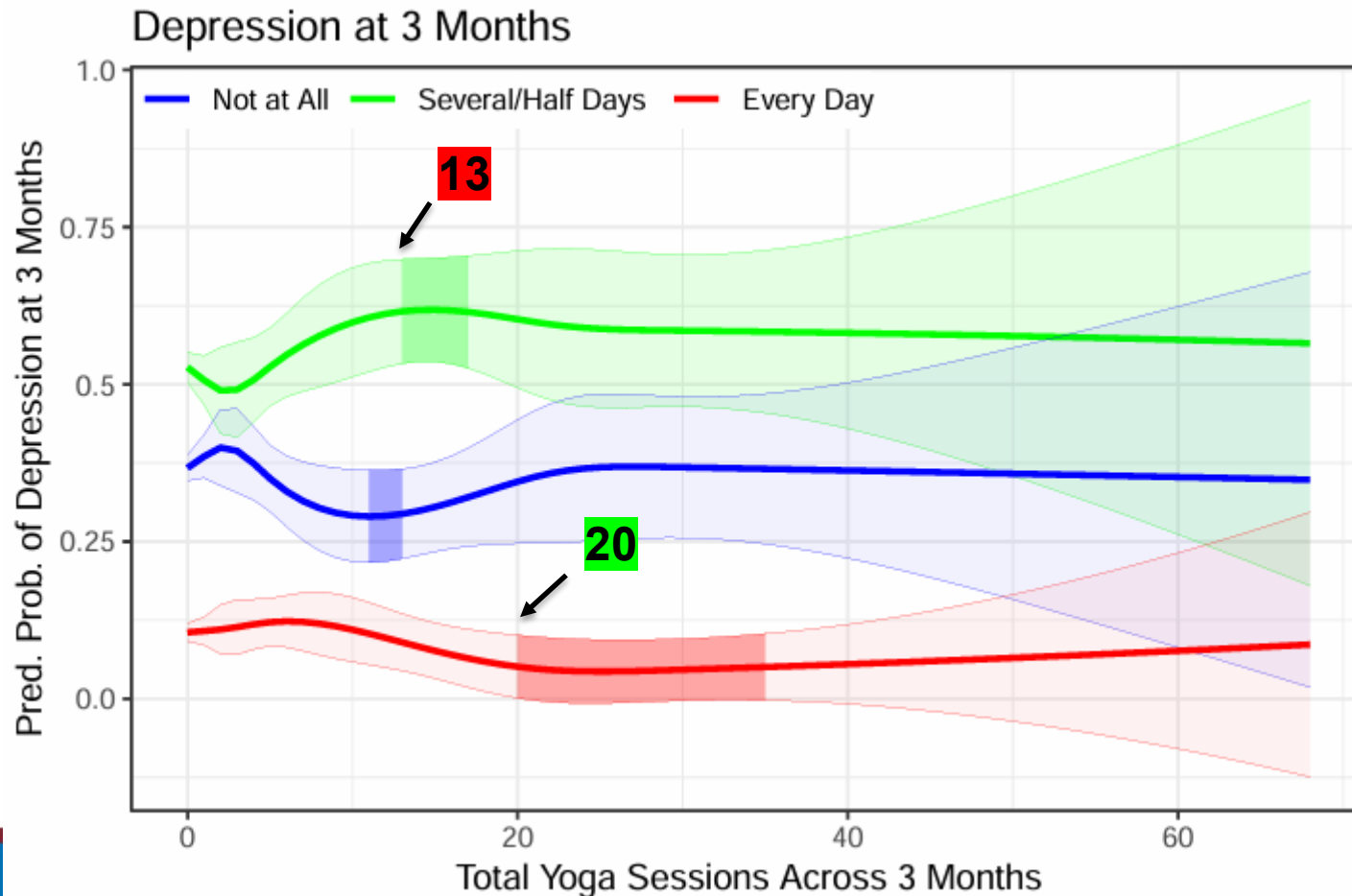
At 6 months, using 19-55 sessions was too.





Yoga: Depression

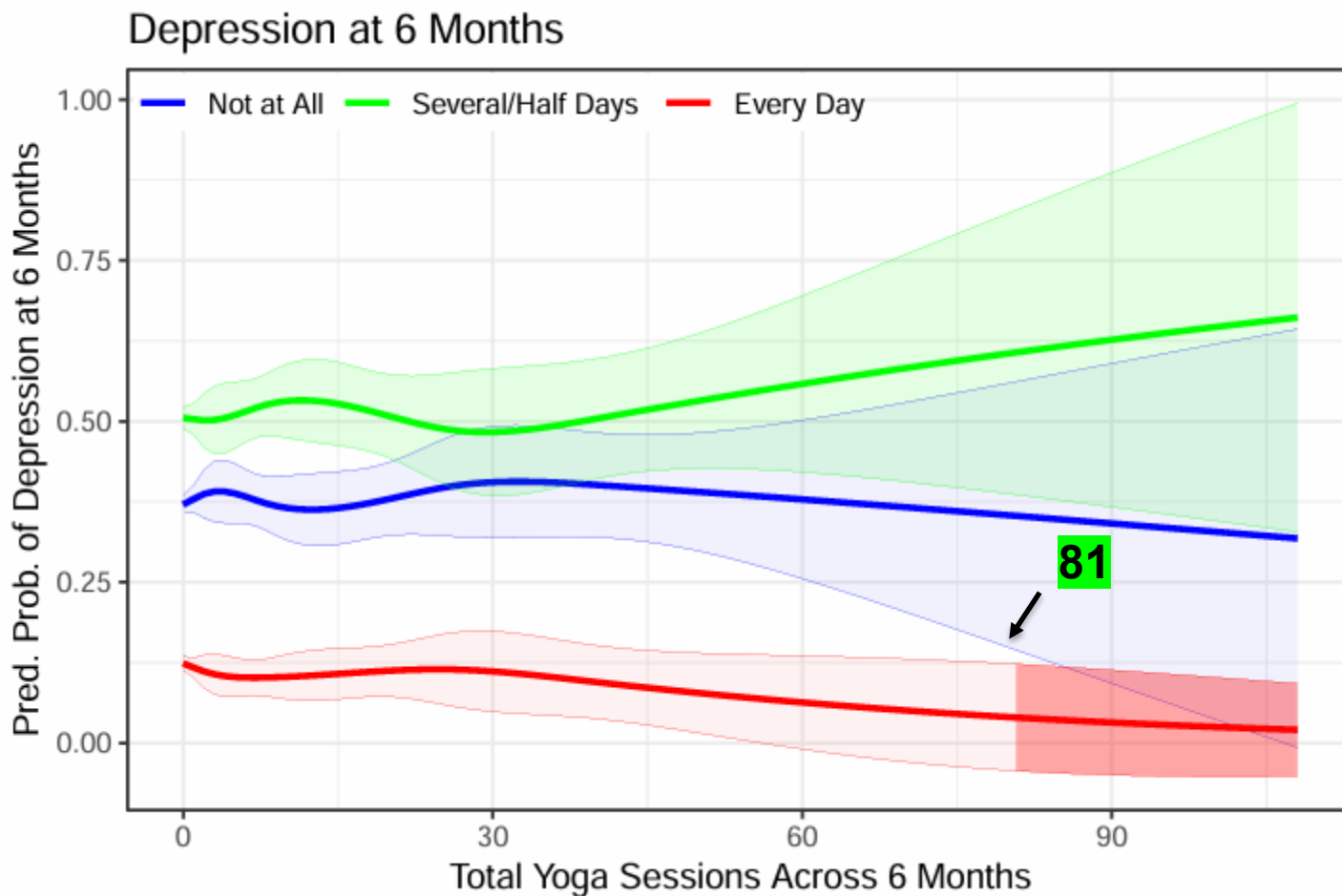
At 3 months, having 13-16 sessions of yoga was assoc. with an increase in the probability of feeling depressed several/half days each week. Having 20-34 sessions was assoc. w a in in the probability of feeling depressed every day/week. decrease





Yoga: Depression

At 6 months ~(180 days), using yoga wasn't assoc. with depression. Too few people had 81+ sessions, so these results aren't stable/meaningful.

