

# Using mobile apps to tailor ACT skill training in-the-moment: Results from the ACT Daily app

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# Disclosures (support):

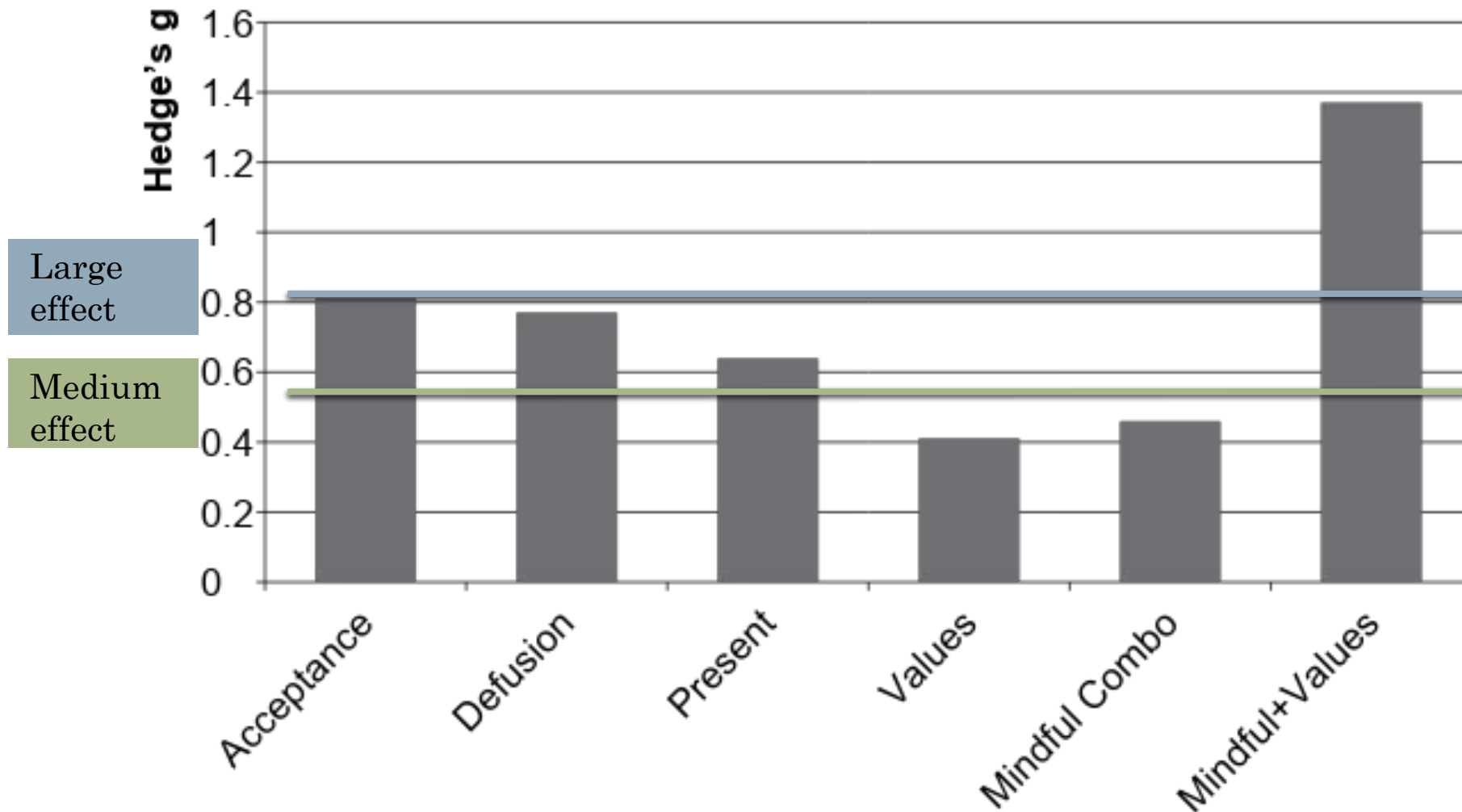
Relevant Financial Relationship for Michael Levin:

- Research Associate at Contextual Change LLC

# Opportunities with mobile apps

- Smartphones are
  - Very common (77% of adults own a smartphone)
  - Almost always available and used frequently
- High frequency, low intensity interventions
  - Generalizing skills into day-to-day life
- Opportunities to individually tailor the right skill at the right time

