Ursula Kelly, PhD, APRN, ANP-BC, PMHNP-BC, FAANP, FAAN
Terri Haywood, MS, MPH
Belle Zaccari, PsyD

Thursday, November 18, 12:00pm - 1:00 ET

TRAUMA SENSITIVE YOGA EQUIVALENT TO CPT AS A TREATMENT FOR PTSD RELATED TO MST IN WOMEN VETERANS: FINDINGS FROM A 5-YEAR RCT

VA | U.S. Department of Veterans Affairs

OHSU

EMORY NELL HODGSON WOODRUFF SCHOOL OF NURSING

THE PROJECT STRESS-LESS TEAM

- Atlanta VAHCS, VAHCS Portland, VA Women's Health Research Network, including the PBRN, HSR&D Scientific Program Managers, and VA mental health clinicians.
- Dave Emerson, TCTSY facilitators, and the Center for Trauma and Embodiment
- Melinda Higgins, PhD, Director of the Office of Nursing Research's Biostatistics and Data Management Core, Emory University NHWSN
- Co-Investigators: psychologists, psychiatrist, cardiologist, sleep medicine physician, research scientists
- Numerous staff members, nursing students, psychology students, and volunteers.
- Hundreds of women Veterans who participated in the study and/or provided input and inspiration.

DISCLOSURES AND ACKNOWLEDGEMENTS

Funding Statements
This material is based upon work supported by the Department of Veterans Affairs, Veterans Health Administration, Office of Research and Development, Health Services Research and Development, Grant # 5I01HX001087-02 (PI: Kelly).

Acknowledgements
This material is the result of work supported with resources and the use of facilities at Veterans Affairs Portland Health Care System, Atlanta Veterans Affairs Medical Center, Oregon Health & Science University, and Emory University. The authors would like to acknowledge the Veterans who participated in this study for their military service and study participation. We would like to thank the additional staff and consultants who contributed to this project. We also wish to thank the clinicians and yoga facilitators who treated study participants.

Disclaimer
The contents of this article do not represent the views of the U.S. Department of Veterans Affairs or the United States Government. All authors approved this manuscript and this submission.

Conflicts of Interest
The authors report no conflicts of interest.

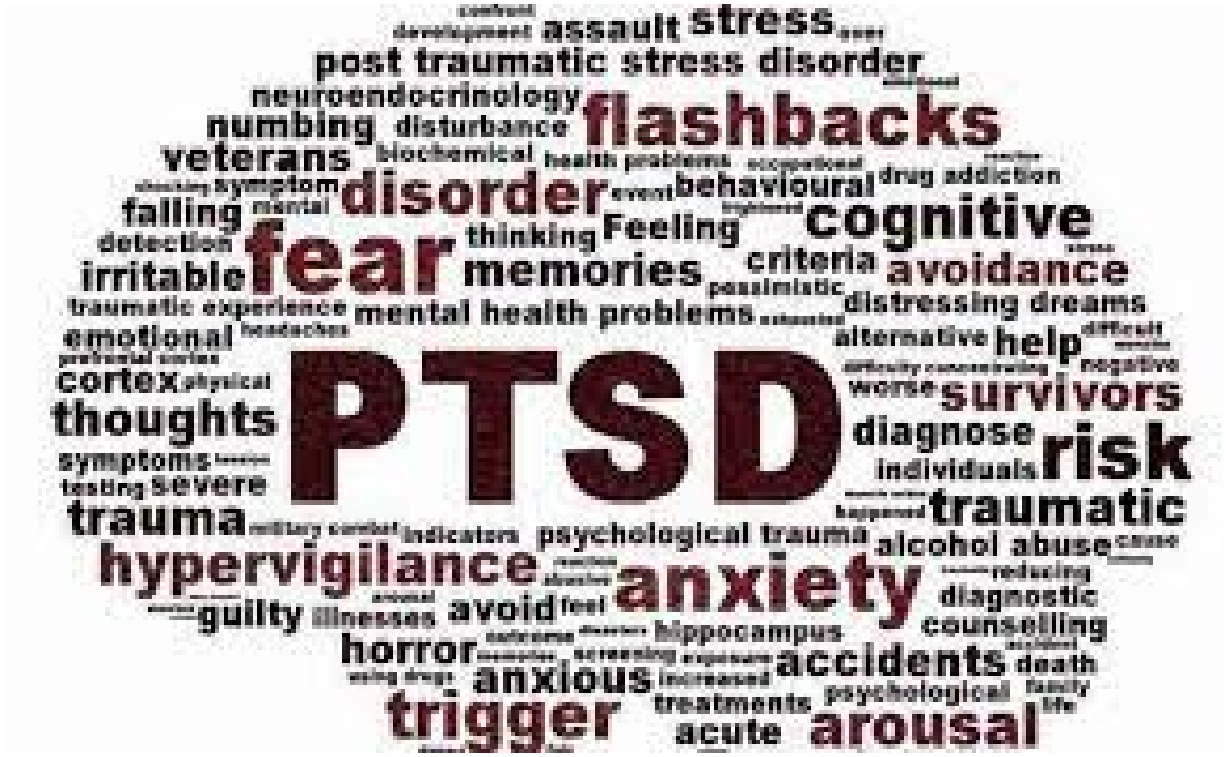
VA | U.S. Department of Veterans Affairs

OHSU

EMORY NELL HODGSON WOODRUFF SCHOOL OF NURSING

OBJECTIVES

- Provide background and rationale for the study
- Describe study methods before and during the COVID-19 pandemic
- Present results related to PTSD and co-occuring depression
- Discuss implications and next steps



Post Traumatic Stress Disorder **(PTSD)** is characterized by distress and functional impairment resulting from direct or indirect exposure to a traumatic or stressful event.

BACKGROUND

- PTSD rates among military members and Veterans are higher than general population. [1]
- PTSD among women Veterans is most often related to military sexual trauma (MST). [2]
- MST is broadly defined by DoD and VA as sexual assault or repeated, threatening sexual harassment during military service.
- History of complex trauma and complex PTSD make standard treatments less effective.[3]

1. Kessler RC, Berglund P, Demler O, et al. Lifetime Prevalence and Age-of-Onset Distributions of DSM-IV Disorders in the National Comorbidity Survey Replication. Archives of General Psychiatry. 2005-06-01 2005;62(6):593.
2. Wilson LC. The Prevalence of military sexual trauma: A meta-analysis. Trauma Violence Abuse 2018;19:584–597
3. Landes, S. J., Garovoy, N. D., & Burkman, K. M. (2013). Treating complex trauma among veterans: Three stage-based treatment models. Journal of Clinical Psychology, 69(5), 523-533.