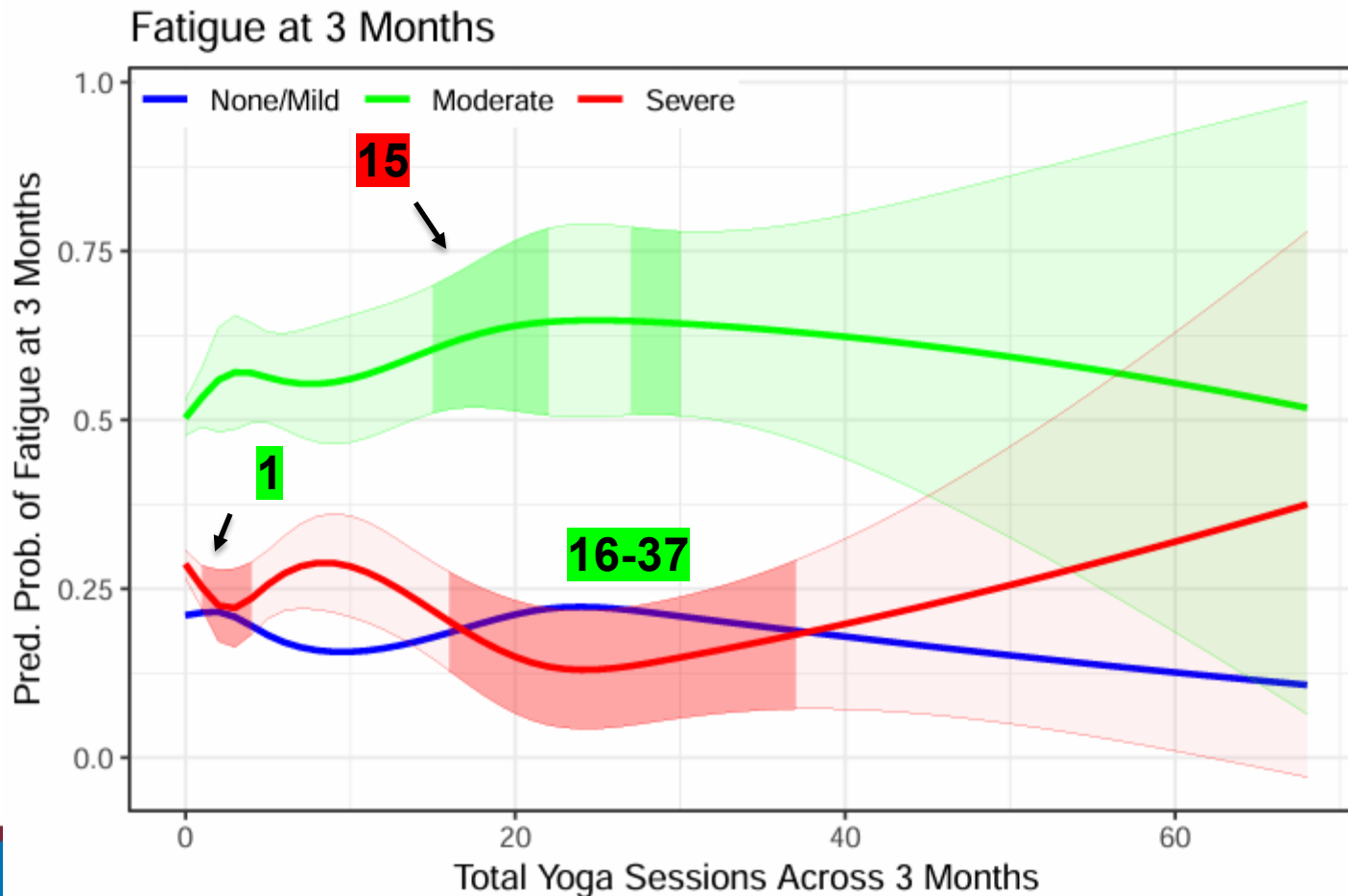




Yoga: Fatigue

At 3 months, having 15-29 sessions of yoga was assoc. with an increase in the probability of having fatigue several/half days per week.

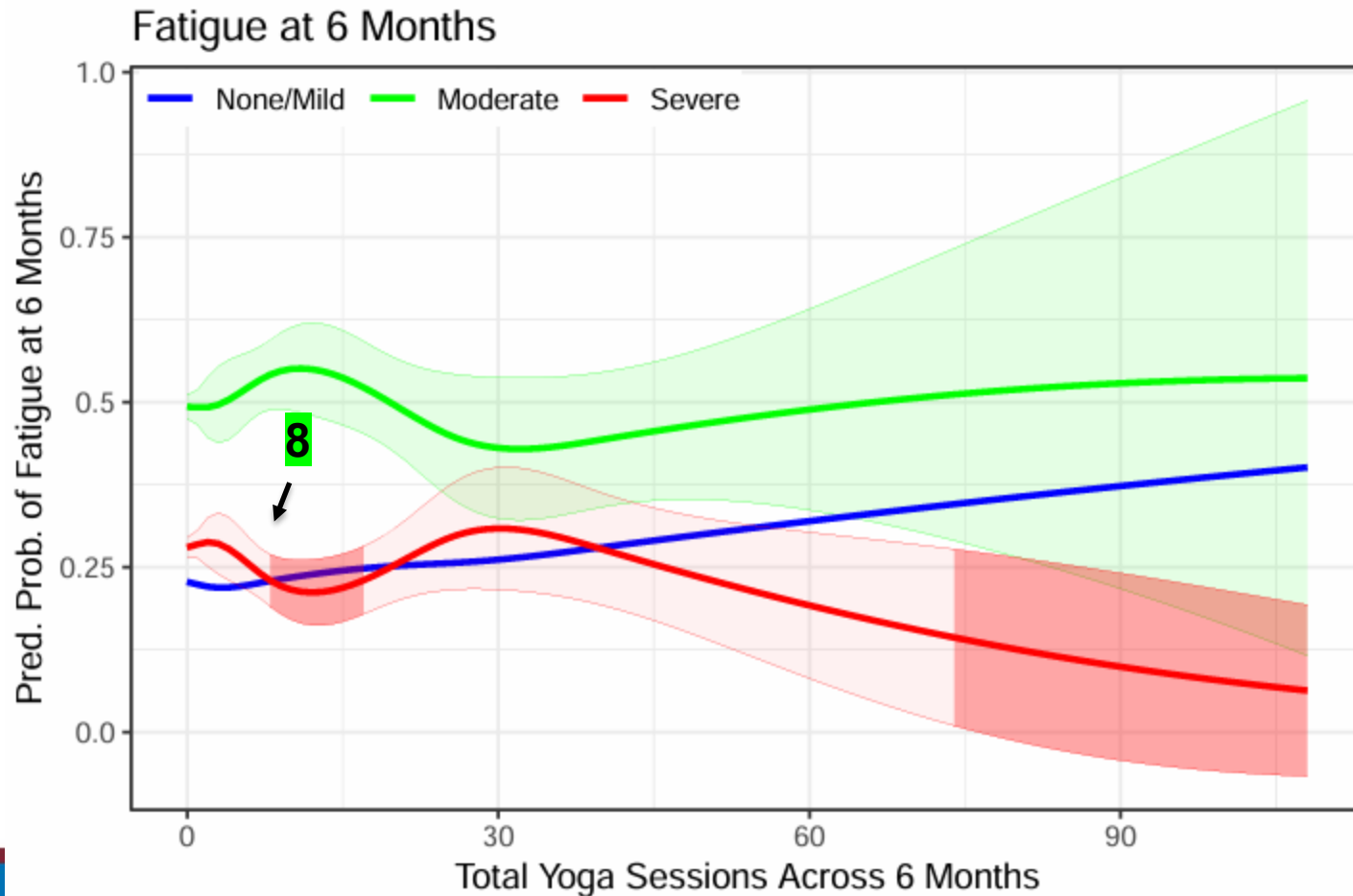
Having 1-3 and 16-37 yoga sessions was assoc. w a decrease in the probability of having fatigue every day in a week.





