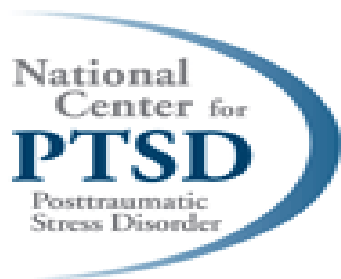




Using Technology to Help Manage PTSD



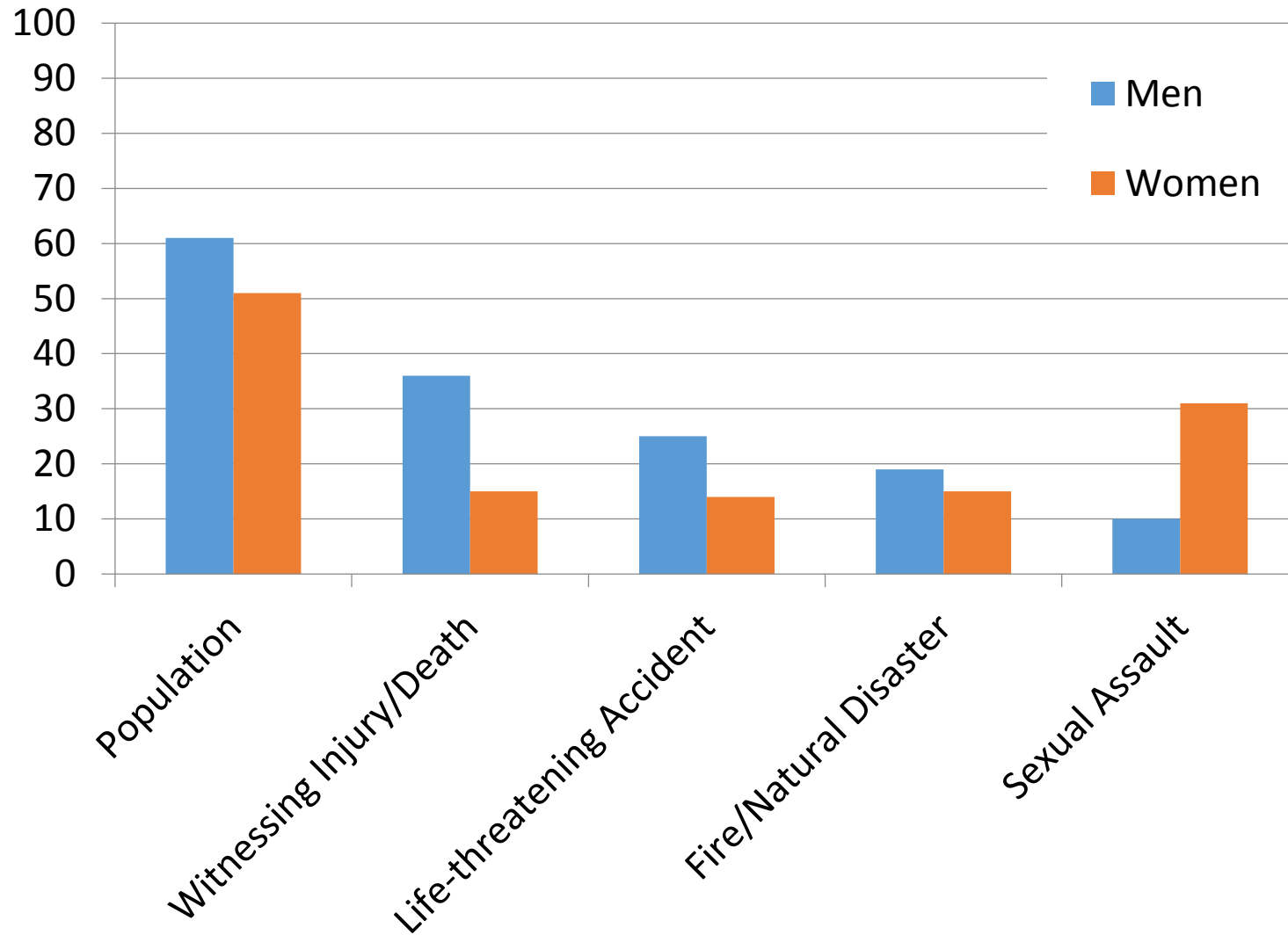
Eric Kuhn, Ph.D.
Clinical Research Psychologist
VA National Center for PTSD
Clinical Assistant Professor (Affiliated)
Stanford University School of Medicine

Overview

- ▶ Trauma and PTSD
- ▶ Trauma, PTSD, and Suicide
- ▶ Effectively Treating PTSD
- ▶ Promising Innovations