SIGNIFICANCE

- Approximately 20% of all women Veterans receive their care at the VA.[4]
- The population of women Veterans is expected to increase by 7% by 2046.[5]
- VA is a leader in developing and providing evidence-based PTSD treatment, specifically prolonged exposure (PE) and cognitive processing therapy (CPT).
- While effective, these treatments are less desirable by patients and often result in high drop-out rates.
- Use of complementary and integrative health (CIH) interventions in VA has grown significantly with their increased popularity and the expansion of Whole Heath.
- This study was designed to address the gap in efffective treatment options and the increased use of yoga in the clinical setting for wellness and PTSD.

4. Aponte M, Balfour F, Garin T, et al. Women Veterans Report: The Past, Present, and Future of Women Veterans Department of Veterans Affairs, Washington, DC.: National Center for Veterans Analysis and Statistics; 2017.
5. Pew Research Center analysis of 1960-2000 decennial census data and 2010 and 2014 American Community Survey data (IPUMS)

AIMS

- The specific aims of this randomized controlled trial (RCT) with VA-using women Veterans with PTSD related to MST were to evaluate the effectiveness of a trauma-sensitive Hatha yoga compared to cognitive processing therapy:

Primary Aim 1	in reducing symptoms of PTSD, chronic pain, and insomnia
Primary Aim 2	in improving quality of life and social functioning
Primary Aim 3	on biological (cytokines) and psychophysiological markers

- Today, we are presenting results related to PTSD and depression.

METHODS

- This RCT compared the effects of Trauma Centered Trauma Sensitive Yoga (TCTSY) to Cognitive Processing Therapy (CPT).

- Sample
  - Women veterans with current PTSD related to MST enrolled at Atlanta or Portland Healthcare System.
    - Portland (n=28)
    - Atlanta (n=103)
- Data Collection
  - Timepoints (Baseline, mid-intervention (TCTSY = 5 weeks, CPT = 6 weeks), 2-weeks post-intervention, 3-months post-intervention)
- Intervention
  - TCTSY
  - CPT

MEASURES

PTSD:
CAPS- 5
PCL-5
DRRI-2 Combat Experiences
Childhood Trauma Questionnaire
Life Events Checklist

Sleep and Pain:
Berlin Questionnaire
Epworth Sleepiness Scale
Pittsburgh Sleep Quality Index
Brief Pain Inventory

Mental Health and Quality of Life:
MINI (for DSM-5)
Beck Depression Inventory (BDI)
Difficulties in Emotion Regulation Scale
Dissociative Experiences Scale
Patient Health Questionnaire
PROMIS Measures
Veterans RAND 12 Item Health Survey

Psychophysiology:
ECG
HRV
Dark Startle (Atlanta only)
Blood Draw/Finger stick (cytokine)

POLL QUESTION 1

For those of you in the VA system,
Is your VA offering yoga to Veterans?

____ Yes _____ No _____I don't know

If yes, for what purpose or clinical condition? (check all that apply)

- Whole Health
- General Wellness
- PTSD
- Chronic Pain
- Other (please specify)

GROUP INTERVENTIONS

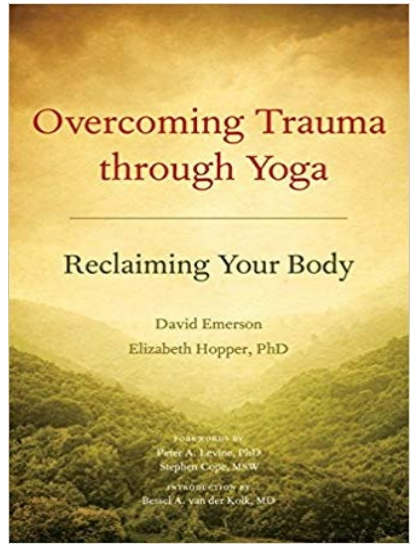
Trauma Center Trauma Sensitive Yoga (TCTSY)

- 10 weeks; 60-minute sessions
- 2 facilitators
  - Certified in TCTSY
- Developed by David Emerson
- Hatha Style Yoga
  - Movement therapy
- Efforts to maintain fidelity

Cognitive Processing Therapy (CPT)

- 12 weeks; 90-minute sessions
- 2 VA clinicians
  - Certified in CPT
- Developed within VA
- CBT-based therapy
  - Talk therapy
- Efforts to maintain fidelity

TCTSY



Themes/Therapeutic Goals of TCTSY

- Practice making choices
- Present moment experience
- Taking effective action
- Creating rhythms
- Non-coercion
- Sensing dynamics

How TCTSY is Theorized to Work

- Brain Growth
- Practice making choices
- Practice feeling/sensing into your body
- Creating safety within the body
- Practice taking action based on feelings and sensations
- PTSD symptom reduction