Yoga: Fatigue

At 6 months, having 8-17 sessions and 74+ sessions was associated with a decrease in the probability of having fatigue every day. But so few people had 74+ visits, the results are unstable/unmeaningful.





Results for Meditation



The # of Meditation Sessions Assoc. with Changes

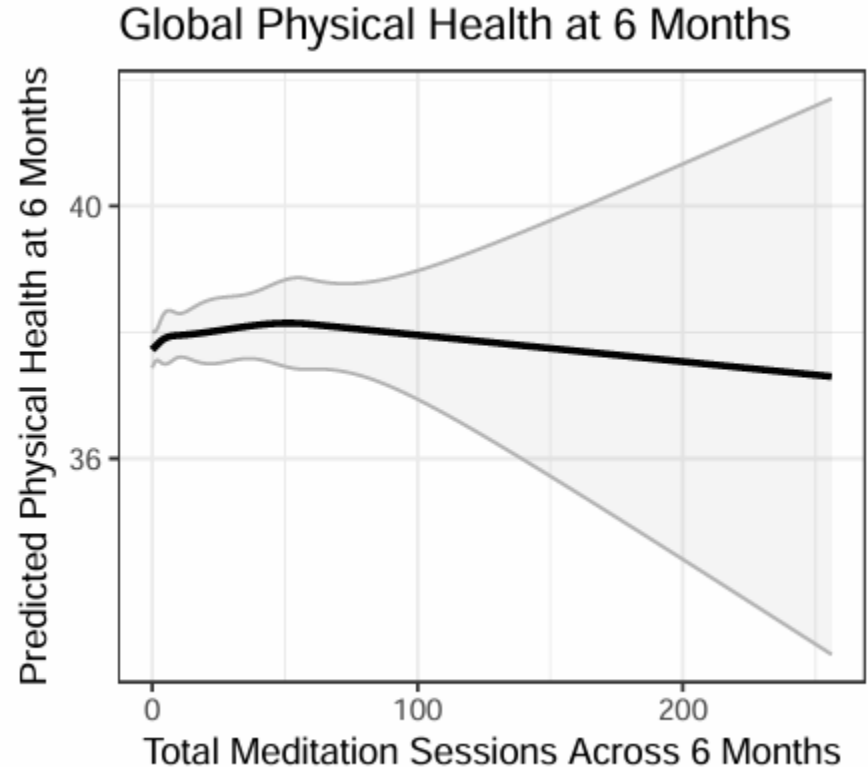
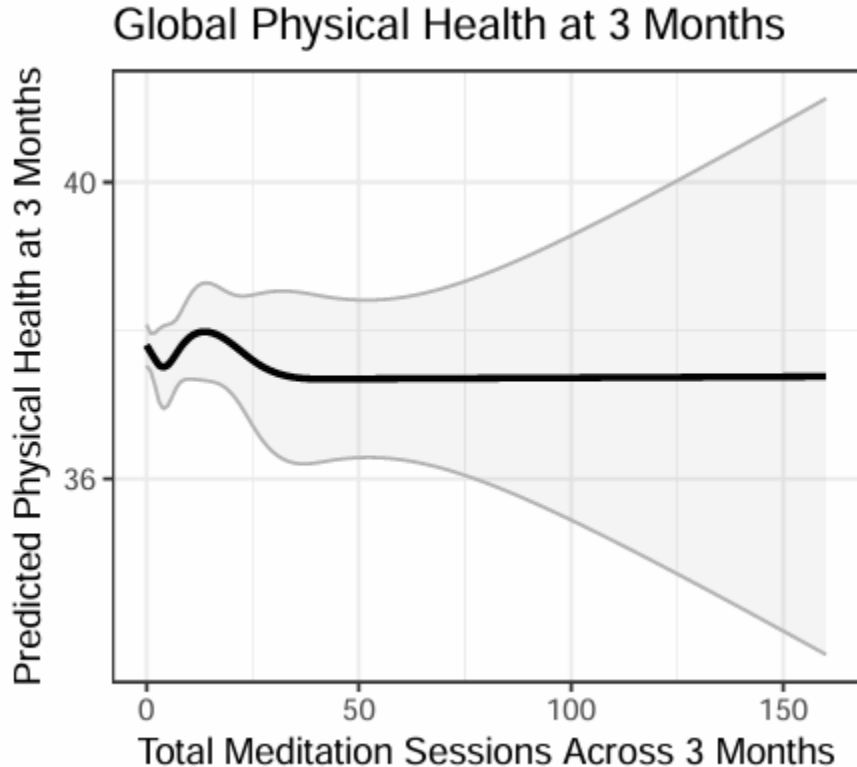
	During 3 mos, having at least...	During 6 mos, having at least...
Pain Interference in Life	10+ sessions	NS
Pain Severity	NS	NS
Overall Physical Health	NS	NS
Overall Mental Health	NS	15+ sessions
Perceived Stress	1+	32+
Life Purpose	NS	1+
Depression		
Several/Half of the Days	1+	NS
Nearly Every Day	33+	NS
Fatigue		
Moderate	21+	NS
Severe	56+ *	NS

* So few people had this many sessions that we have to interpret this result with caution



Meditation: Global Physical Health

Using meditation was unassociated with a change in global physical health at both 3 and 6 months.