Trauma and PTSD

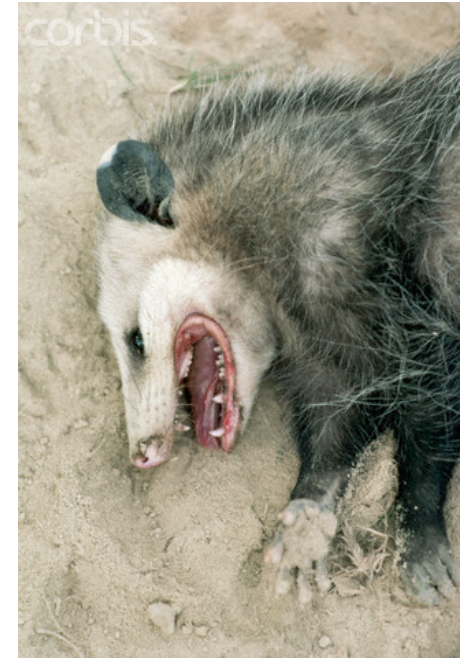
Trauma is Common



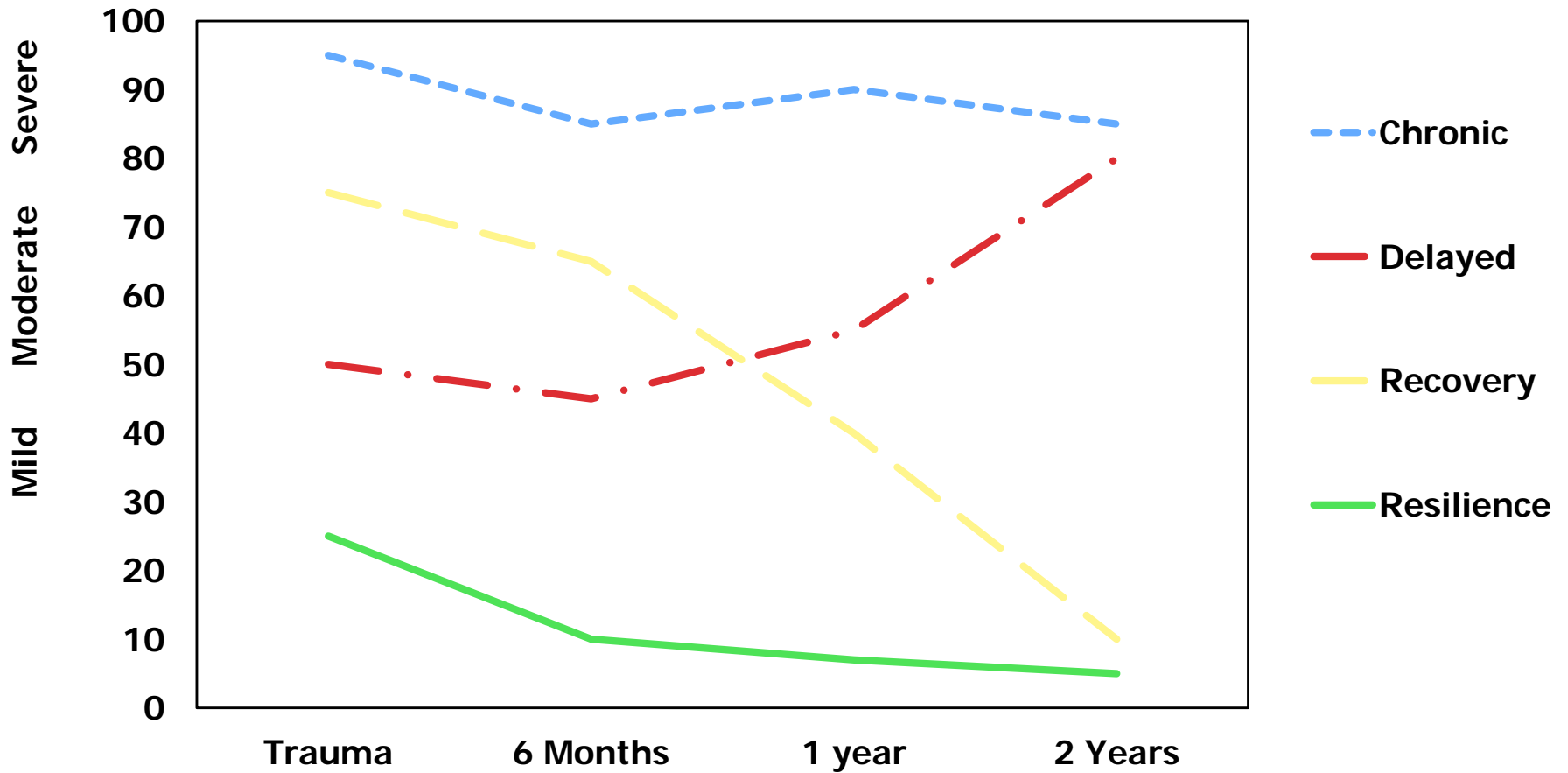
Kessler et al. (1995)

What Happens During Trauma?

- Sympathetic nervous system response to threat: Fight-or-Flight-or-Freeze

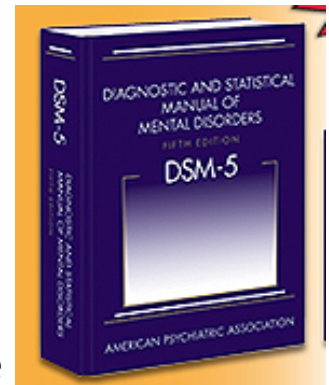


What Happens After Trauma?

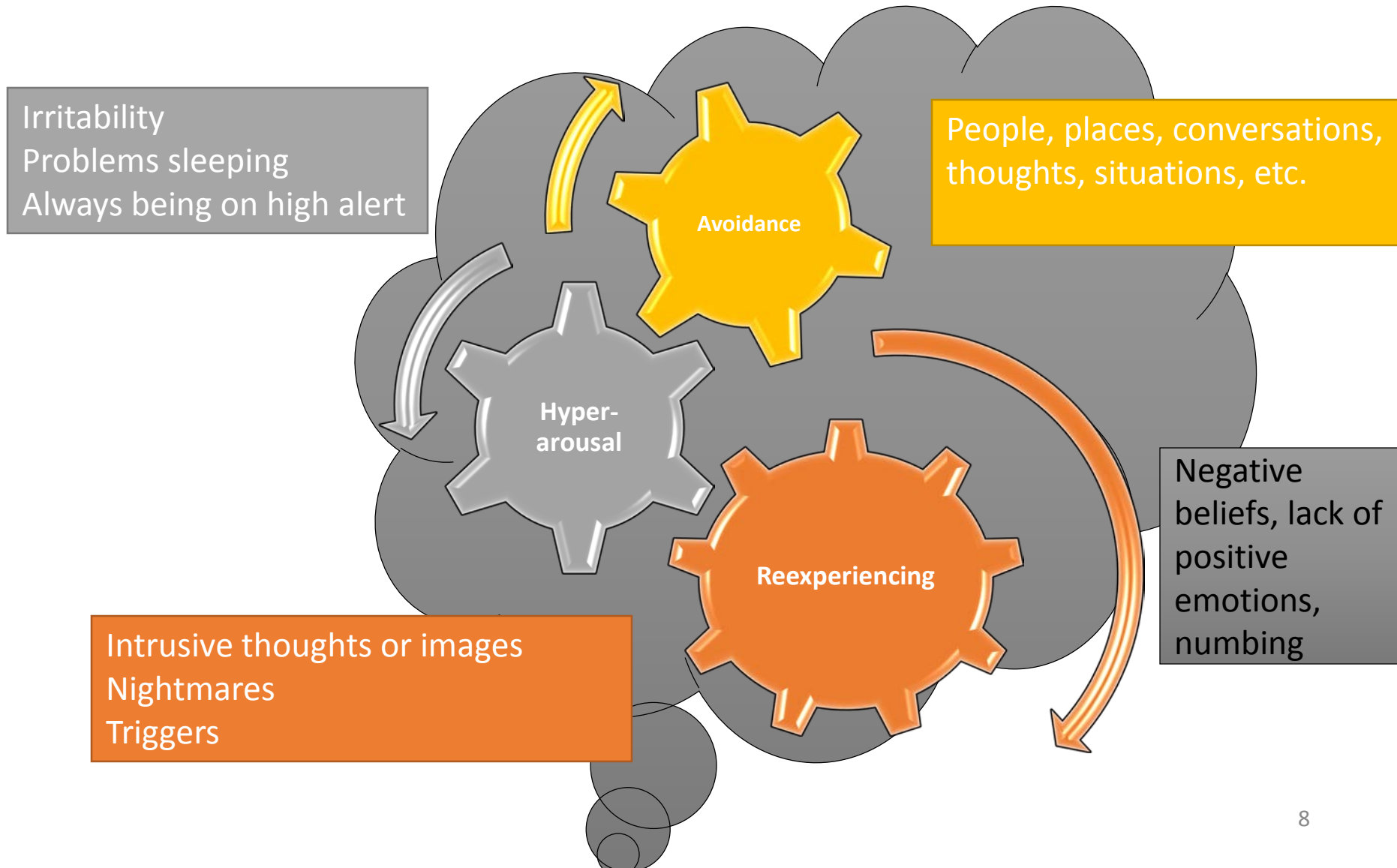


What is PTSD (DSM-5)?