POLL QUESTION 2

For those of you in VA,

1. Is your site using any type of yoga for PTSD?

____ Yes _____ No _____ I don't know

2. Is your site using trauma-sensitive yoga?

____ Yes _____ No _____ I don't know

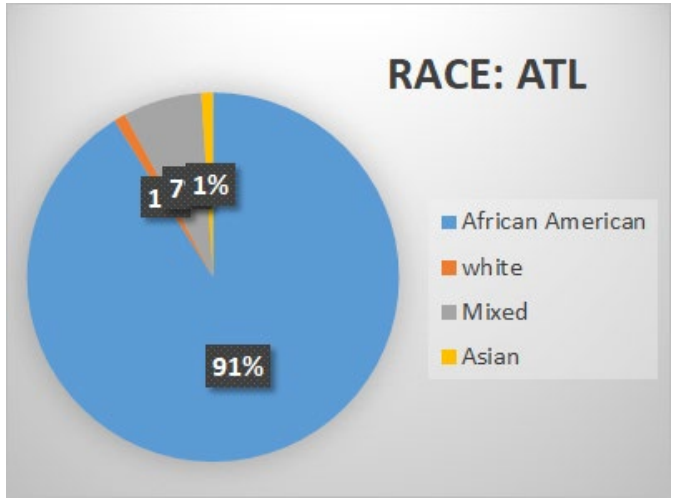
TCTSY

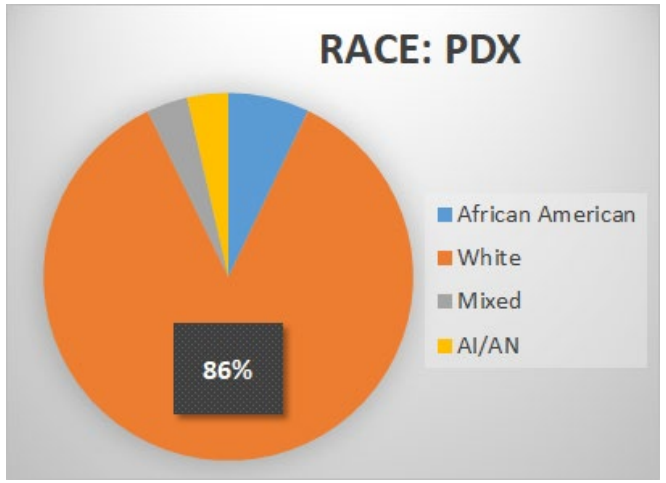
TRAUMA CENTER
TRAUMA SENSITIVE YOGA

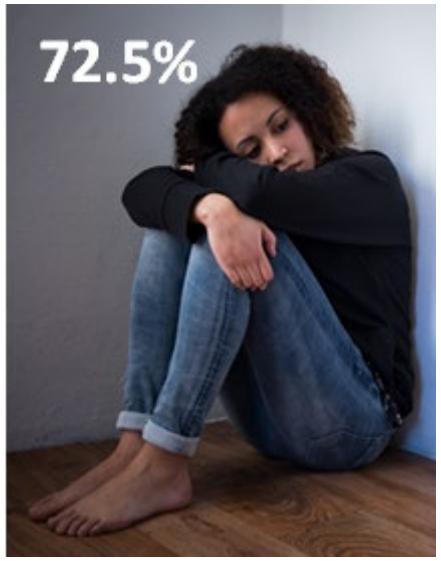
VIRTUAL ADAPTATIONS FOR COVID-19

- Consent and HIPAA Authorization
- Assessment/Data Collection
  - Psychophysiological markers of stress
- Intervention Delivery
- Managing Risk
- Impact on analyses and results