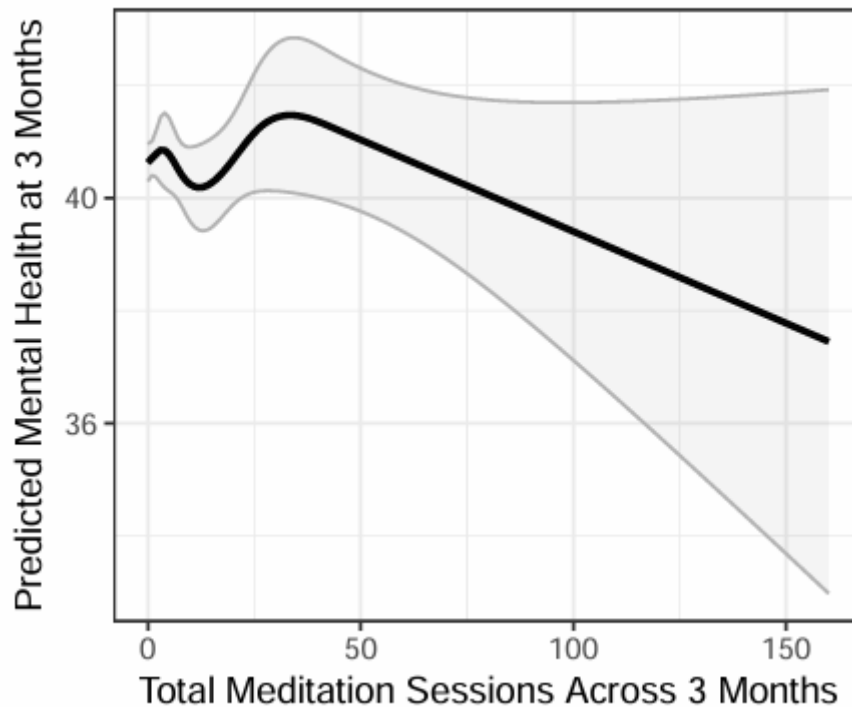


Meditation: Global Mental Health

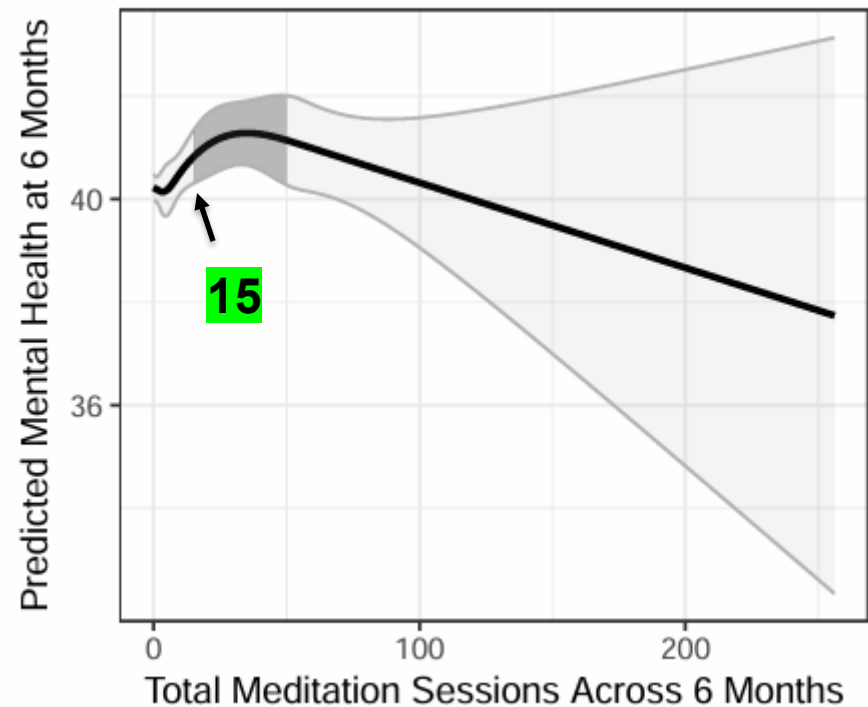
At 3 months, using meditation was unassociated w global mental health.

At 6 months, using 15-49 sessions of meditation was assoc. w an increase in global mental health.

Global Mental Health at 3 Months



Global Mental Health at 6 Months

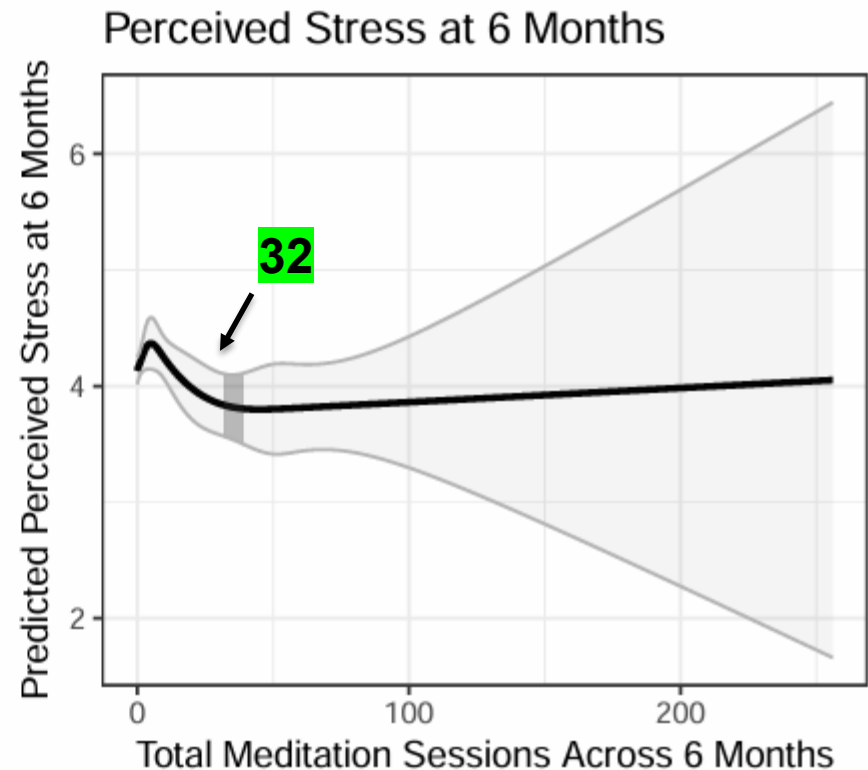
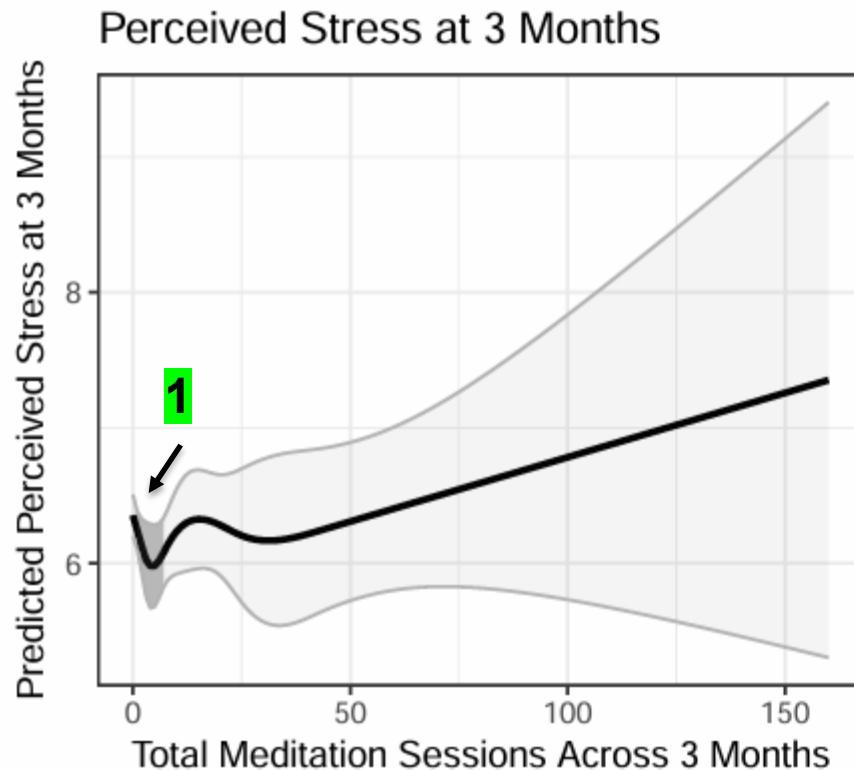




Meditation: Perceived Stress

At 3 months, using 1-6 sessions of meditation use was assoc/ with a decrease in perceived stress.