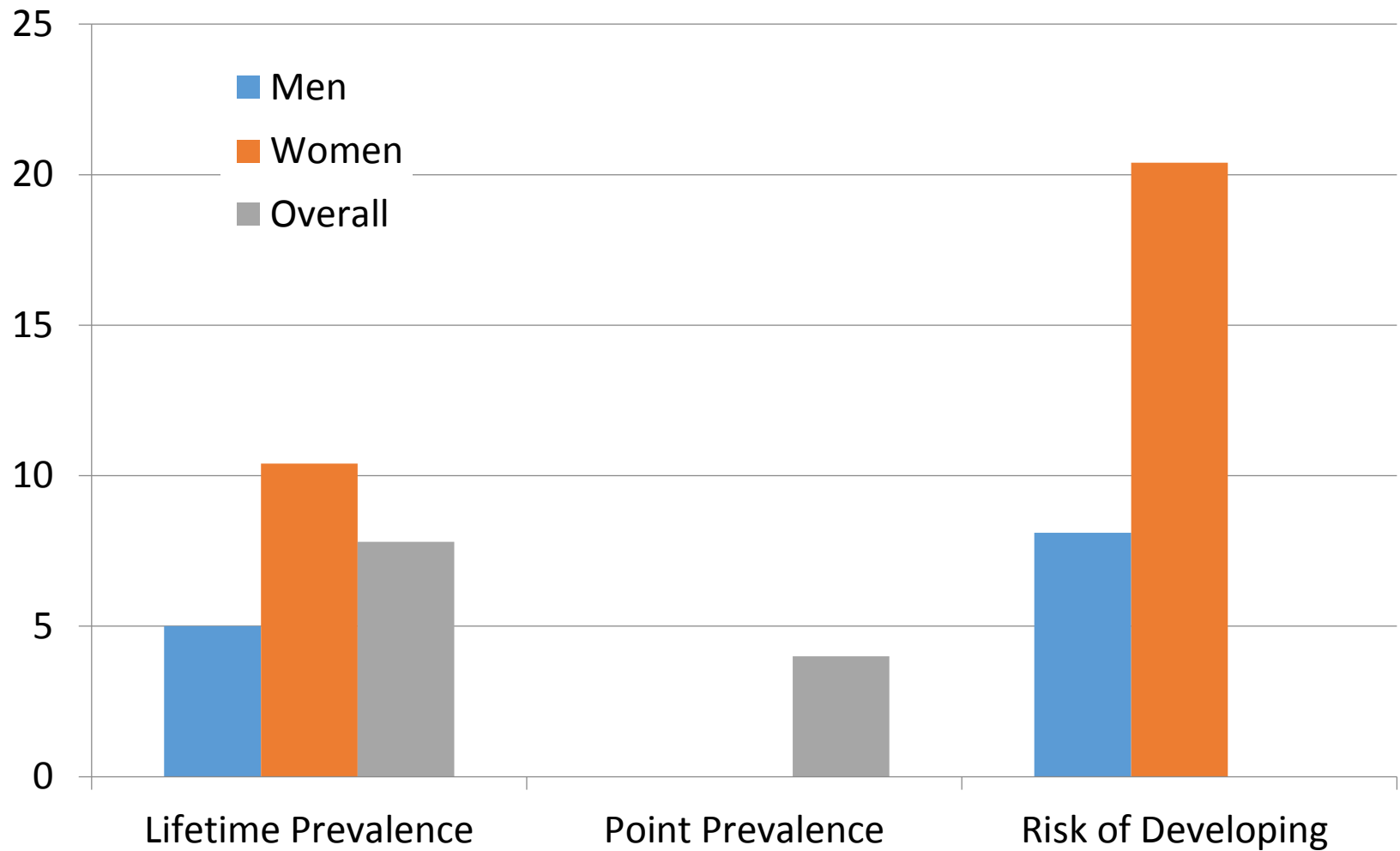
- Criterion A: Traumatic Stressor
 - Exposure to actual or threatened death, serious injury, or sexual violence
- Criterion B: Intrusive Symptoms
 - 1 symptom of 5
- Criterion C: Persistent Avoidance
 - 1 symptom of 2
- Criterion D: Negative Alterations in Cognitions and Mood
 - 2 symptoms of 7
- Criterion E: Alterations in Arousal and Reactivity
 - 2 symptoms of 6
- Criterion F: Duration for >1 Month
- Criterion G: Significant Distress or Impairment
- Criterion H: Not Due to Substance or Medical Condition



PTSD Symptom Interplay



How Common is PTSD?



Common Comorbid Conditions

- Depression
 - 50% lifetime prevalence in PTSD patients (Kessler et al., 1995)
- Alcohol and Substance Use Disorders
 - 52% men and 27% women lifetime prevalence in PTSD patients (Kessler et al., 1995)
- Insomnia
 - Majority of those with PTSD also have significant insomnia and other sleep symptoms (e.g., nightmares)

Trauma, PTSD, and Suicide

Trauma Increases Suicide Risk

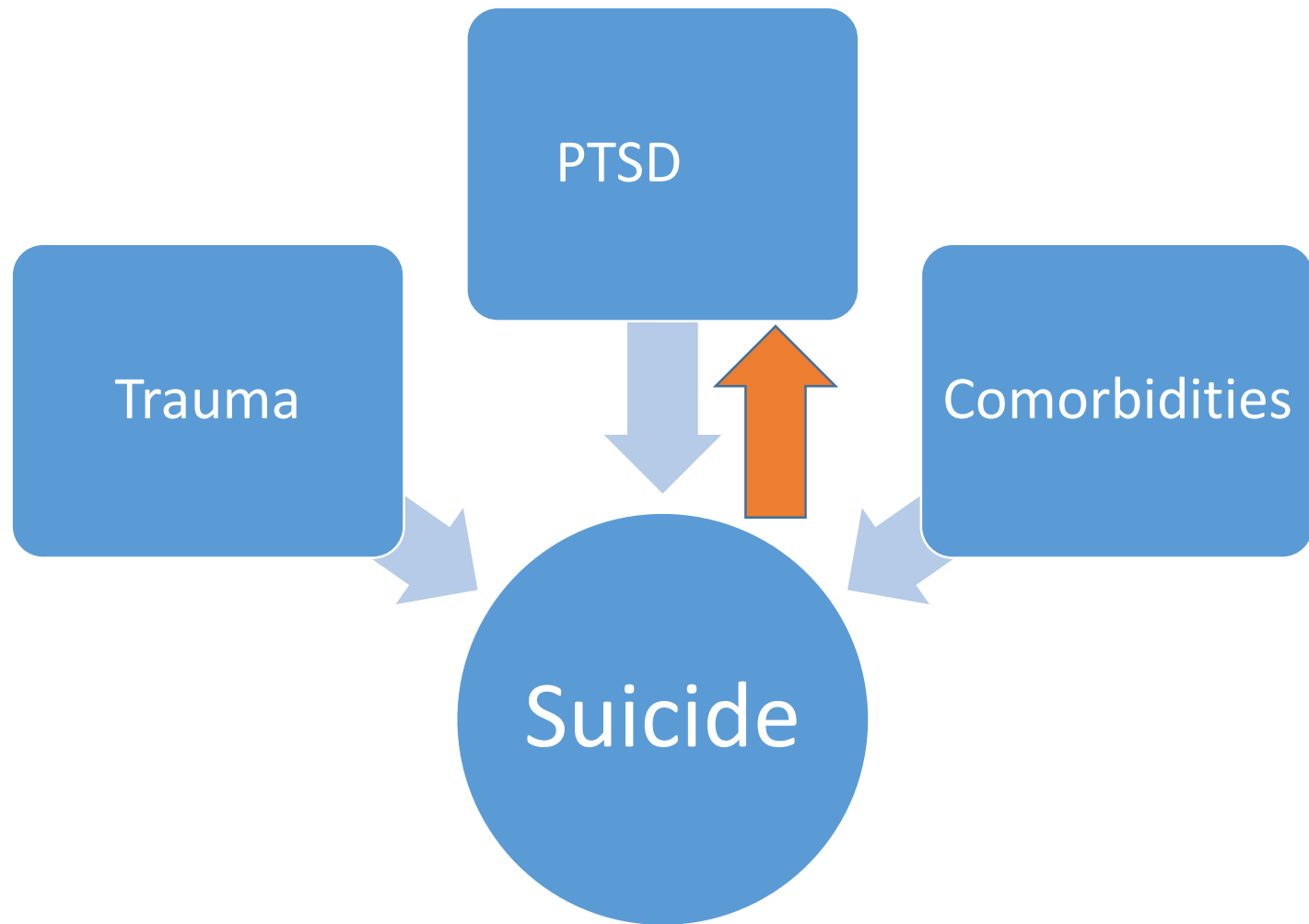
- There is a relationship between many types of trauma and suicidal behaviors, for example:
 - Traumas such as childhood abuse may increase suicide risk
 - Military sexual trauma (MST) increases the risk for suicide and intentional self-harm