DEMOGRAPHICS BY SITE



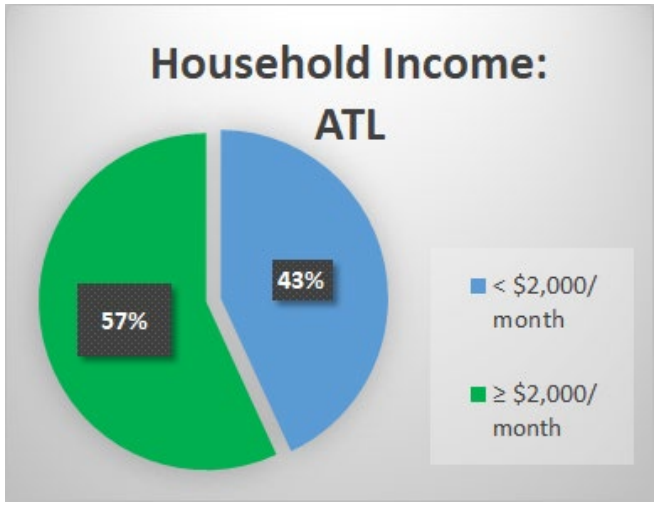


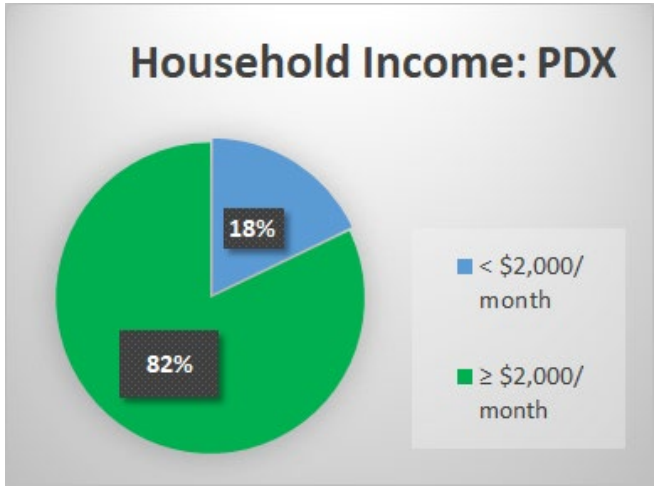


ATL

$$$

PDX





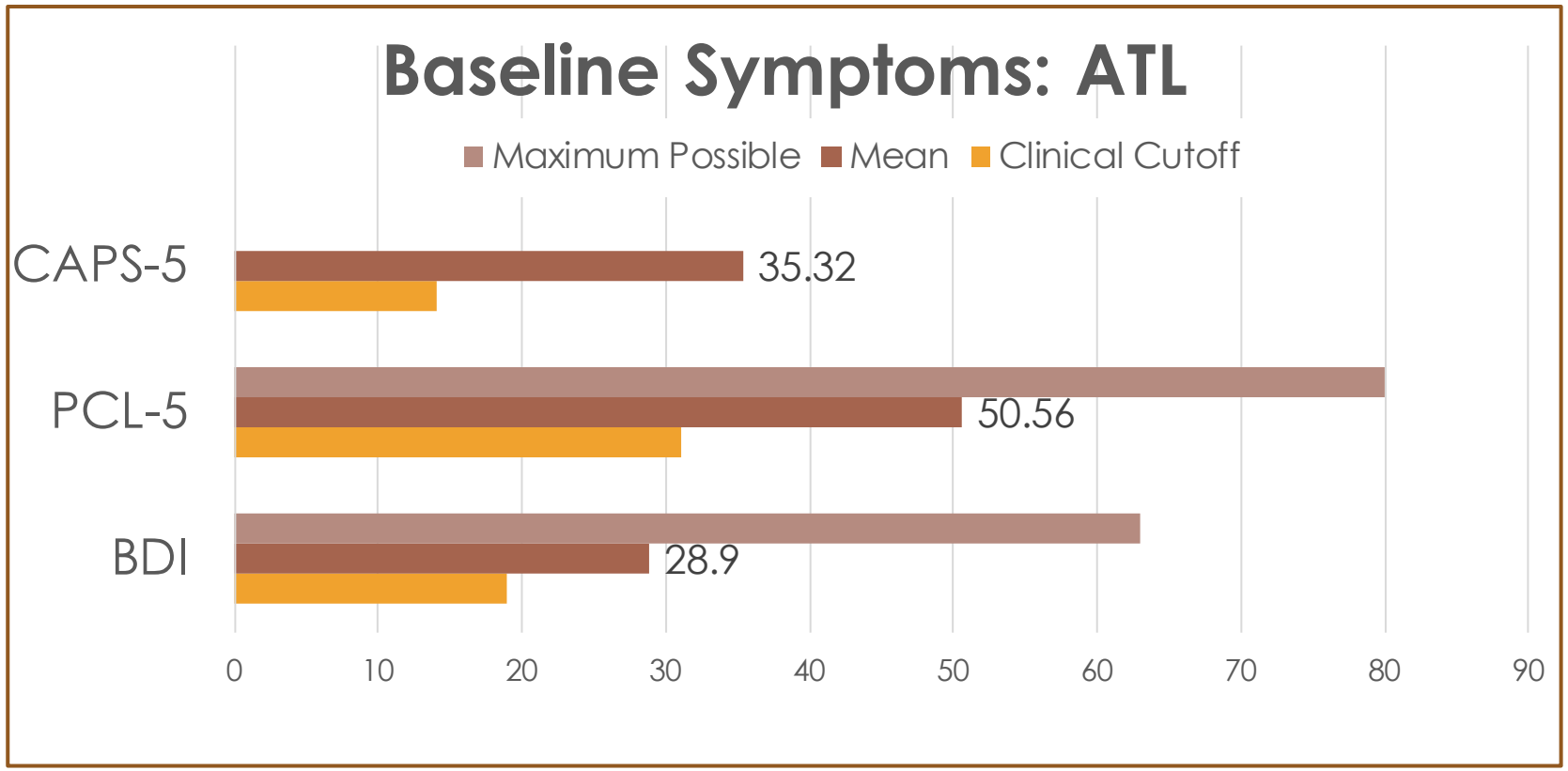
RESULTS: SAMPLE DESCRIPTION

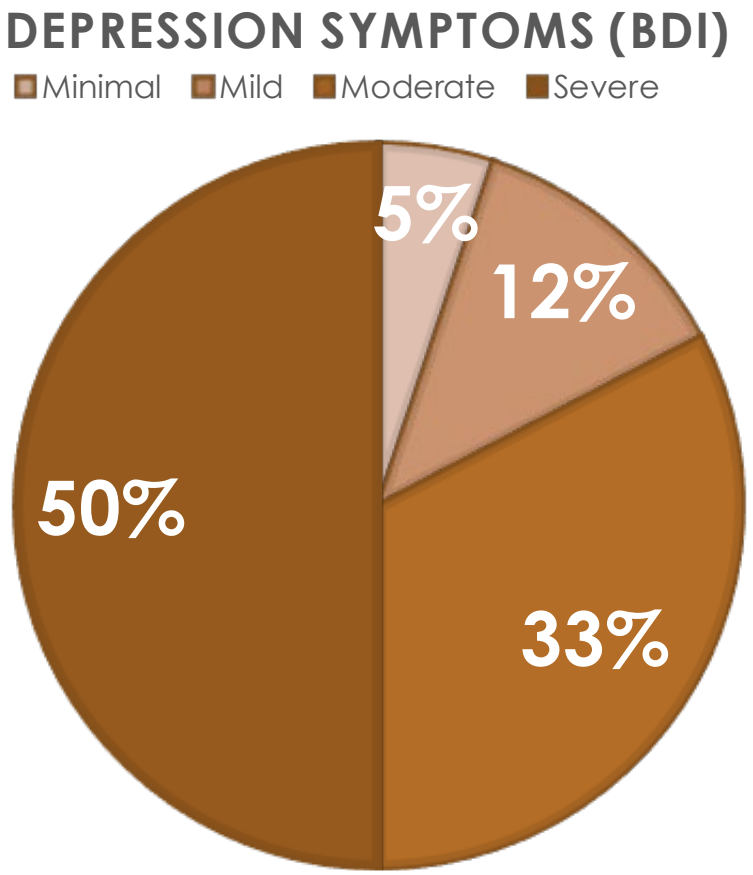
Demographics Characteristics by Site

	Pacific Northwest (N=28)	Southeast (N=103)
	Mean (SD)	*Mean (SD)*
Age	47.5 (11.7)	48.43 (11.2)
Demographic	n (%)	n (%)
Education		
12 years (high school)	2 (7.1)	16 (15.5)
13-16 years (college)	19 (67.9)	80 (77.7)
17-20 years (college)	7 (25)	7 (6.8)
Race		
Black, AA	2 (7.1)	**93 (90.3)*** **
Asian	-	1 (1.0)
White	**24 (85.8)*** **	1 (1.0)
Mixed	1 (3.6)	7 (6.8)
American Indian/Alaska Nat.	1 (3.6)	
Relationship Status		
Non-partnered	15 (53.6)	72 (69.9)
Married/Partnered	13 (46.4)	31 (30.1)
Household Monthly Income		