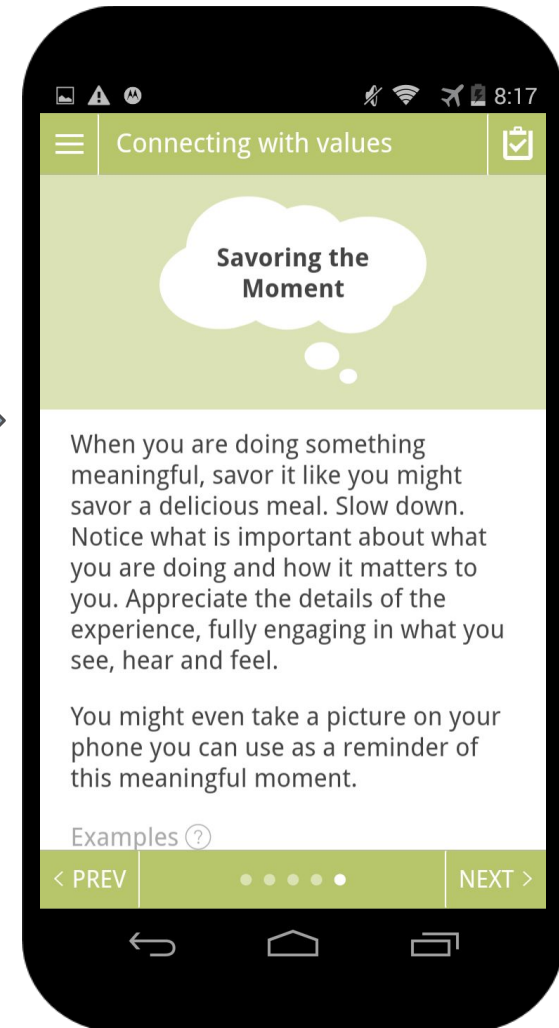
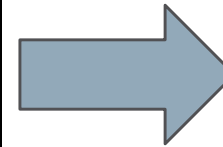
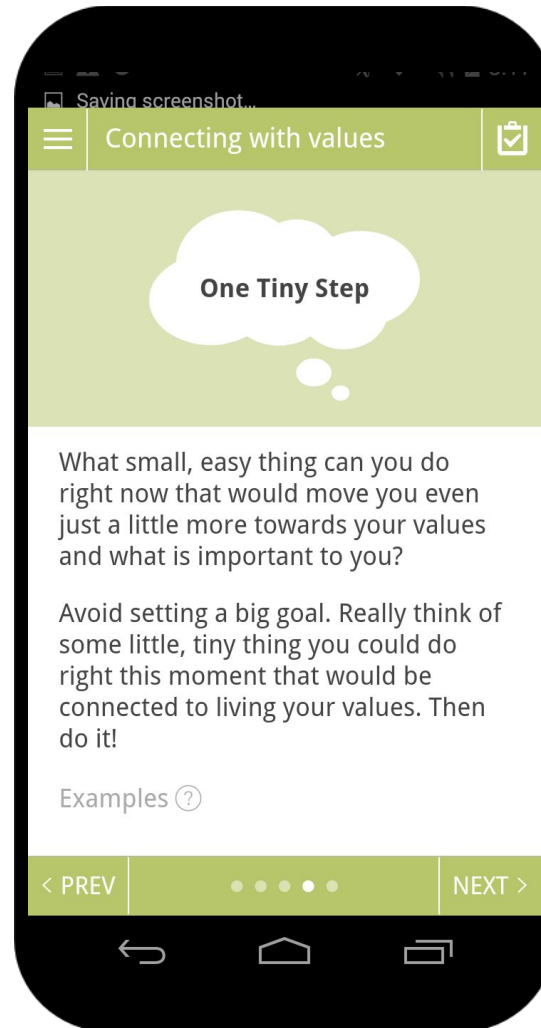
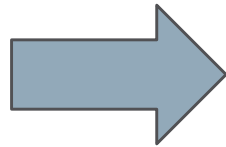
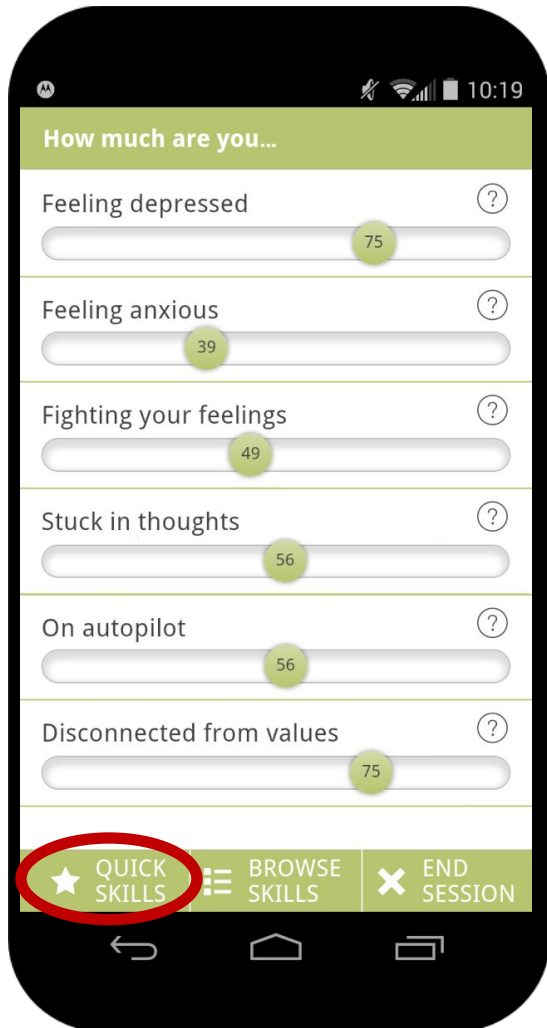
# Effect size by component vs. inactive conditions



# Tailoring ACT Skills

- ACT components are psychologically active
  - But when is each component more or less useful? Or does it matter?
- Assumptions
  - There are distinguishable ACT components that can be practiced in the moment
  - These components have unique functions linked to aspects of inflexibility
  - Components can be more or less effective depending on current context

# ACT Daily Version 1



13 depressed/anxious clients  
recruited by ACT therapist  
(Levin et al., 2017)

11 depressed/anxious clients  
on counseling center waitlist  
(Haeger & Levin, In Prep)