PTSD Increases Suicide Risk

- Suicide risk is
 - Higher among those who experienced trauma due to the symptoms of PTSD
 - Higher in these individuals because of related psychiatric conditions
- PTSD alone out of six anxiety diagnoses was significantly associated with suicidal ideation or attempts
- The Canadian Community Health Survey found that PTSD conferred higher risk for suicide attempts after controlling for physical illness and other mental disorders
- High levels of intrusive memories can predict risk of suicide
- Anger and impulsivity have been shown to predict suicide risk in those with PTSD.
- Some cognitive styles of coping such as using suppression to deal with stress may be additionally predictive of suicide risk in individuals with PTSD

Trauma, PTSD, and Comorbidities Increase Suicide Risk

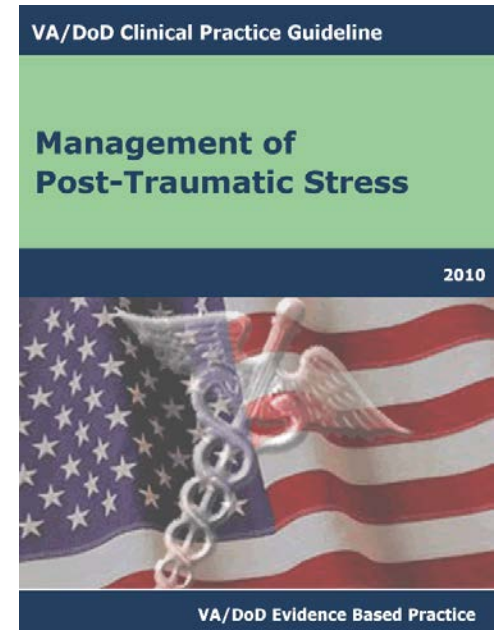


Effectively Treating PTSD

Effective PTSD Therapies are Available

Significant benefit (good evidence): A strong recommendation that the intervention is always indicated and acceptable

- Cognitive Therapy
- Exposure Therapy
- Stress Inoculation Training
- Eye Movement Desensitization Reprocessing (EMDR)
- PTSD therapies can be used with stable suicidal patients



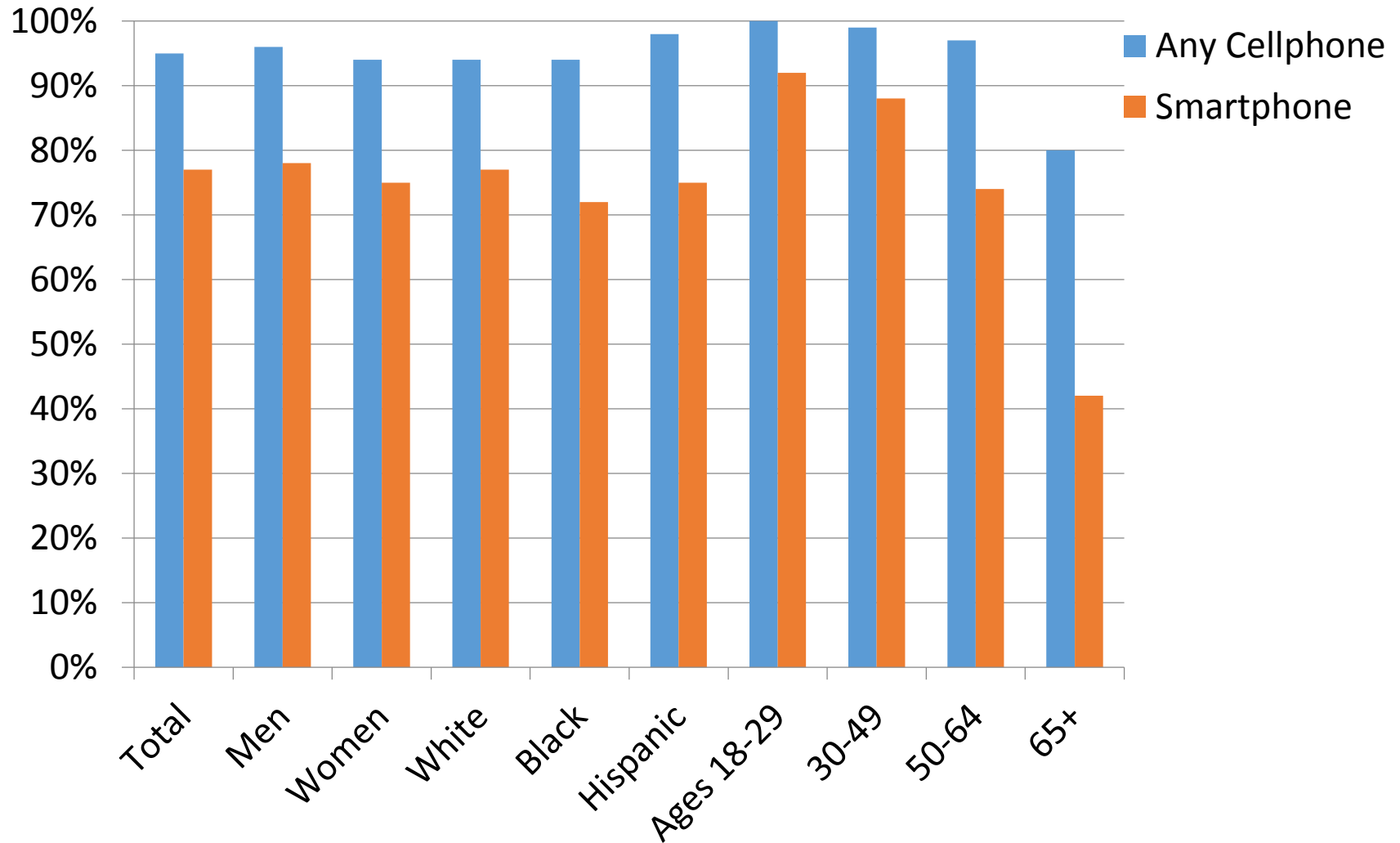
Yet, There's Still a Tremendous Unmet Need

- PTSD is a major public health concern
- Many do not seek treatment because of:
 - logistical issues, privacy and stigma-related concerns, insufficient motivation, negative beliefs about the effectiveness of treatment, and a desire to resolve symptoms on one's own (Hoge et al., 2004; Shalev, Ankri, Peleg, Israeli-Shalev, & Freedman, 2011)
- Traditional treatment approaches are inadequate to meet this need
 - Too few providers available and trained
 - High dropout
 - Not all patients benefit
 - Disparities in access to care

Promising Innovations

Mobile Apps

Almost Everyone Has Smartphones



IMPROVE TREATMENT REACH, DELIVERY, EFFICIENCY, AND EFFECTIVENESS.