Less than $2K/mo	5 (17.9)	**44 (43.1)***
$2K/mo or more	**23 (82.1)***	58 (56.9)
Employment		
Less than full-time	21 (75)	71 (68.9)
Full-time	7 (25)	32 (31.1)

*** $p \leq 0.001$
* $p = 0.014$

RESULTS


Baseline Symptoms: ATL
Maximum Possible
Mean
Clinical Cutoff
CAPS-5
35.32
PCL-5
50.56
BDI
28.9
0
10
20
30
40
50
60
70
80
90


DEPRESSION SYMPTOMS (BDI)
Minimal
Mild
Moderate
Severe
5%
12%
33%
50%

SUICIDALITY : BASELINE CHARACTERISTICS

n=103	YES	Suicidality Rating (for YES)	N (%)
SUICIDALITY (PAST MONTH)	n=33 **32%**	Low (1-8 Points)	15 **(45.5)**
		Moderate (9-16)	5 **(15.2)**
		High ≥ 17	13 **(39.4)**
Suicide Attempt (Lifetime)	n= 25 **24.3%**		

ATTRITION

ATTRITION FROM SCREENING TO BASELINE VISIT

32%

AFTER RANDOMIZATION PRIOR TO FIRST INTERVENTION SESSION (ATL)

TCTSY: 10%
CPT: 20%

TREATMENT COMPLETION (ATL)