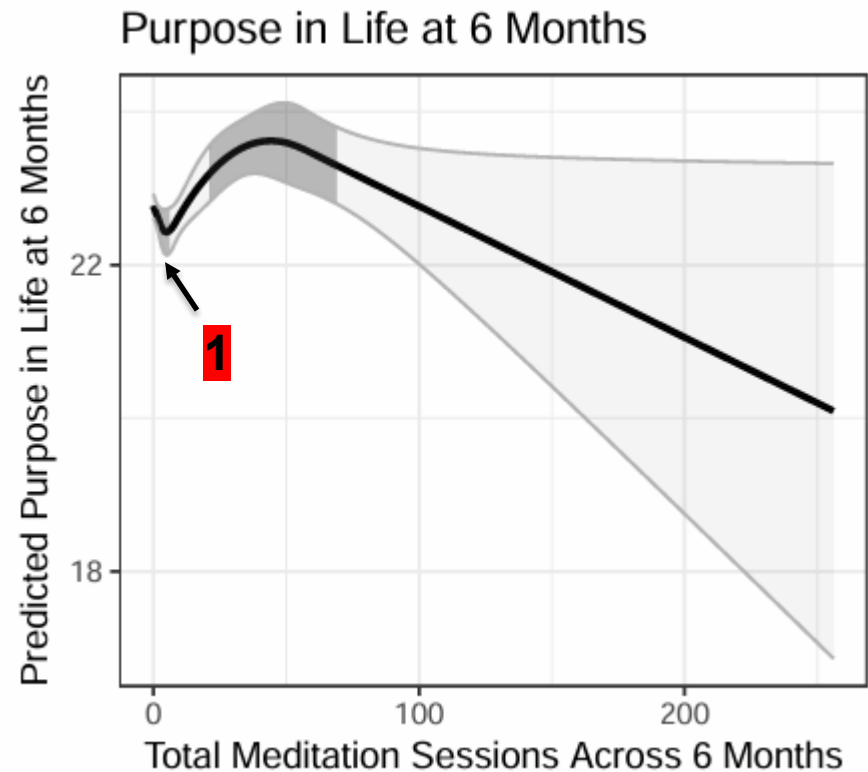
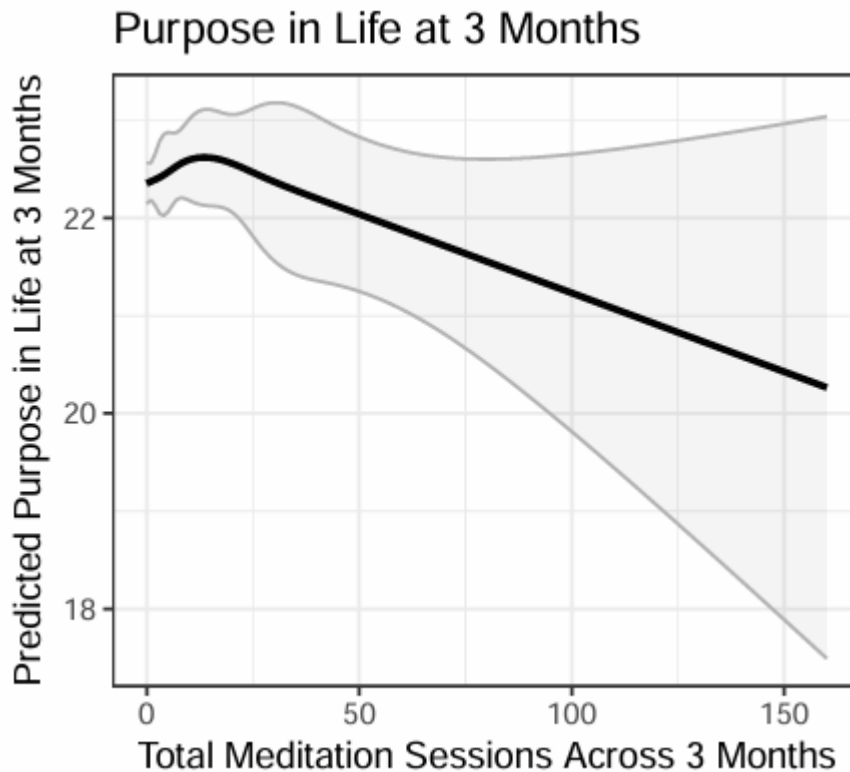
At 6 months, using 32-38 sessions was too.





Meditation: Purpose in Life

At 3 months, using meditation was unassoc. w having purpose in life. However, by 6 months, having 1-5 sessions was associated w a decrease in having purpose in life, but having 21-68 sessions was assoc. with an increase.

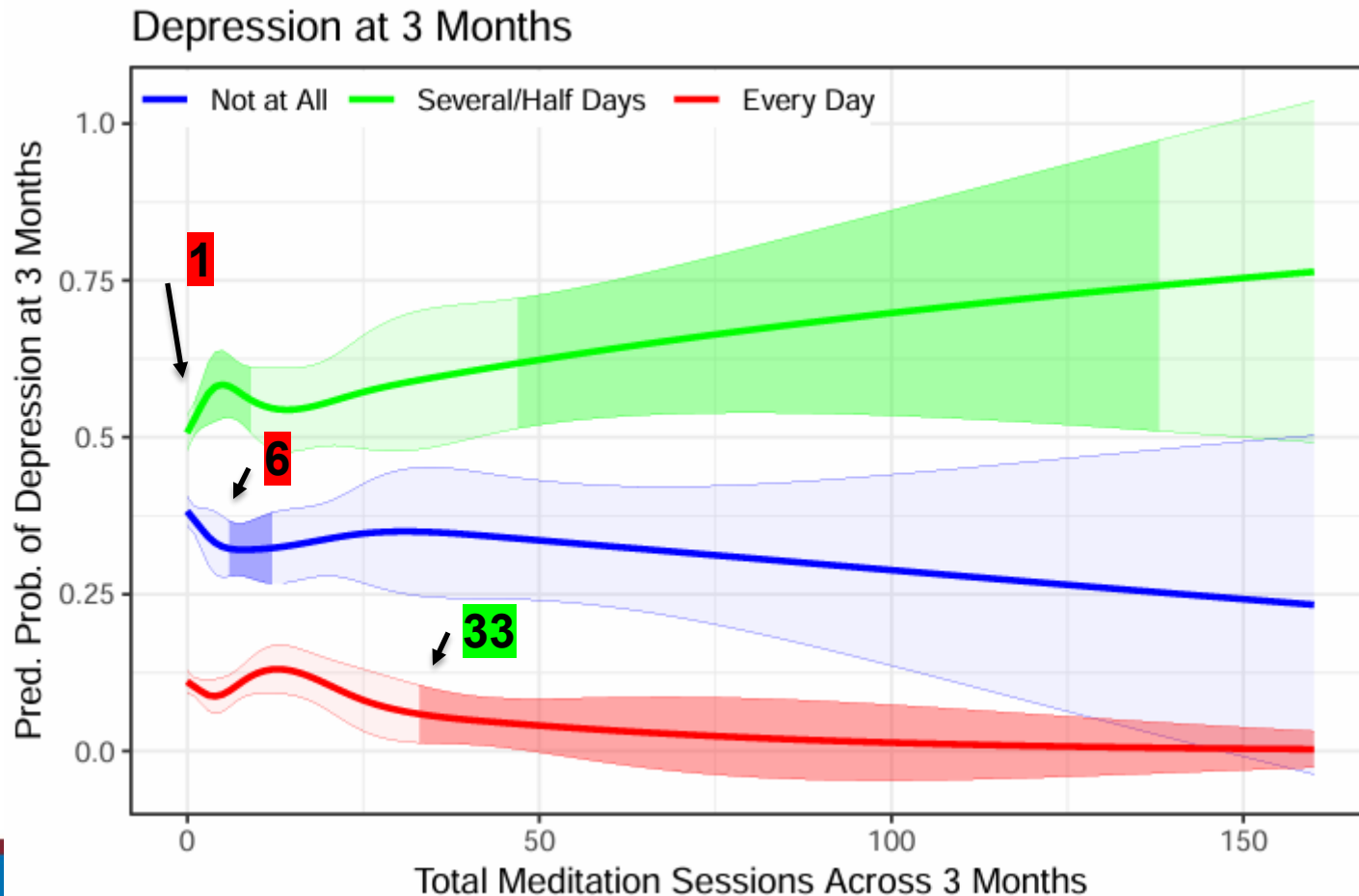




Meditation: Depression

At 3 months, having 1-9 sessions was assoc. w an increase in the probability of feeling depressed several/half days per week.