**Aid Self-
Management**



Enhance Clinical Care



Support Families



**Enable Healthcare
Providers**

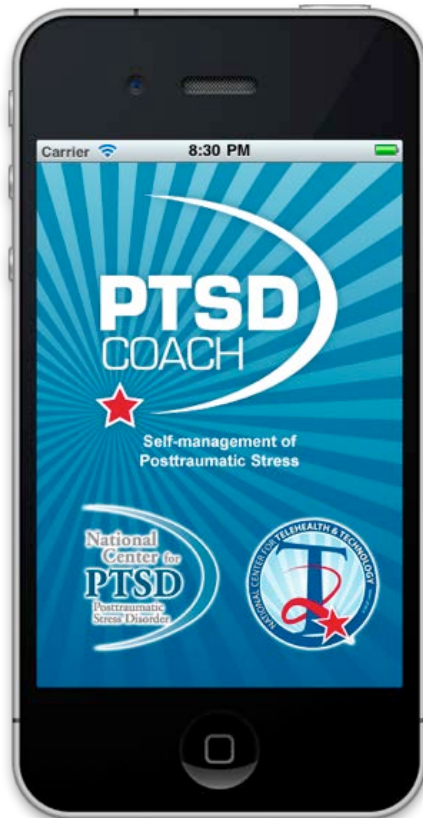


**Support Evidence-Based
Psychotherapy**



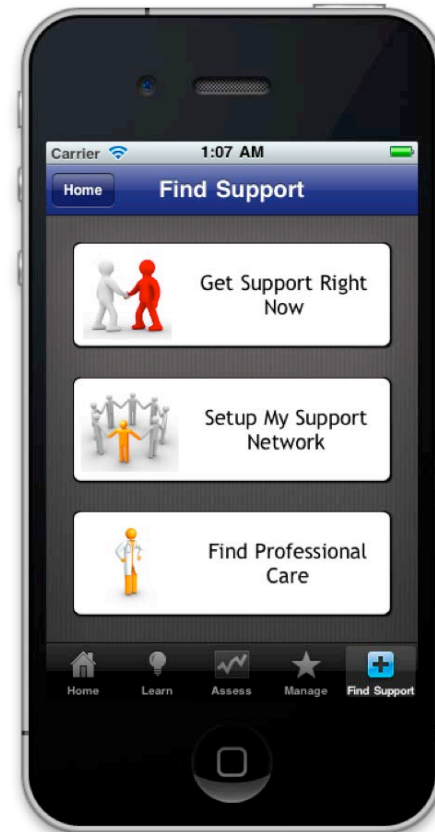
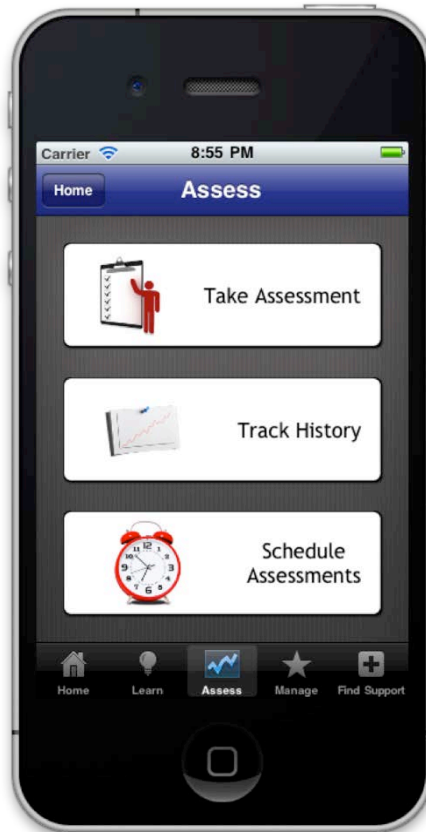
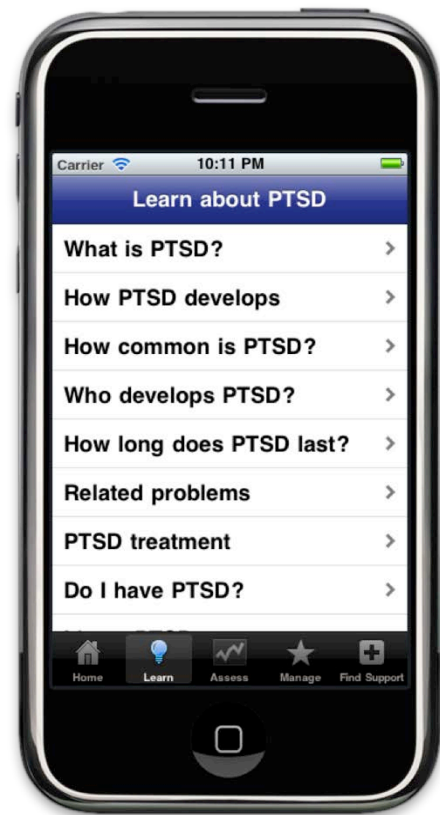
**Educate/Train/Increase
Efficiencies**