TCTSY: Attendance at ≥ 7/10 sessions

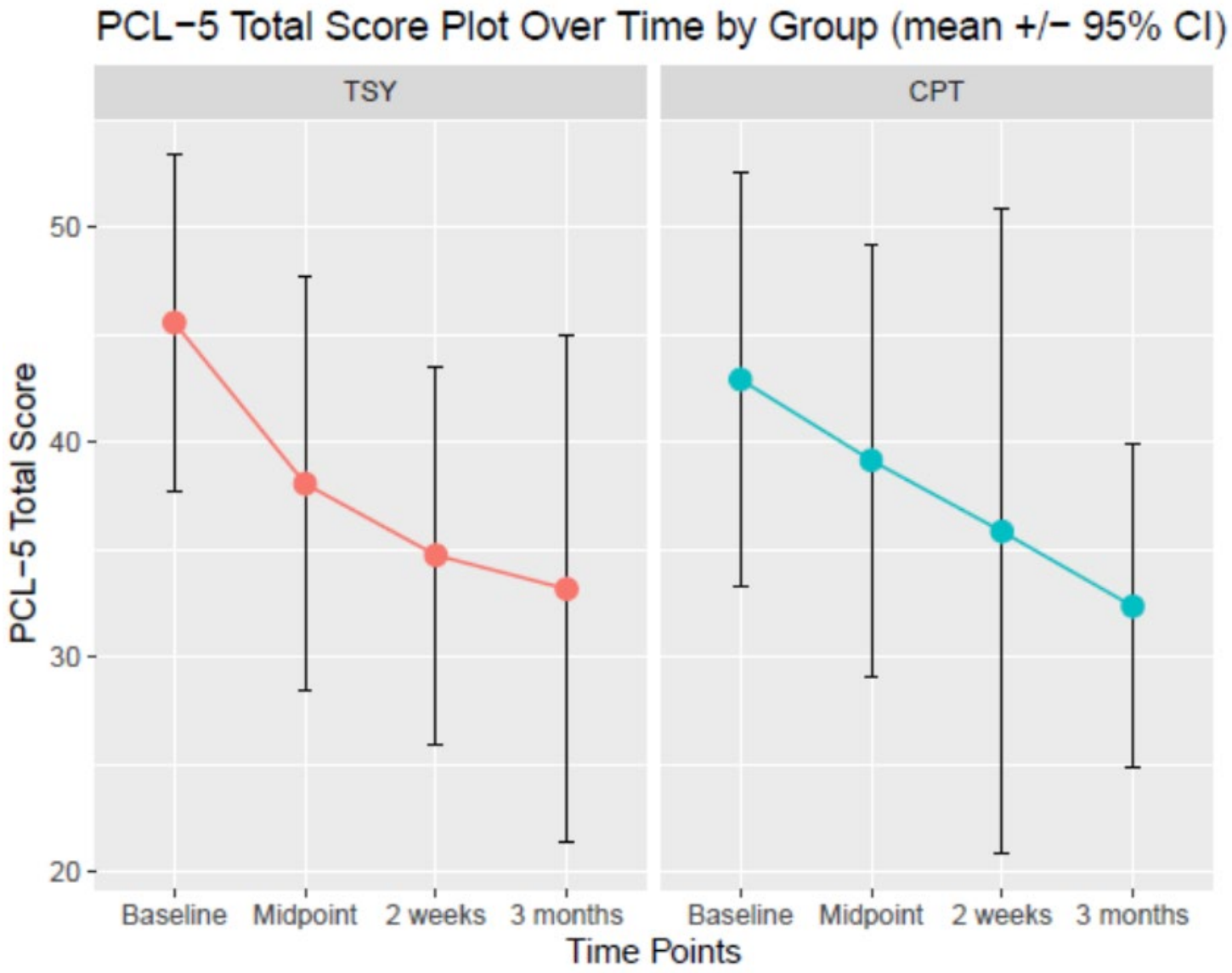
CPT: Attendance at ≥ 8/12 sessions

TCTSY: 60%

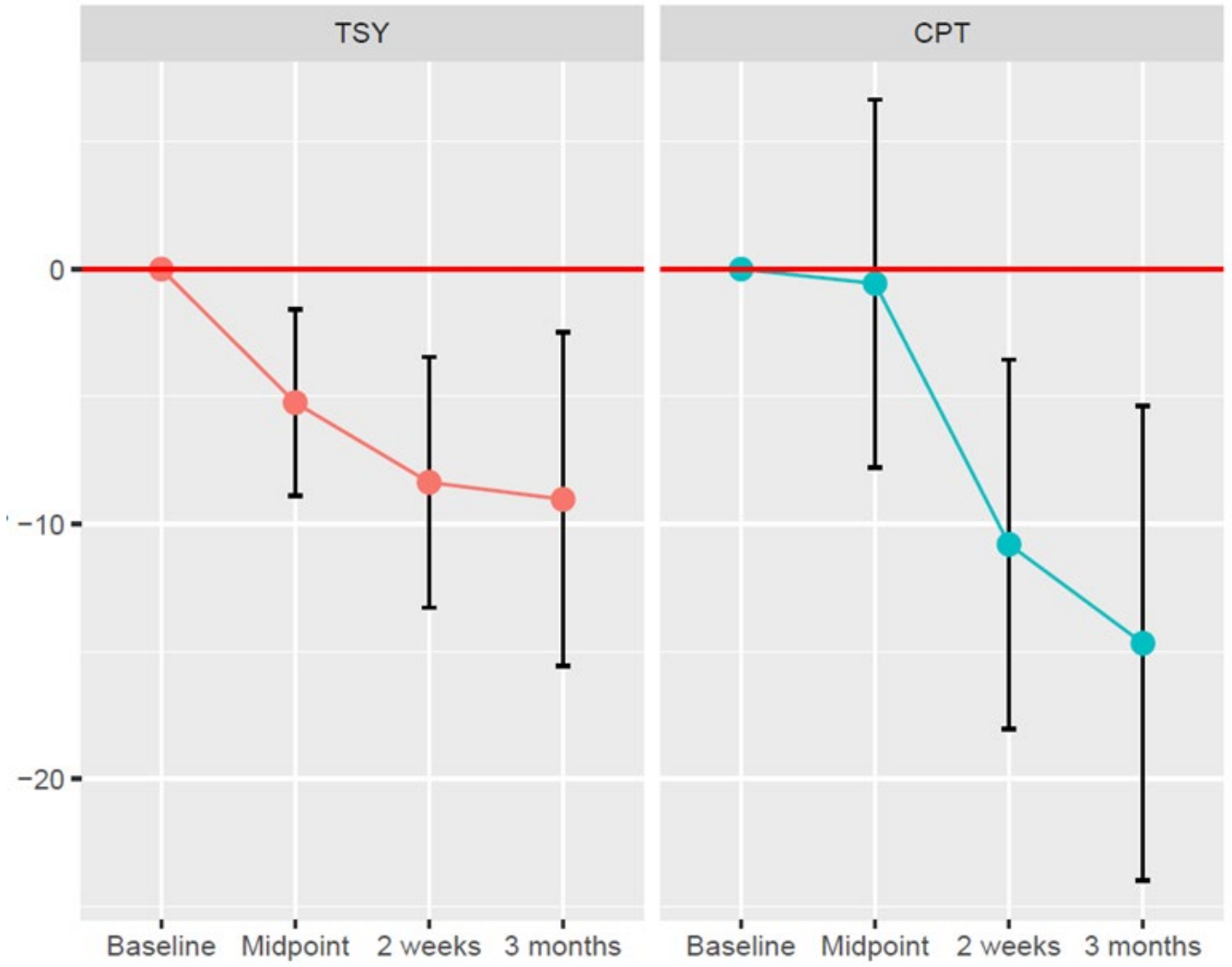
CPT: 38%

PTSD SYMPTOMS (PCL-5)

- Time is significant ($p < .001$)
  - Both groups significantly decreased over time
- No group effect (no difference between groups at end of study)