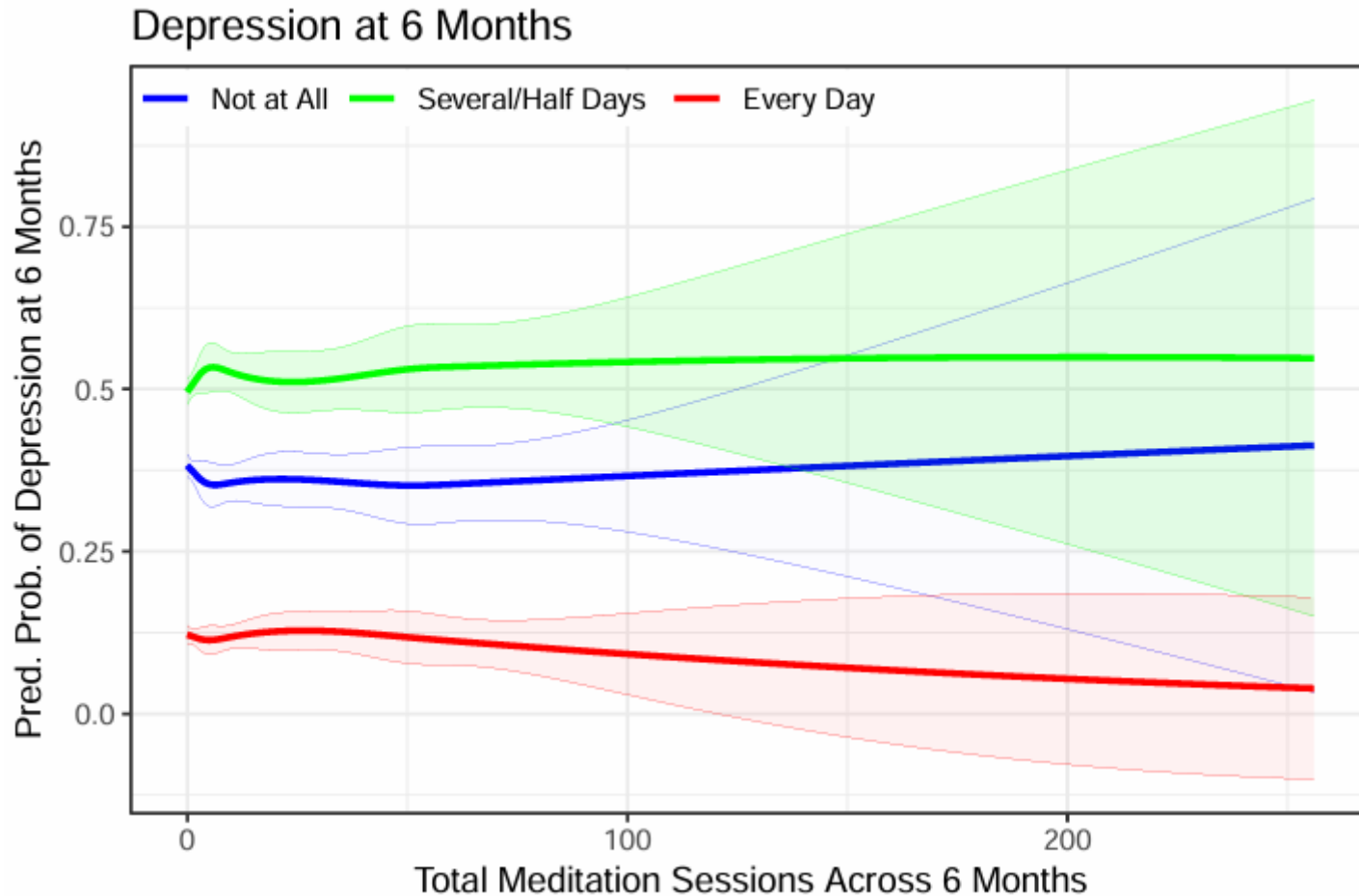
While having 33+ sessions was assoc. with a decrease in the probability of feeling depressed every day.





Meditation: Depression

At 6 months, meditation use was not associated with feeling depressed.

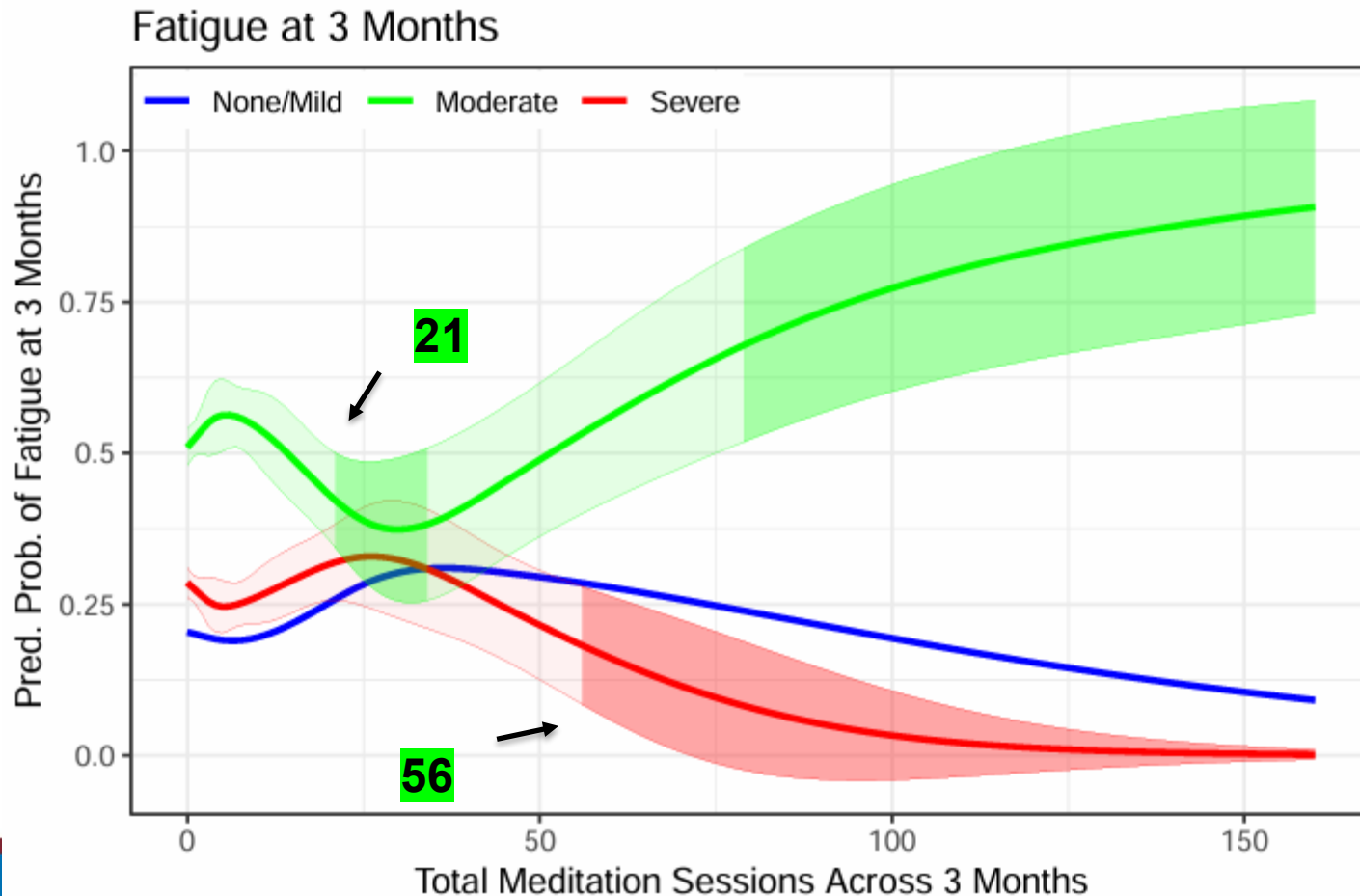




Meditation: Fatigue

At 3 months, using 21+ sessions of meditation was assoc. w a decrease in the probability of having moderate fatigue