PTSD Coach

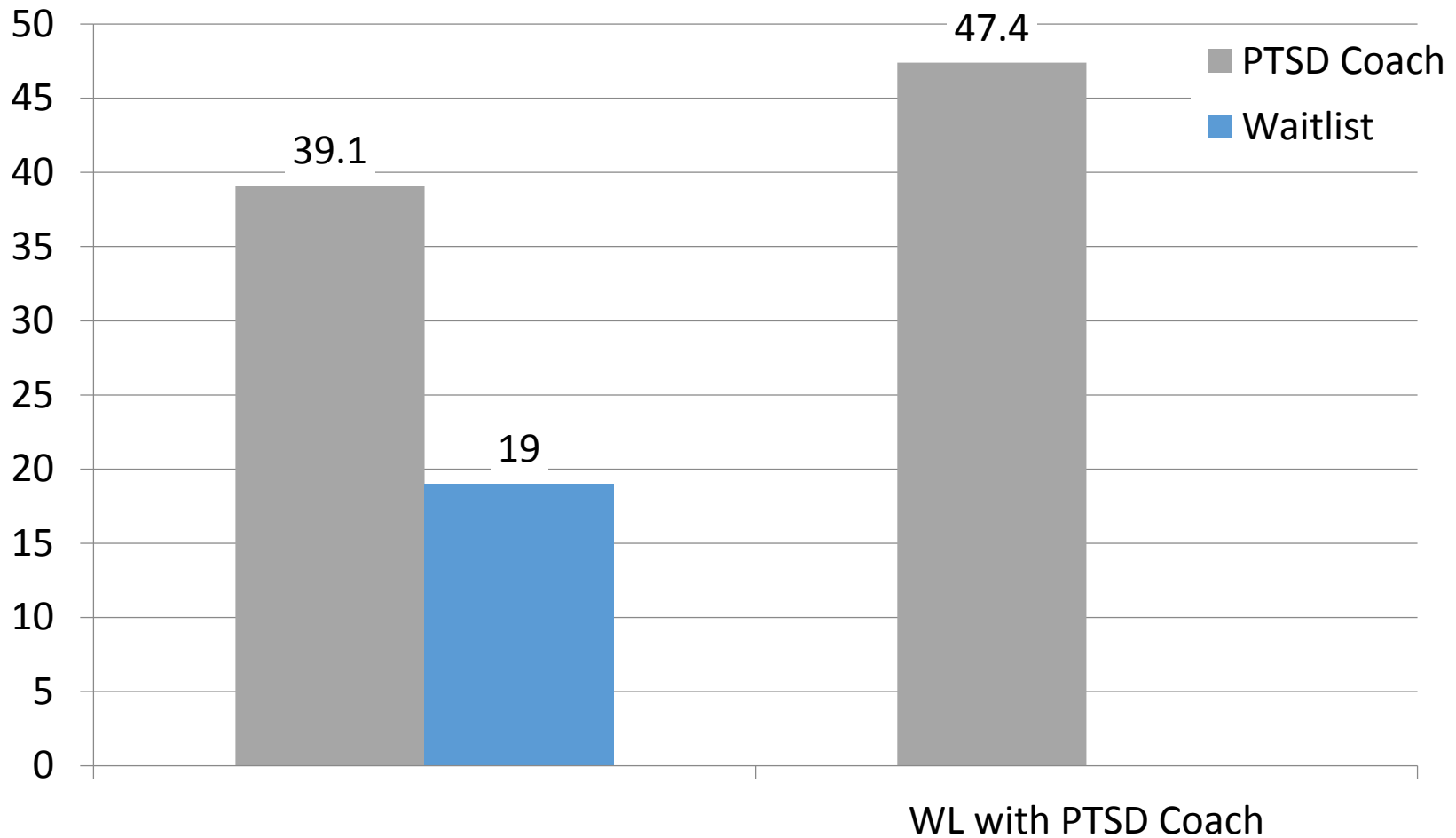


- High ratings for IOS and Android
- FAA Chairman's Award for Advancement in Accessibility
- ATA President's Innovation Award
- Named: Best Federal App (Nextgov.net) and Top 10 Health Apps (Yahoo)

Key Interventions

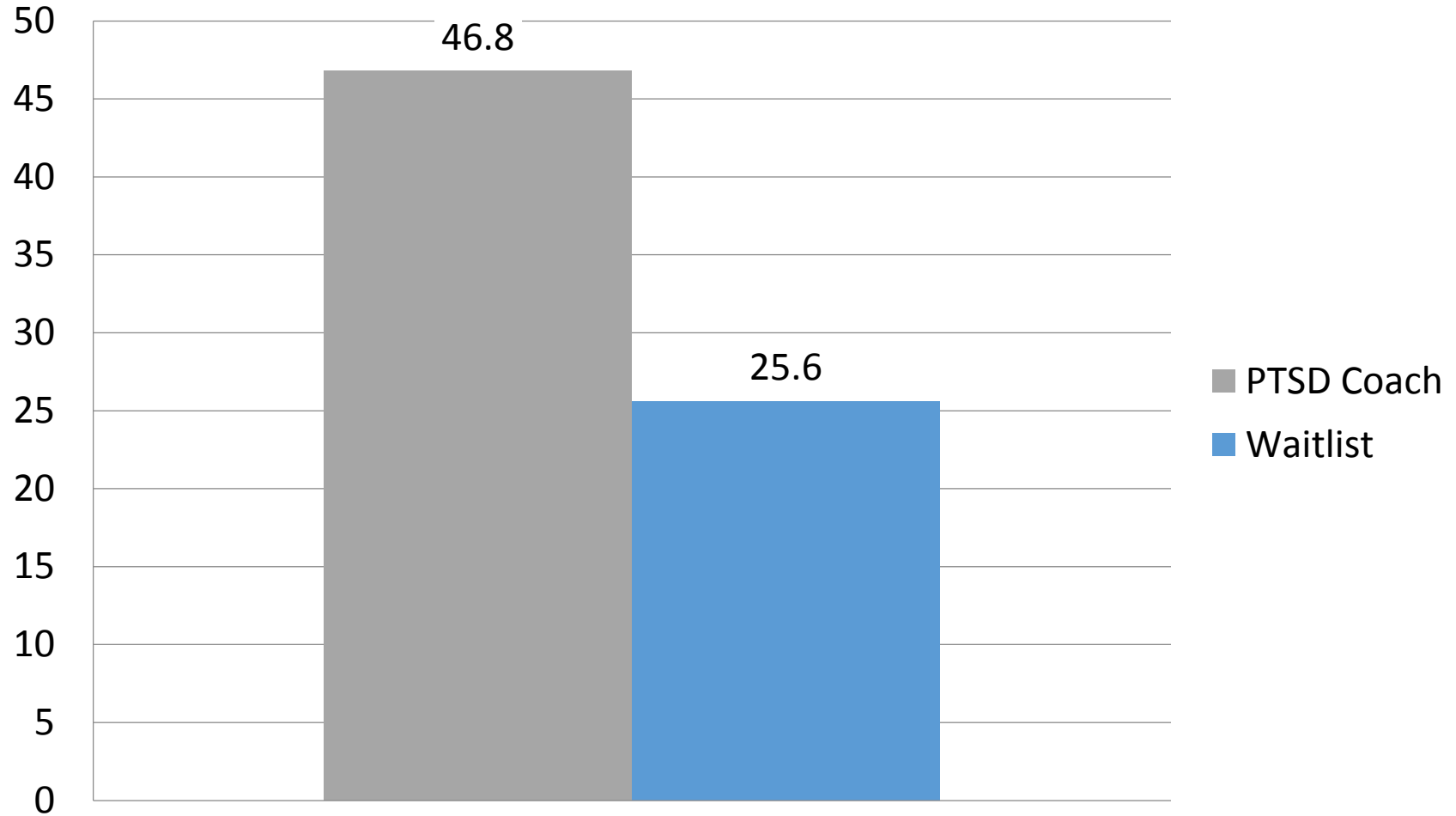


Study 1: Pilot RCT in the Community ($N = 49$)