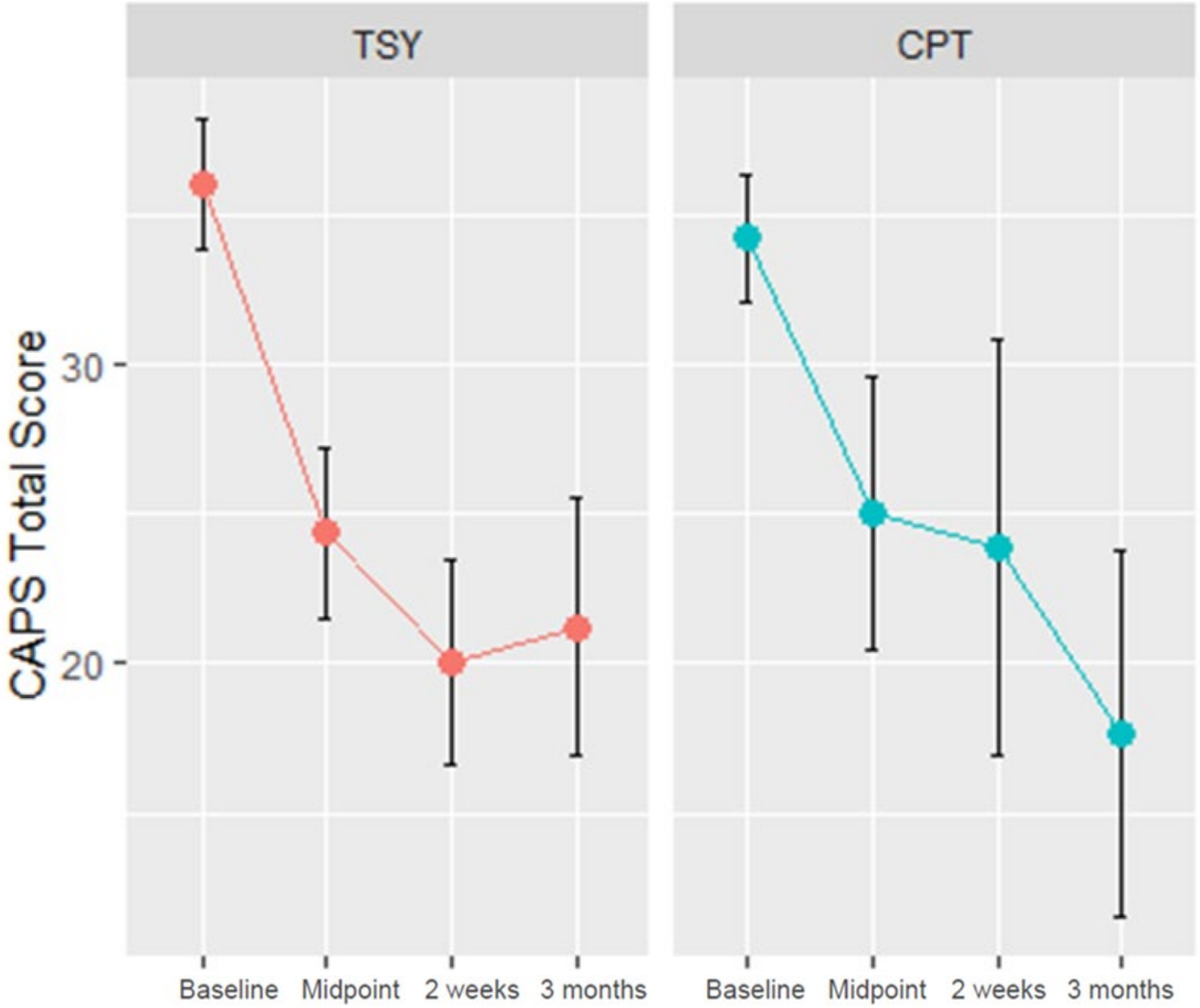


PTSD SYMPTOMS (PCL-5) CHANGE SCORES

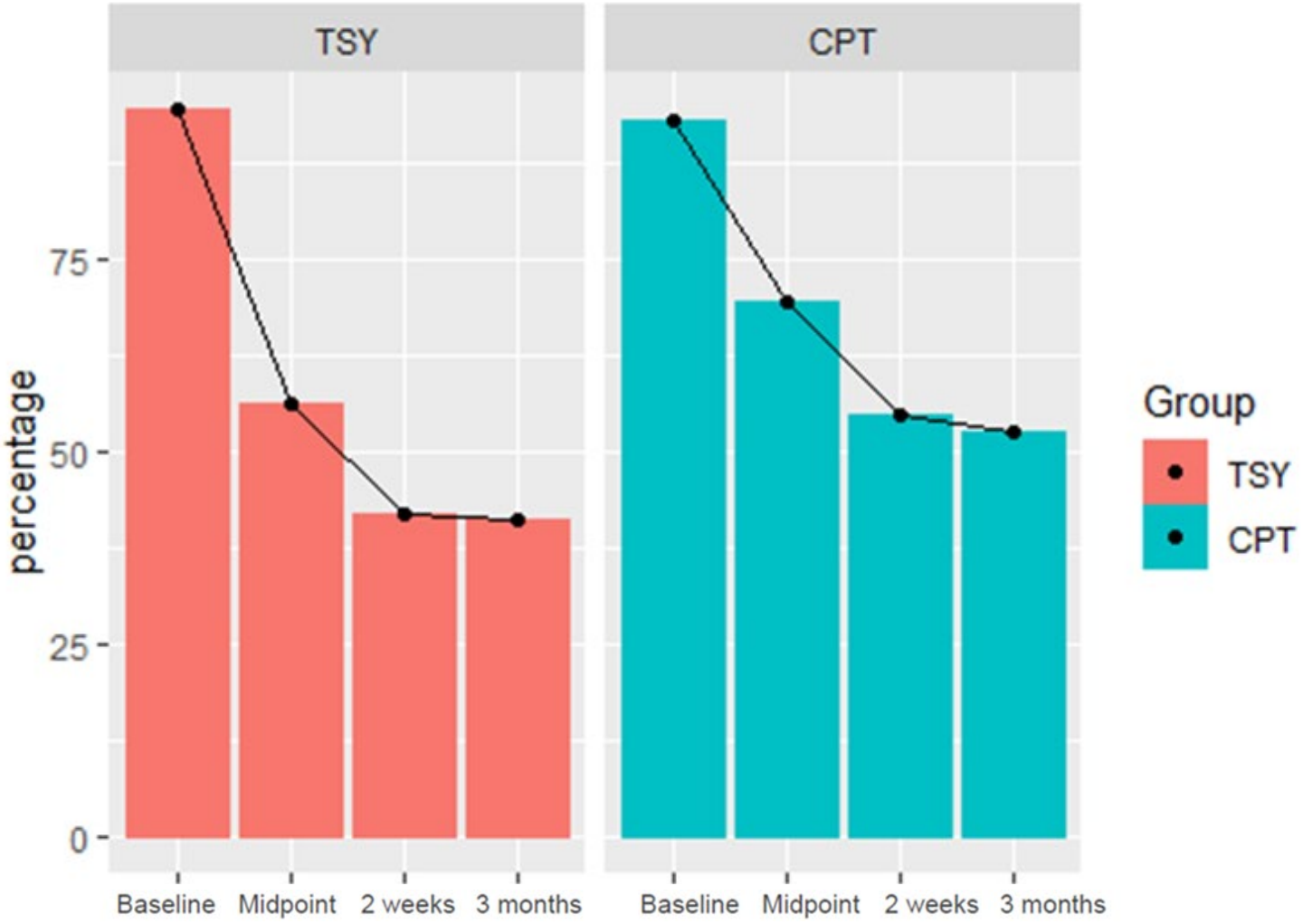


PTSD SYMPTOMS (CAPS-5) GROUP CHANGES OVER TIME

CAPS Total Score Over by Group (mean +/- 95% CI)