Baseline survey

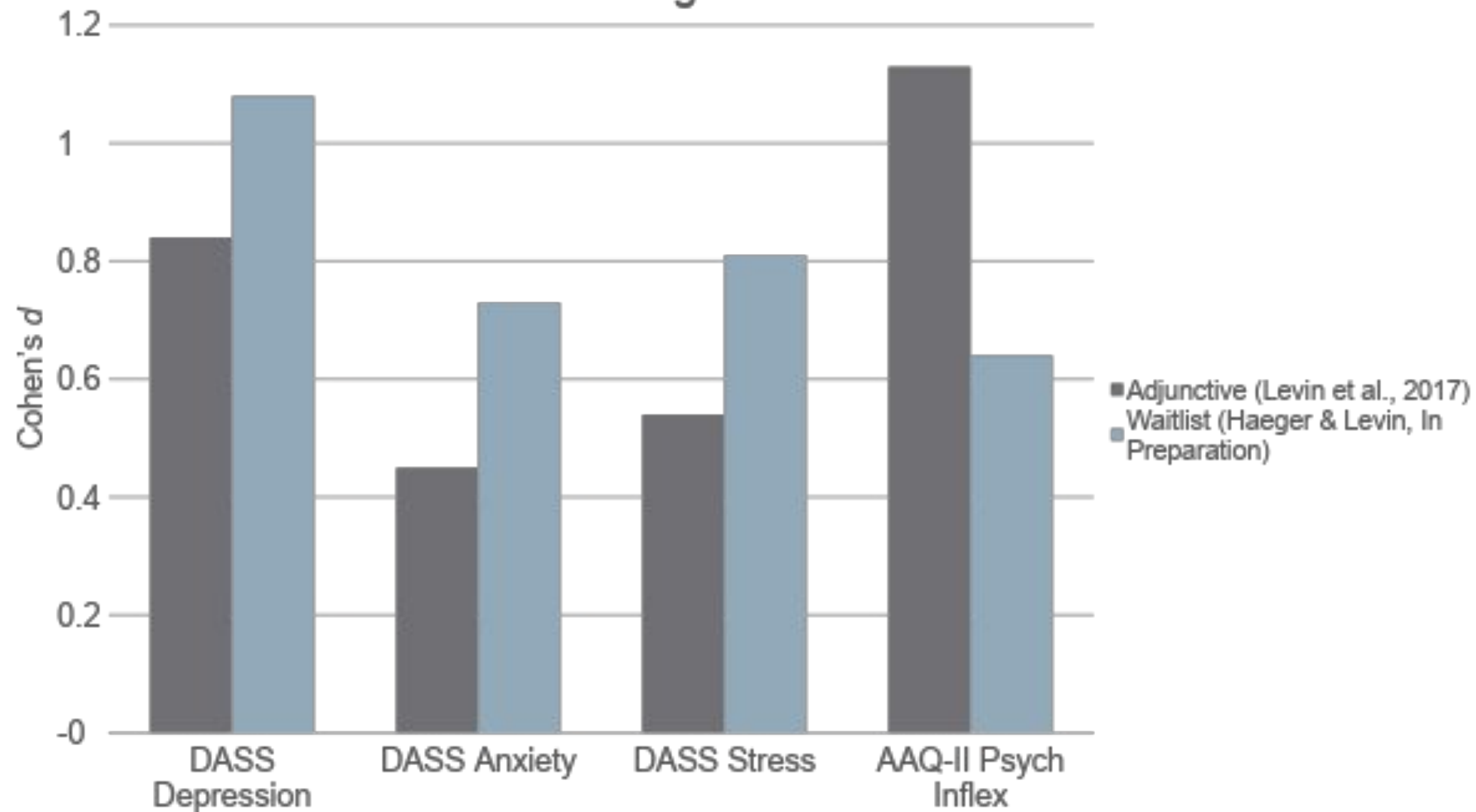
Orientation to ACT Daily app

Use ACT Daily for 2 weeks while  
in therapy ( $n = 13$ ) or waiting to  
start therapy ( $n = 11$ )

Prompted 3x a day  
*85% and 82% used app at  
least once a day*

Post Assessment 2 weeks later  
*100% Completion*

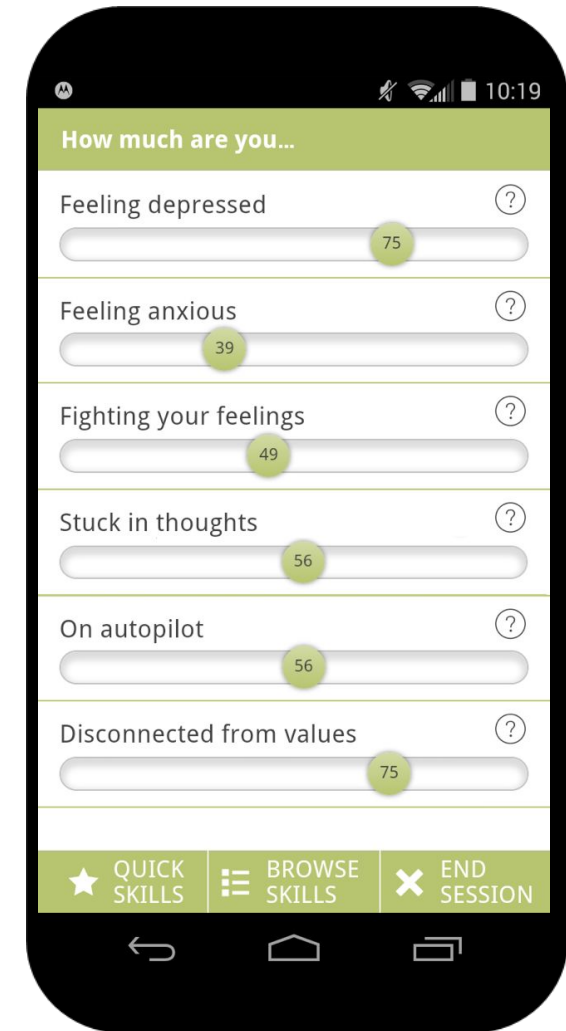
## Pre-Post Changes Over Two Weeks





# In-the-moment effects

- Do ACT check-in variables improve immediately after skill coaching?
  - Yes, though effects are small ( $d$  ranging from .18 - .43)
- Do ACT in-the-moment effects strengthen over time?
  - Yes, but only for the waitlist clients with small effects ( $d$  ranging from .18 - .42)
- Do ACT skills have targeted effects on check-in variables?
  - Yes, but only for acceptance and mindfulness



# Next steps

- Results suggest an ACT app that tailors skills based on in-the-moment check-in responses is effective
  - And can be integrated as an adjunct or waitlist service
- The app testing period was very short, did not have a comparison condition, and used a limited prototype
- Are effects due specifically to tailoring ACT skill coaching in-the-moment?

# ACT Daily

ACT Daily

How much are you...

None 0 Extremly 100

Feeling sad/depressed

Feeling anxious/afraid

Fighting your feelings

Stuck in thoughts

Running on autopilot

Disconnected from values

What would you like to do?

Quick Skill

Depth Skill

End session

ACT Daily

Getting Unstuck Depth Skills

Leaves On A Stream Mindfulness

Labeling Thoughts Mindfulness

Practicing Flexibility With A Thought

Noticing If I'm Stuck In Thoughts

Watching Thoughts Pass By Like...

Your Mind Is Like...