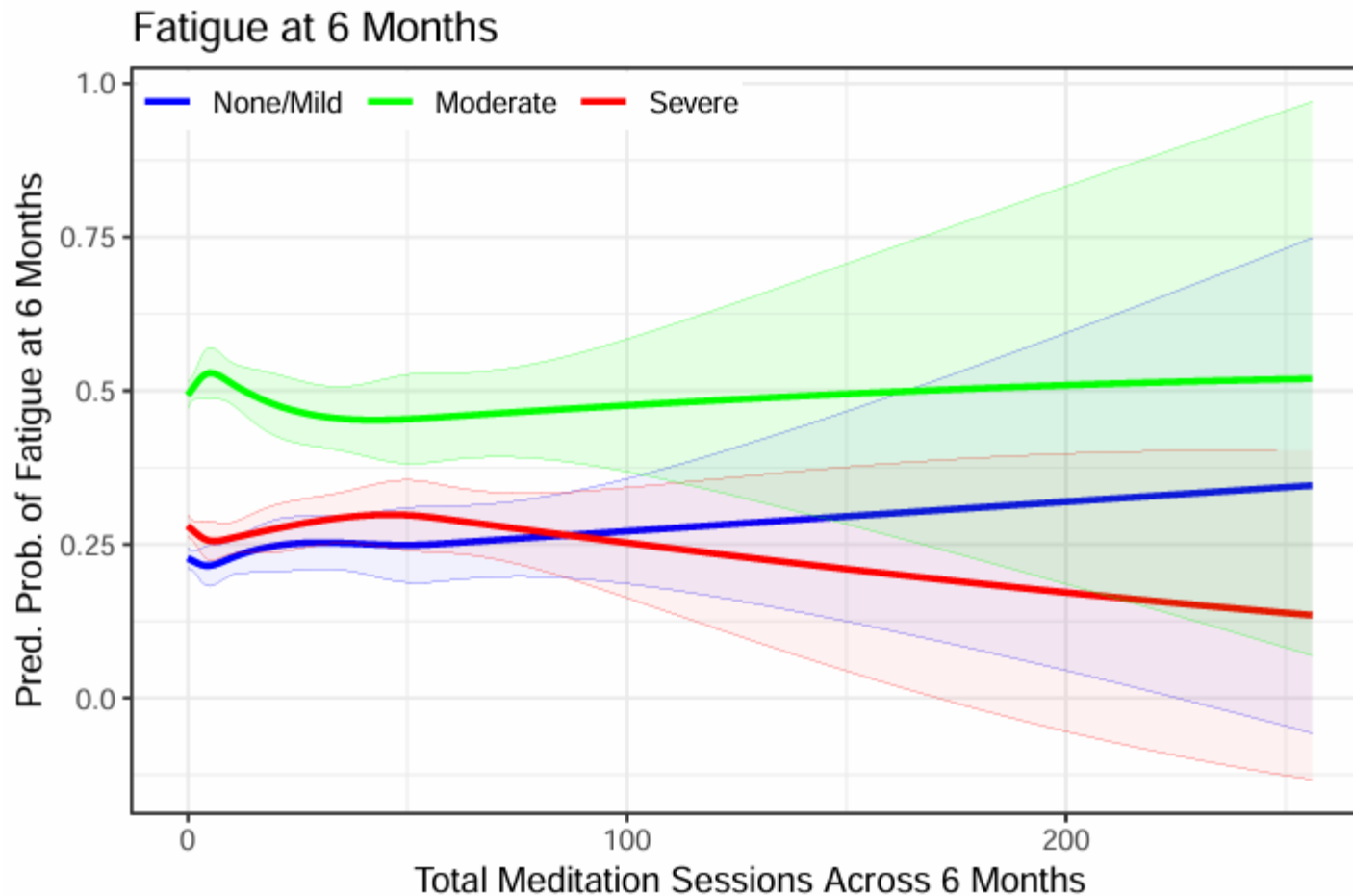
Having 56+ visits was associated w a decrease in the prob. of severe fatigue.





Meditation: Fatigue

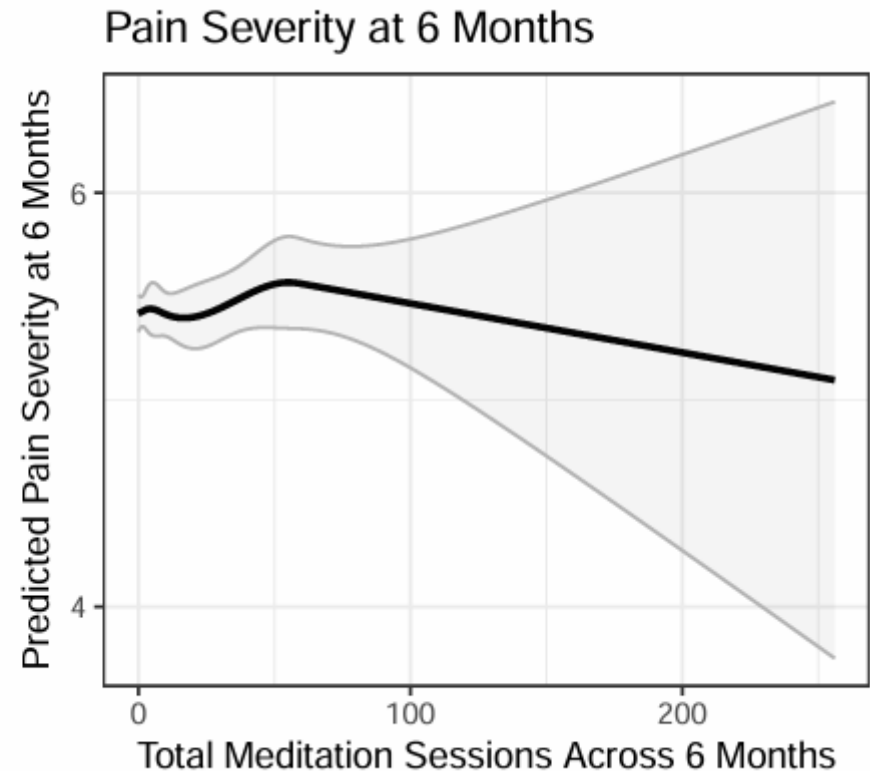
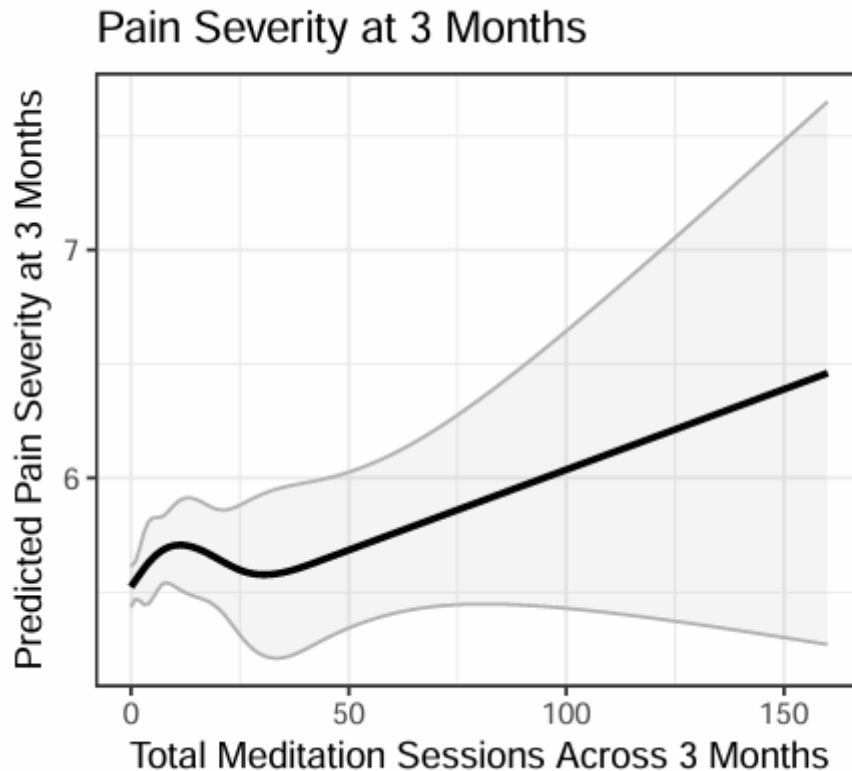
At 6 months, meditation use was not associated with fatigue.