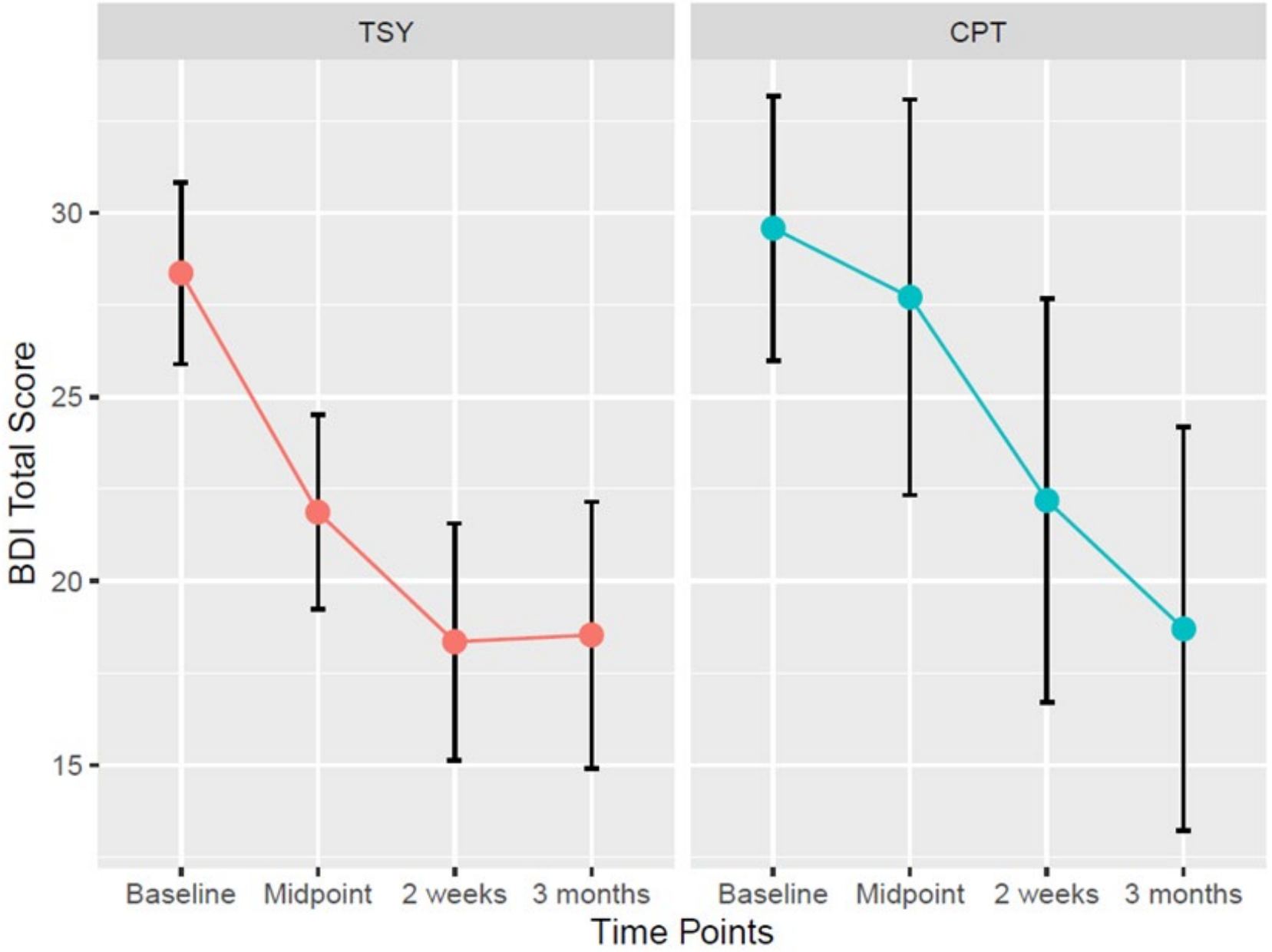


PERCENTAGE MEETING PTSD DIAGNOSTIC CRITERIA (CAPS-5) BY GROUP



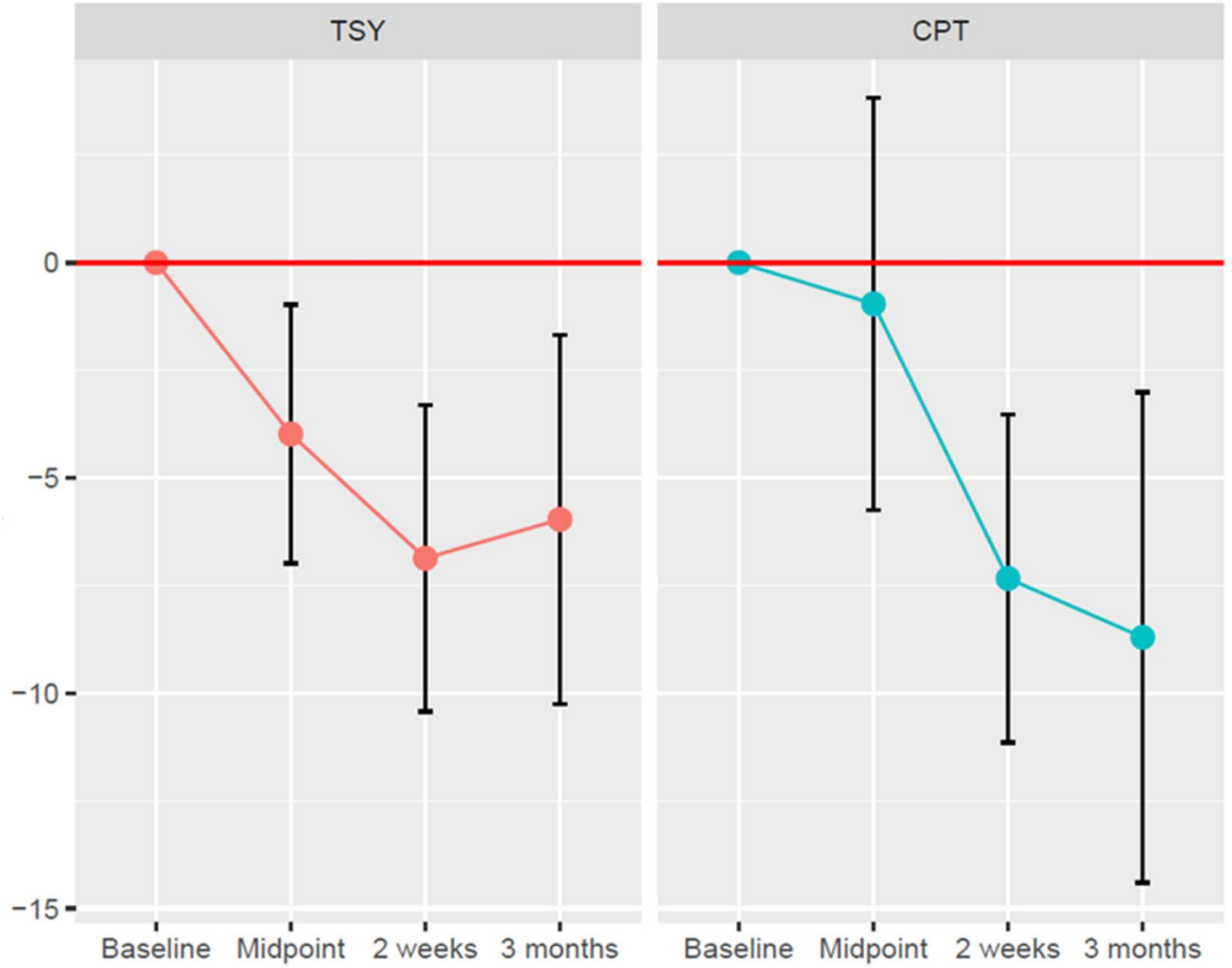
RESULTS: DEPRESSION SYMPTOMS

BDI Mean Scores by Group (+/- 95% CI)



RESULTS: DEPRESSION SYMPTOMS

BDI Change Scores by Group (+/- 95% CI)



LIMITATIONS

- Attrition in the study was high (study procedures and intervention sessions), similar to what we see in clinical practice.

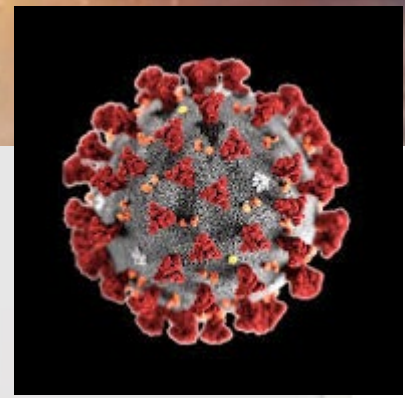
- Neither intervention was effective for everyone.

- **The last Atlanta cohort and the one PDX cohort occurred during the first few months of the COVID-10 pandemic and in the context of the political election, the racial justice movement, and unprecedented climate change events.**

2020-2021: A NATURAL STRESS-TEST

Beyond a Perfect Storm:

How Racism, COVID-19, and Economic Meltdown Imperil Our Mental Health



BLACK LIVES MATTER

DISCUSSION

- **TCTSY resulted in equivalent improvement in PTSD symptoms as CPT 3-mos post-intervention.**

- **TCTSY had a 22% higher treatment completion rate than CPT.**
- Symptom trajectories varied:
  - TCTSY had earlier symptom improvement than CPT, then levelled off.
  - CPT had slower symptom improvement that continued at all time points.
- **Co-occurring depression symptoms improved significantly in both groups.**

IMPLICATIONS

- **TCTSY is an alternative to cognitively-based, trauma-focused treatment.**
  - **Having an additional option provides Veterans' choice in treatments.**
  - **Neither is sufficient for all individuals.**

- **Implementation science is necessary to determine how to scale up TCTSY as an intervention within the VA.**

- **TCTSY effectiveness as a precursor or adjunct to CPT is unknown and warrants investigation.**

Thank you!

Questions?

ukelly@emory.edu; ursula.kelly@va.gov
terrihaywood@hotmail.com
Belle.Zaccari@va.gov