ACT Daily

Label Your Thoughts

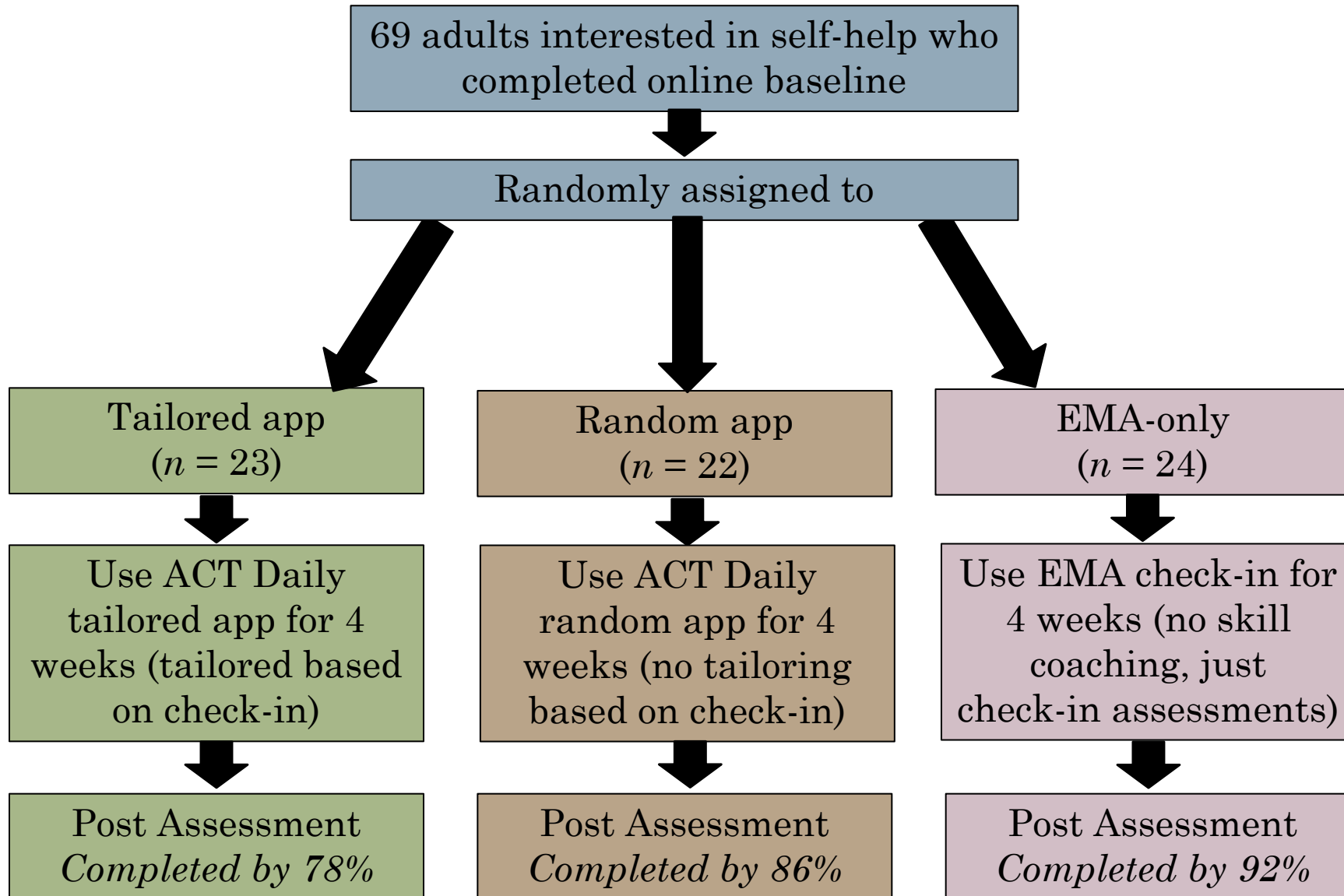
Add the label "I'm having the thought that..." to each thought you have for the next minute. Say it out loud or in your head. Recognizing these are all just thoughts.

[Examples](#)

Another skill

Post assessment

Powered by Qualtrics



# Program Usage

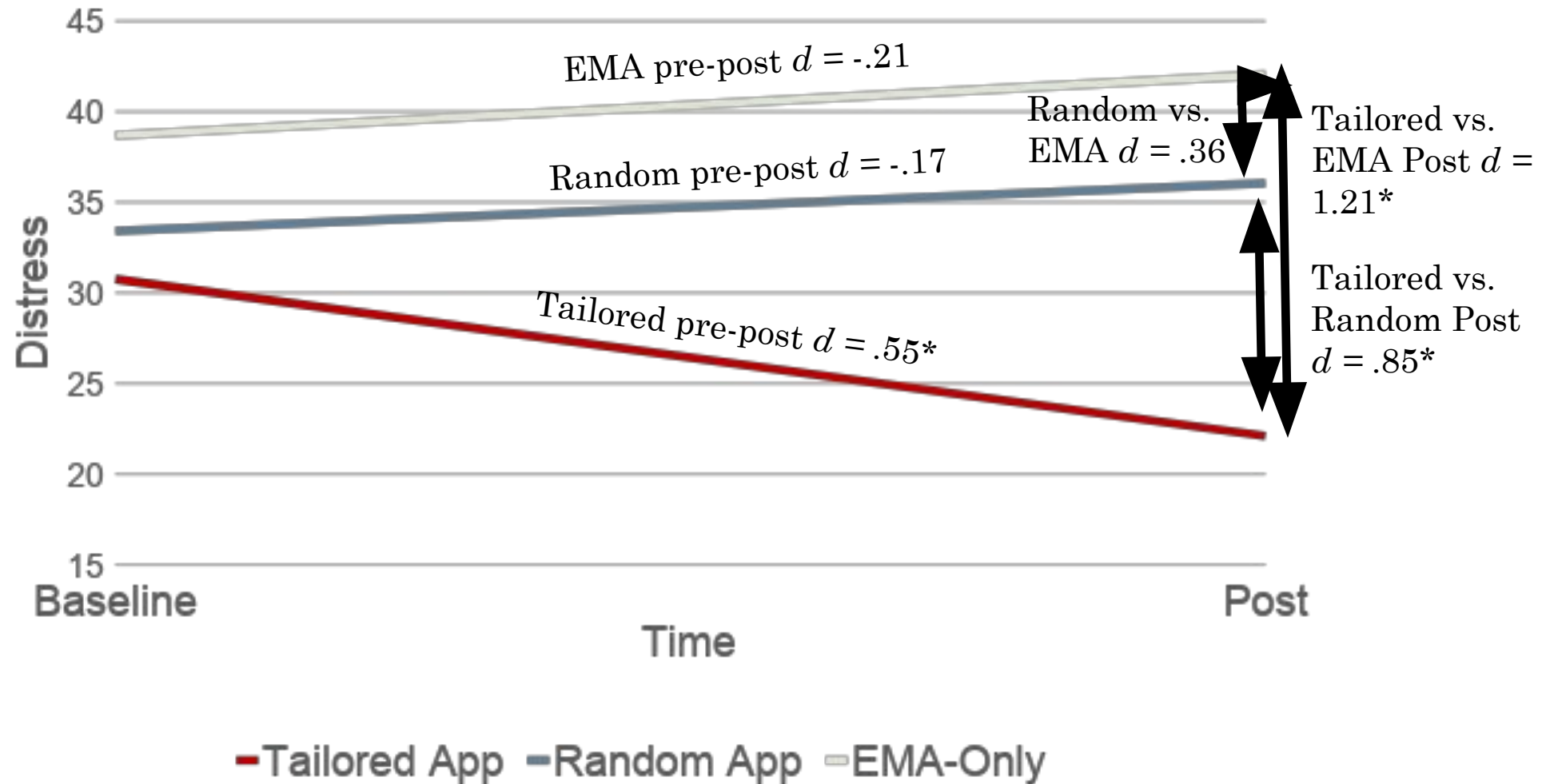
- Check-in assessment completion higher in EMA-only vs. Random and Tailored conditions
  - EMA  $M = 46.71$  check-ins,  $SD = 13.86$
  - Random  $M = 35.86$ ,  $SD = 18.99$
  - Tailored  $M = 25.39$ ,  $SD = 20.17$
- Skill coaching completion higher in Random vs. Tailored conditions,  $t = 2.63$ ,  $p = .01$ ,  $d = .78$ 
  - Random  $M = 25.36$  skill sessions,  $SD = 17.94$
  - Tailored  $M = 13.57$ ,  $SD = 11.57$