$\chi^2[1, N = 44] = 2.13, p = .145$

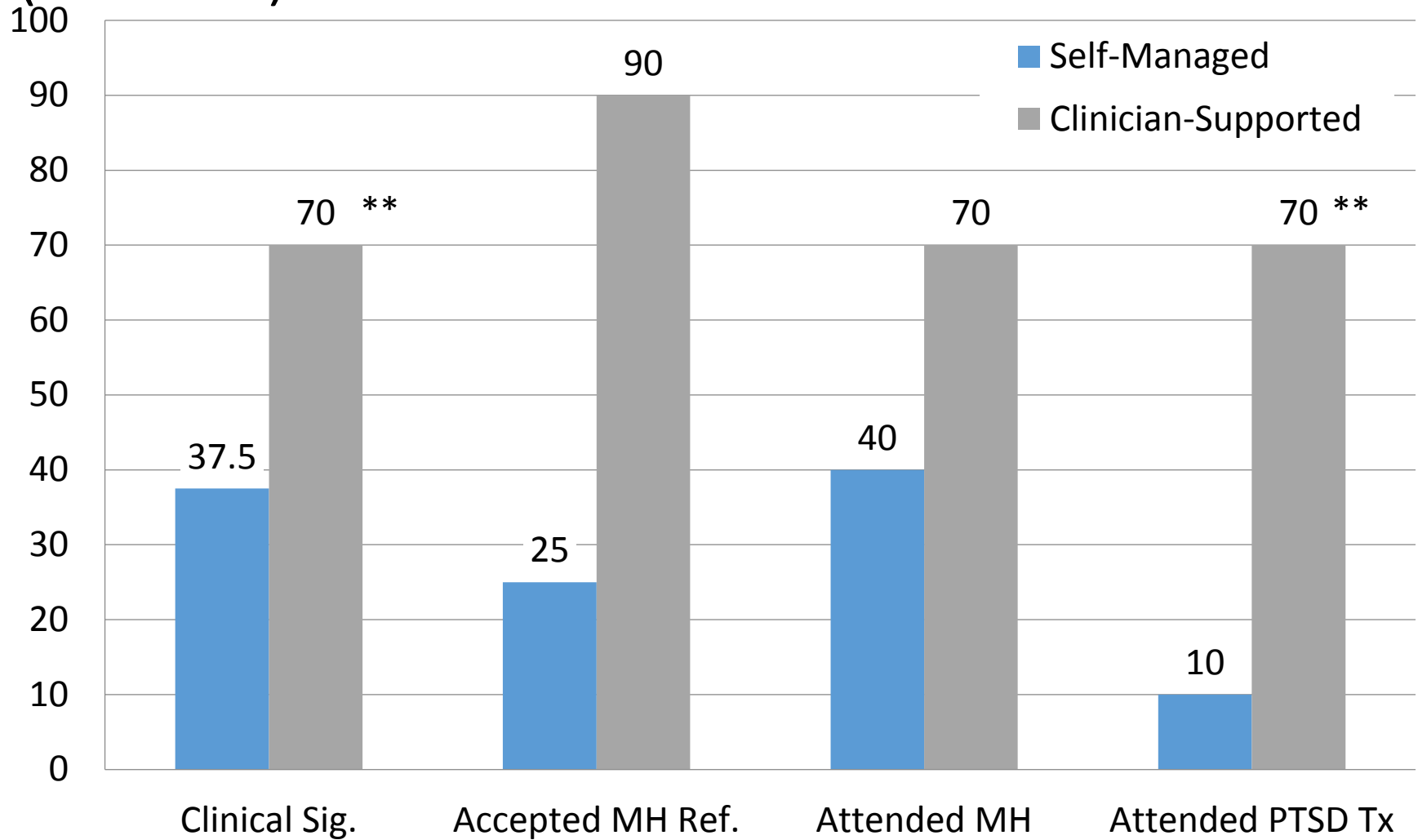
Study 2: Full-Scale RCT in the Community ($N = 120$)



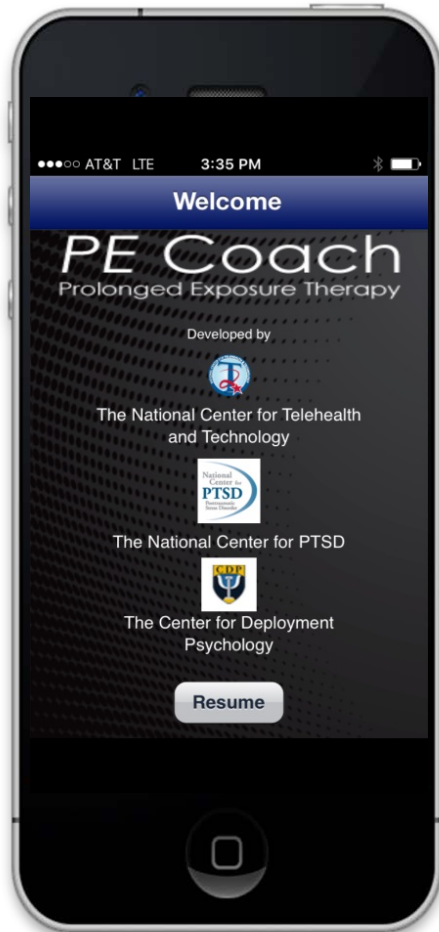
$\chi^2 [1, N = 120] = 5.64, p = .018^*$

Kuhn, Kanuri, et al. (2017)

Study 3: Pilot RCT in VA Primary Care ($N = 20$)