Meditation: Pain Severity

Using meditation was unassociated with a change in pain severity at either 3 or 6 months.

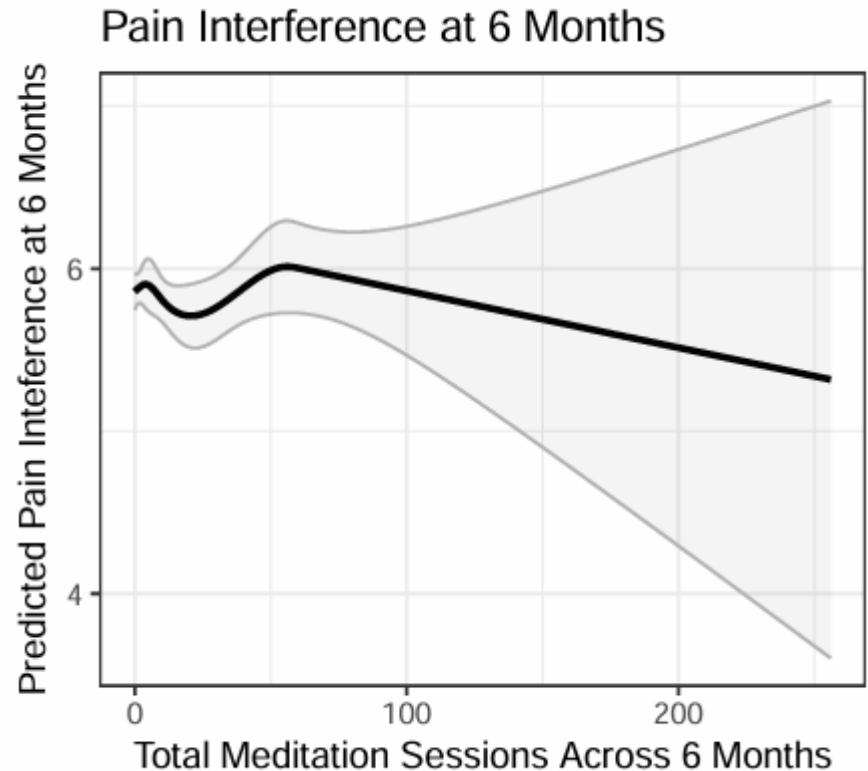
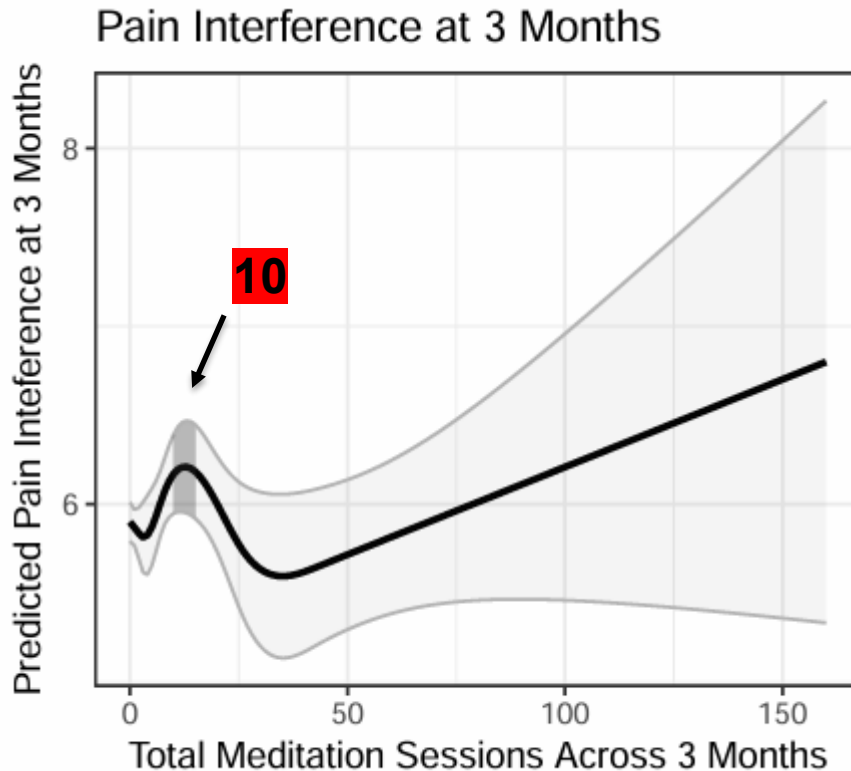




Meditation: Pain Interference

At 3 months, using 10-14 sessions of meditation use was associated with an increase in pain interference.

At 6 months, meditation use was unassociated with pain interference.





Limitations

- This is a non-experimental study, so we can't make statements about causality.
- Survey non-response may reduce precision and bias the estimates and predictions.
- Generally small doses of yoga or meditation over 6-month period, or too few using higher amounts.



Summary - Yoga

- Having as little as 14 or 19 sessions over 3 months was assoc. w improvements in pain severity, physical health, mental health.
- The pattern was similar over 6 months, using yoga now was assoc. w improvements in stress and pain interfering with life.
- However, the pattern is odd for fatigue and depression; using yoga was assoc. w improvements only for those w daily fatigue or daily feelings of depression. It had the opposite relationship for those with feeling fatigue or depression half the days.



Summary - Meditation

- Having as little as 1 session over 3 months or 28+ sessions over 6 mos was associated with improvements in stress.
- Having 13+ sessions over 6 months was assoc. w improvements in overall mental health.
- But, having 9+ sessions over 3 months was assoc. w pain interfering with life more.
- And just as with yoga, the pattern is odd for depression; using meditation was assoc. w improvements only for those w daily feelings of depression. It had the opposite relationship for those feeling depressed half the days.



Thank you!

Stephanie.Taylor8@va.gov

Stephen.Frochen@va.gov