# Program Satisfaction

- System Usability Scale scores equivalently high between Random and Tailored conditions
  - Random  $M = 87.88$ ,  $SD = 10.19$
  - Tailored  $M = 83.13$ ,  $SD = 11.19$
  - Previous ACT Daily studies SUS  $M = 87$  and  $90$ .
- Equally high ratings on satisfaction items using 6-point scale (4 = “slightly agree”), including:
  - “*The ACT Daily check-ins seemed to guide the skill coaching I received*” (Random  $M = 4.53$  vs. Tailored  $M = 4.44$ )
  - “*It was important that ACT Daily check-ins guide the specific skill coaching I receive*” (Random  $M = 4.88$  vs. Tailored  $M = 4.94$ )

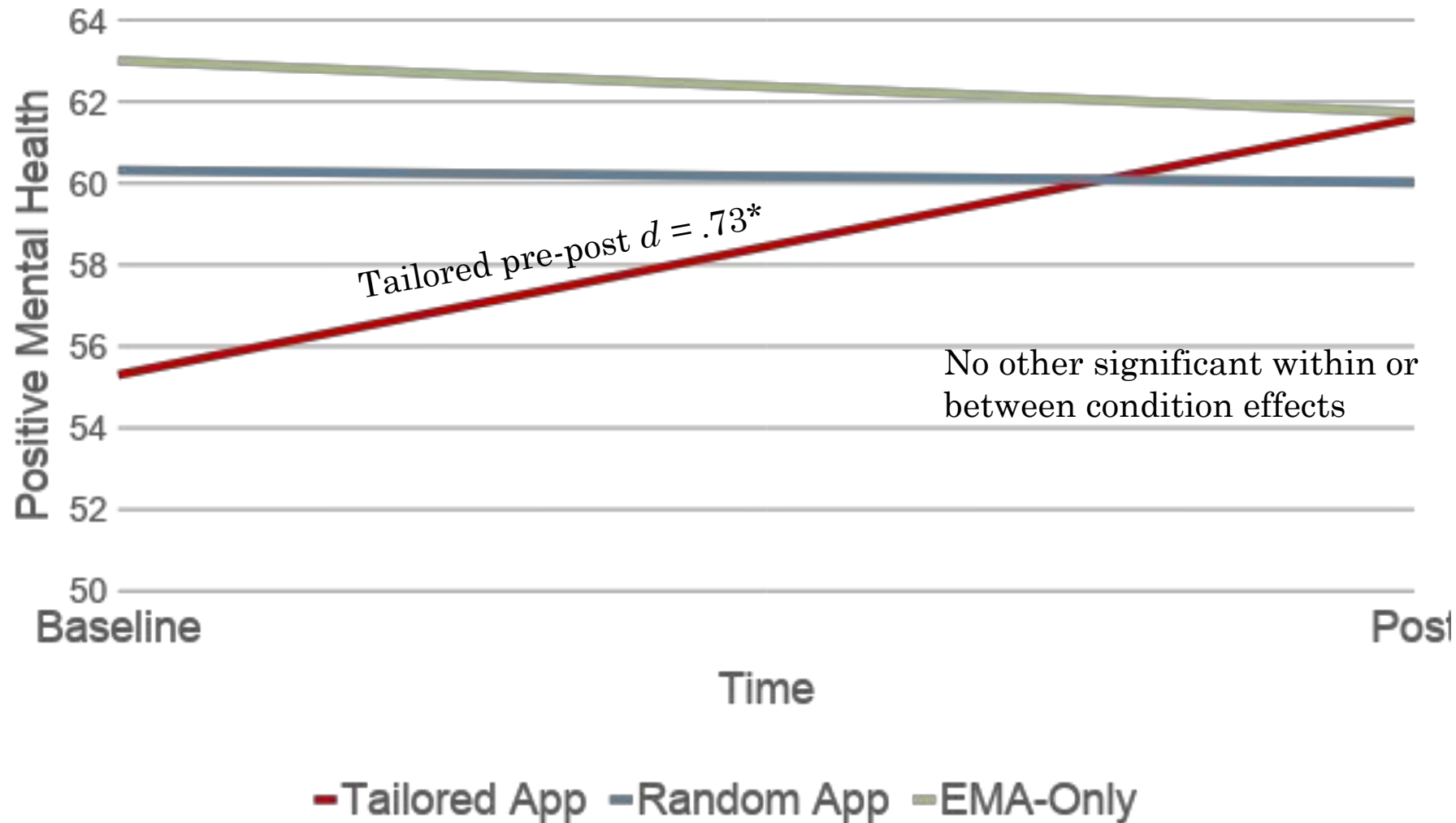
# Improvements over 4 weeks on DASS

Overall Time \* Condition effect  $F = 3.48, p < .05$



# Improvements over 4 weeks on MHC-SF

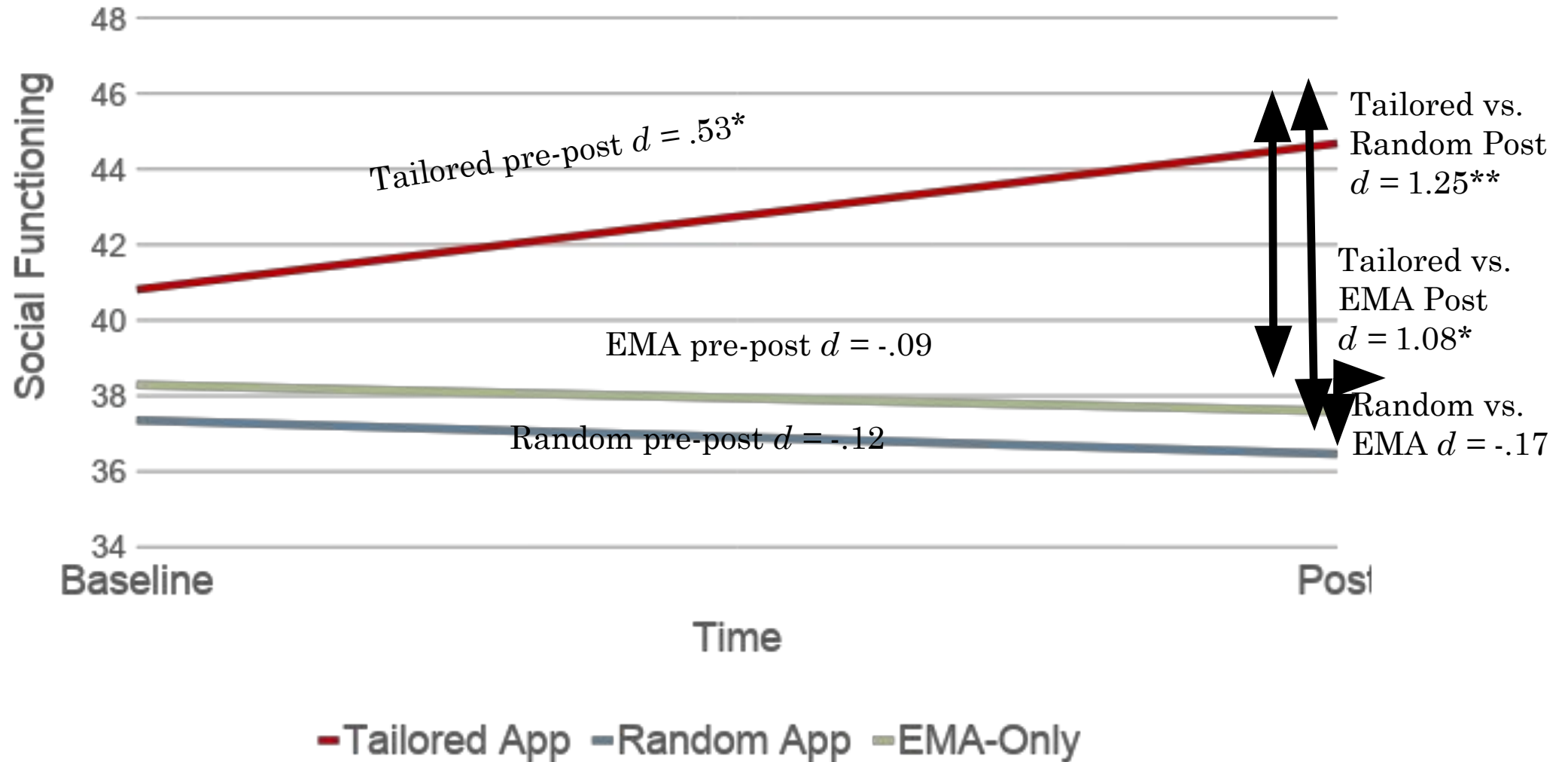
Overall Time \* Condition effect  $F = 4.32, p < .05$