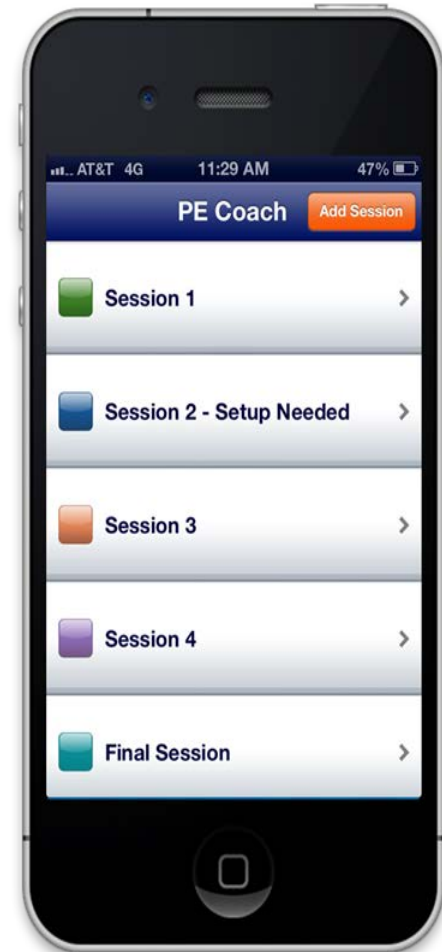


PE Coach

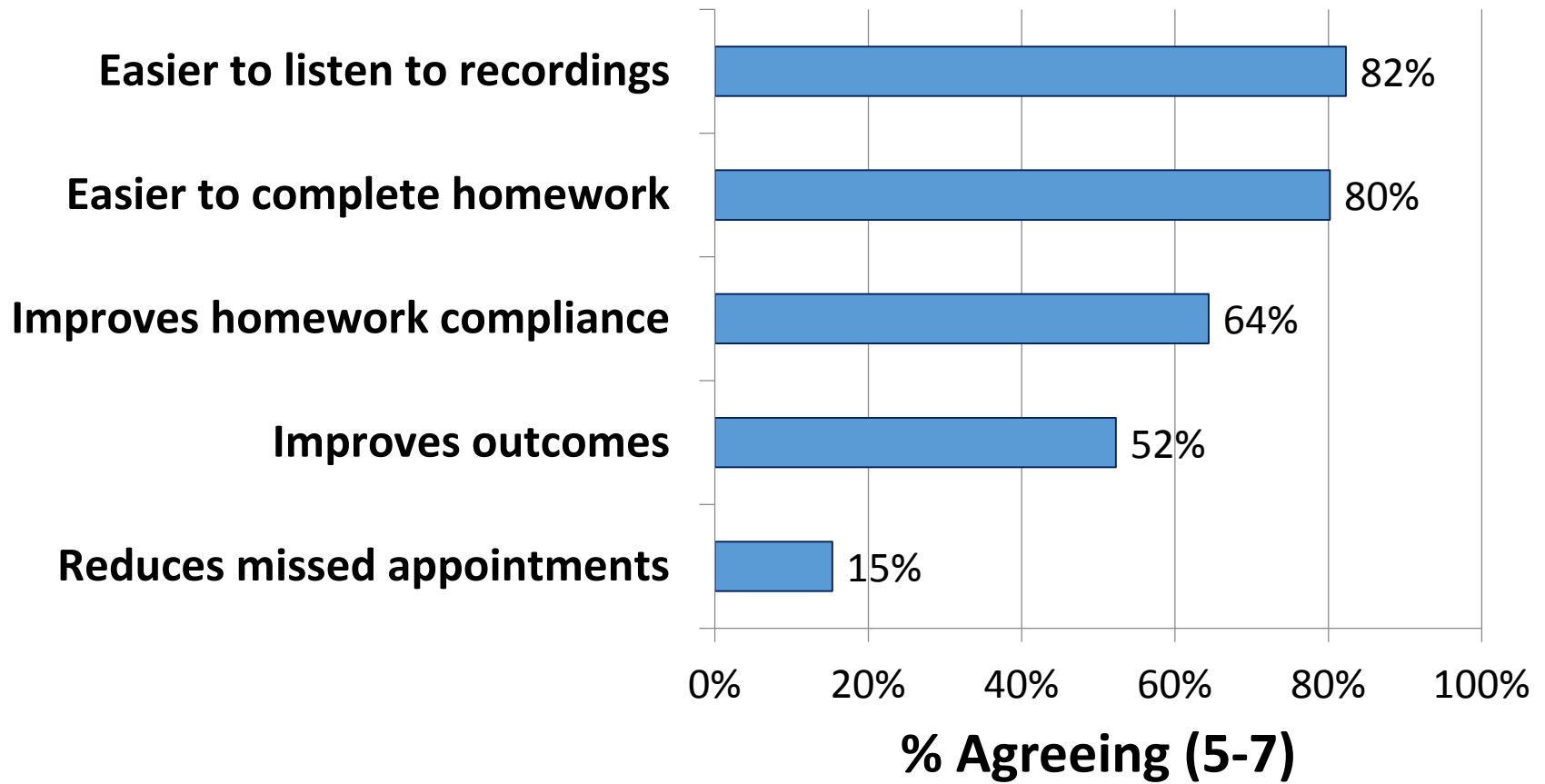


Some Major Functions

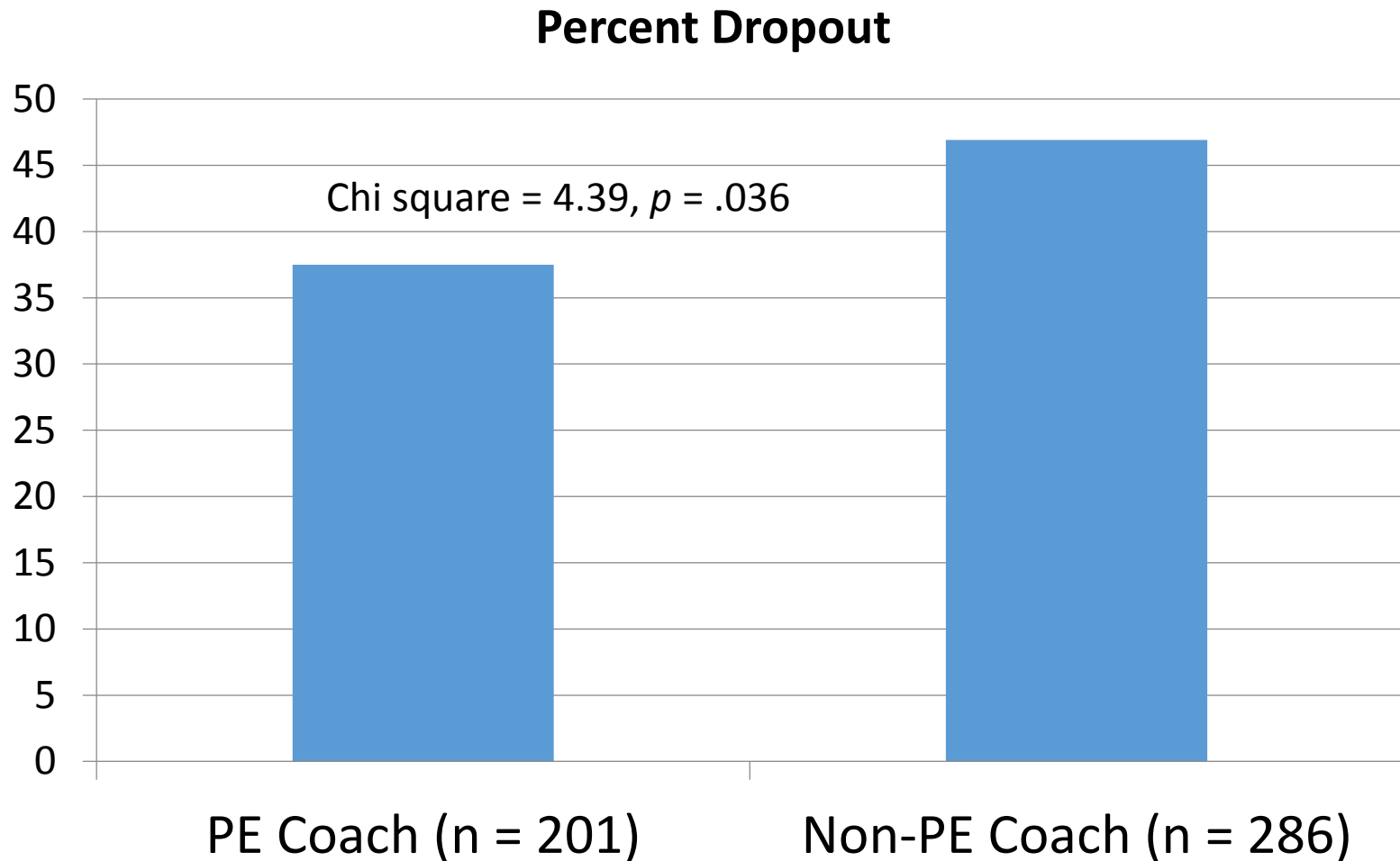
- Audio-record sessions
- Construct in vivo hierarchy
- Record homework
- Track symptoms
- Practice breathing retraining
- Review psycho-educational materials
- Schedule appointments with reminders



Clinicians' Perceived Impact of PE Coach ($N = 125$)



Potential Impact on Dropout ($N = 487$)



Most Important Data Yet

“The app (PTSD Coach) has also already proven to be a useful tool for the staff at the Veterans Crisis Line. Within the first two hours of the app’s official launch, the Crisis Line staff were contacted by a distressed Veteran who reported being instructed by the app to call the crisis line and was subsequently given an appointment at the local VA medical center. Crisis Line staff have begun to regularly recommend this resource to callers.”

Helpful Informational Resources

- National Center for PTSD
 - www.PTSD.va.gov
- Feel free to contact me at: Eric.Kuhn@VA.gov