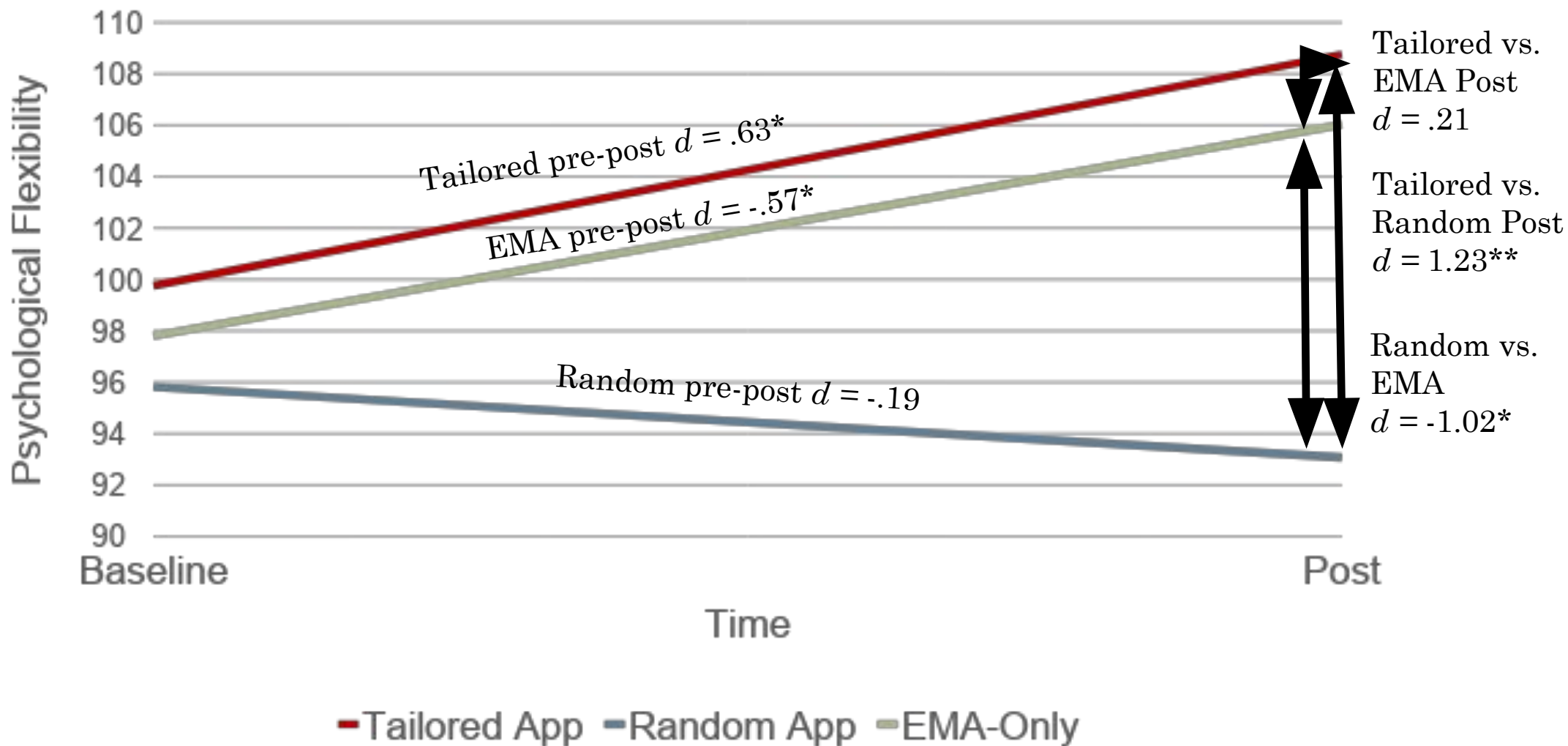
# Improvements over 4 weeks on SPSR

Overall Time \* Condition effect  $F = 2.58, p < .10$



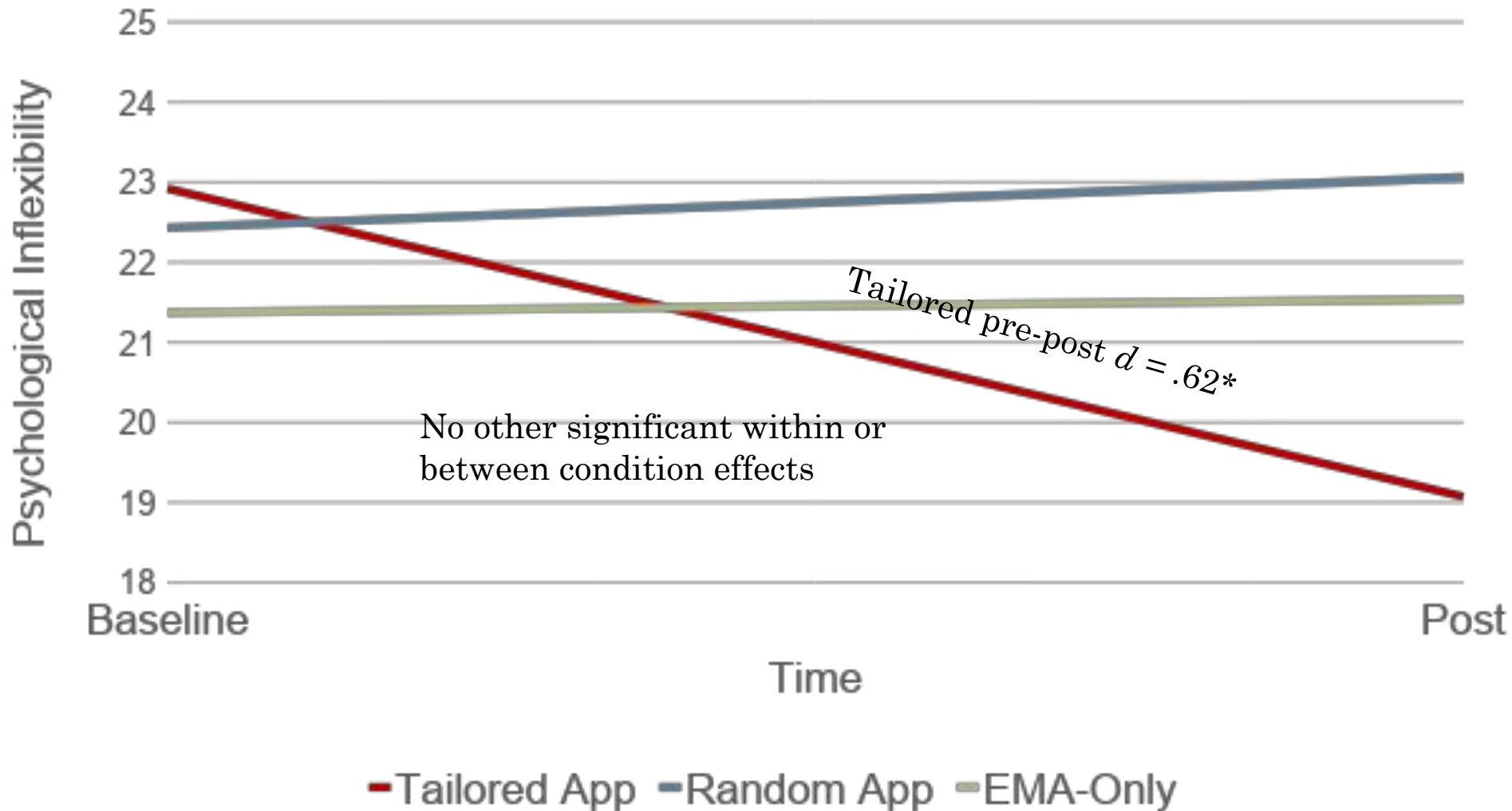
# Improvements over 4 weeks on CompACT

Overall Time \* Condition effect  $F = 4.14, p < .05$

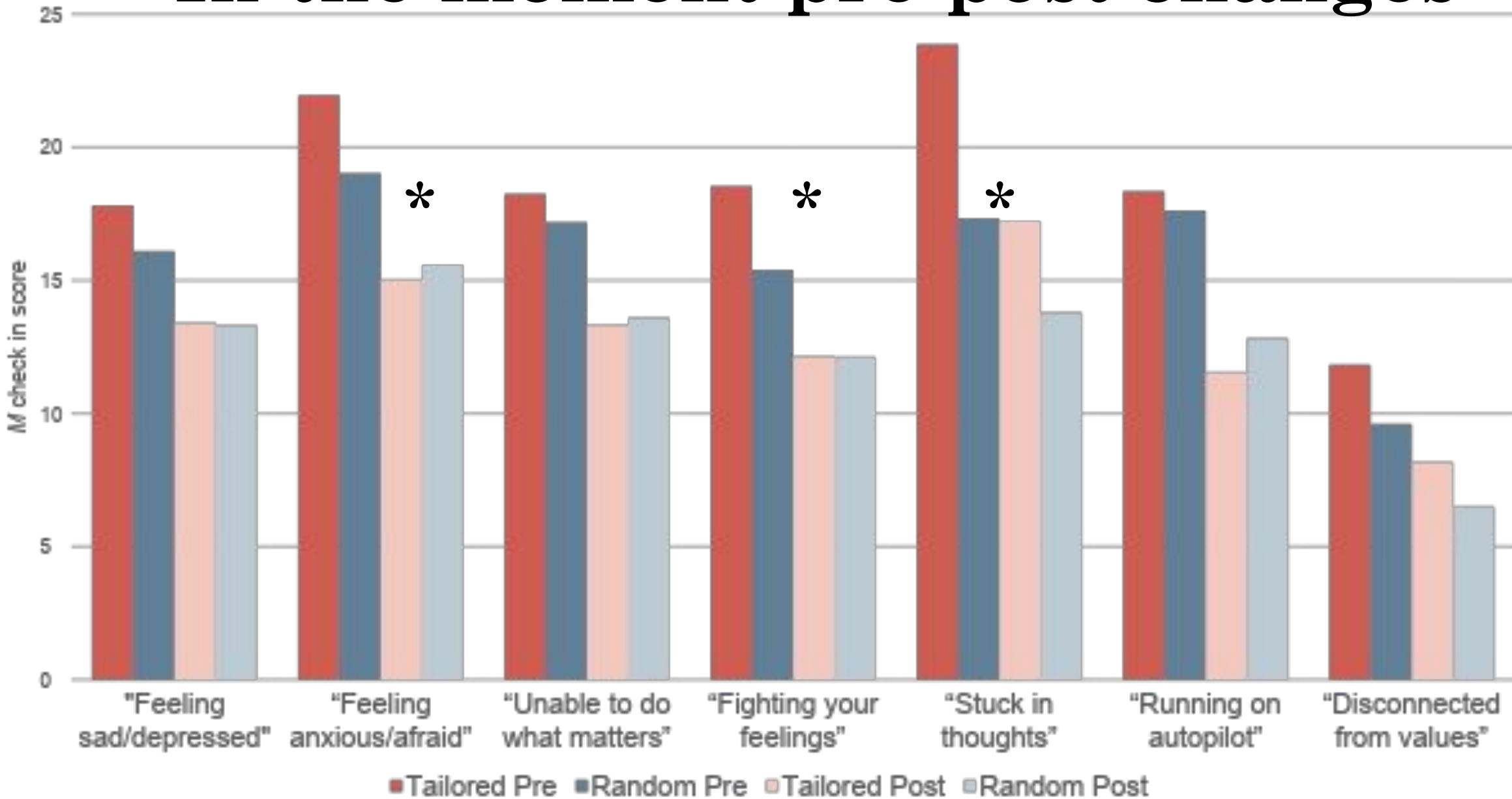


# Improvements over 4 weeks on AAQ-II

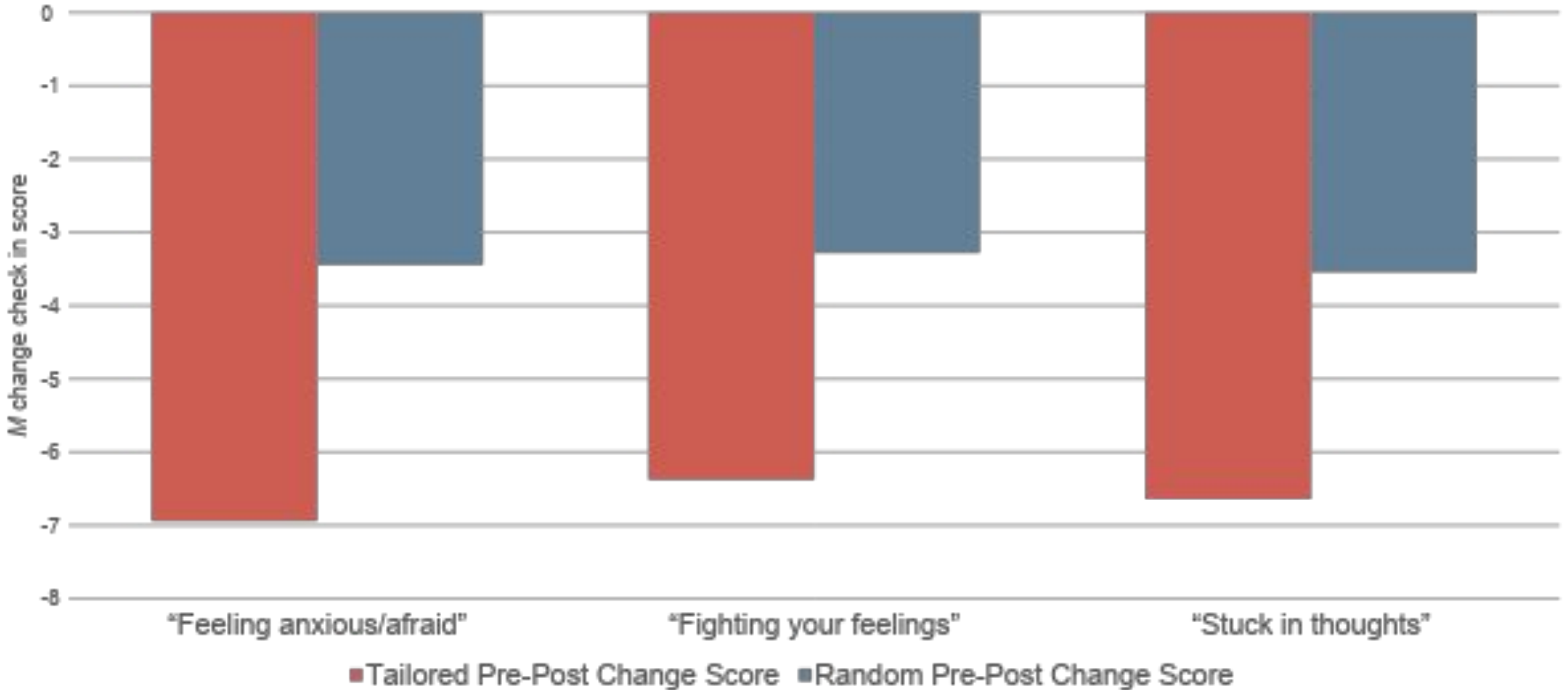
Overall Time \* Condition effect  $F = 3.00, p < .10$



# In-the-moment pre-post changes



# Comparing in-the-moment changes



# Summary of findings with ACT Daily

- ACT can be delivered in a high frequency, low intensity app format to improve mental health
- Tailoring what skill is provided in the moment improves outcomes
  - Surprisingly, the random app was inert
- Future research needed to enhance tailoring
  - What skills are delivered for what person under what conditions
  - Potential implications for clinical decision making?

# Future directions with implementation

- Key opportunities in service delivery for apps
  - Stepped care or waitlist resources
  - Adjunctive tools during treatment to address clinical needs
  - Ongoing support for termination and transitions in care
- Challenges with implementation among providers
  - Adoption and use of apps among providers
  - Concerns related to data privacy, data sharing and clinical obligations, and effectiveness of content

# Thank you!

