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Community Rounds Workshop Series

Evidence-Based Treatment of PTSD in Individuals with OUD, and Innovative Approaches for Increasing Access to Care in Rural Communities

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(UVM CORA)

Disclosures

There is nothing to disclose for this UVM CORA Community Rounds session.

Potential Conflict of Interest:

All potential conflicts of Interest have been resolved prior to the start of this program.

All recommendations involving clinical medicine made during this talk were based on evidence that is accepted within the profession of medicine as adequate justification for their indications and contraindications in the care of patients.

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INTERPROFESSIONAL CONTINUING EDUCATION

Presentation Overview

- Define trauma and posttraumatic stress disorder (PTSD)
- Present an overview of PTSD prevalence and impact in the general population and among individuals with opioid use disorder (OUD)
- Review effective treatment approaches for PTSD
- Discuss barriers to access to evidence-based trauma treatment in rural communities and how telemedicine may help overcome these barriers
- Describe the feasibility and efficacy of prolonged-exposure therapy for PTSD in individuals with co-occurring OUD

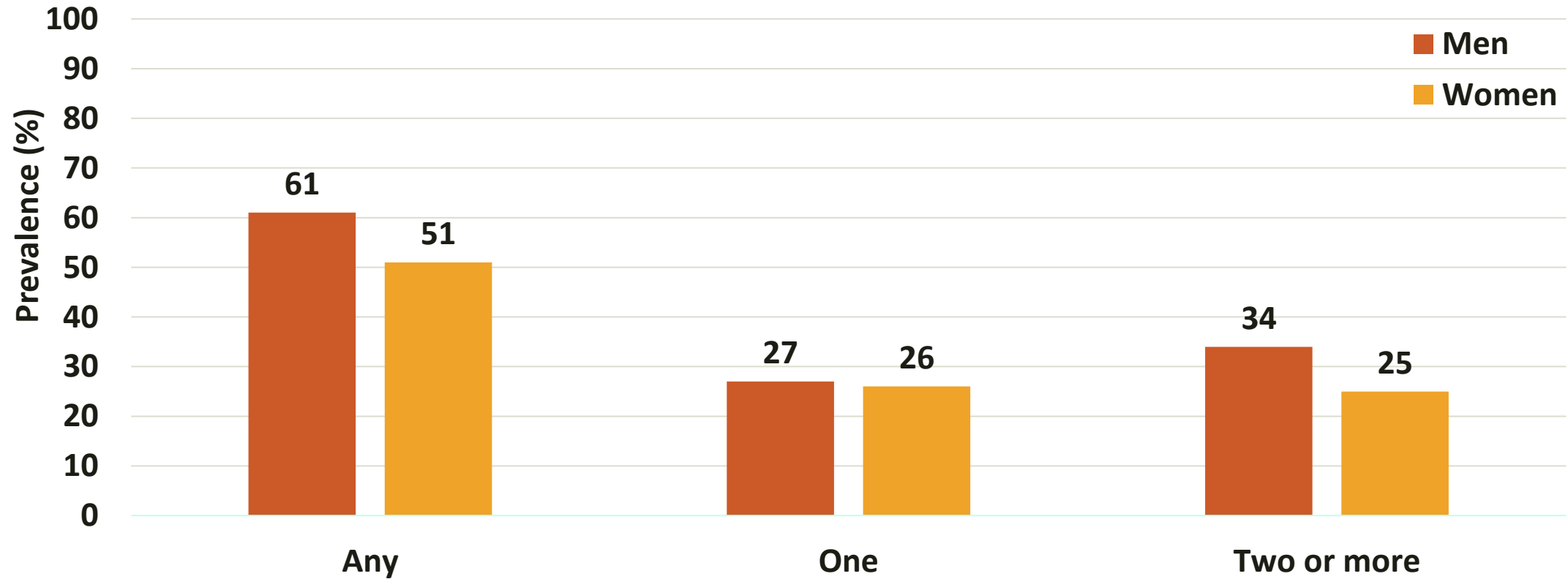
Diagnosis of Posttraumatic Stress Disorder (PTSD) DSM-5

Posttraumatic Stress Disorder (PTSD) Overview

- PTSD is defined as a psychiatric disorder that occurs in people who have experienced or witnessed a traumatic event (e.g., natural disaster, sexual assault, physical assault)
- In addition to experiencing a traumatic event, individuals must exhibit symptoms from each of the following four symptoms clusters in order to meet criteria for DSM-defined PTSD:
 - Intrusion symptoms (e.g., intrusive thoughts, nightmares)
 - Avoidance of internal and external stimuli associated with the trauma
 - Negative alterations in cognitions and mood
 - Arousal and reactivity (e.g., hypervigilance, problems with sleep)

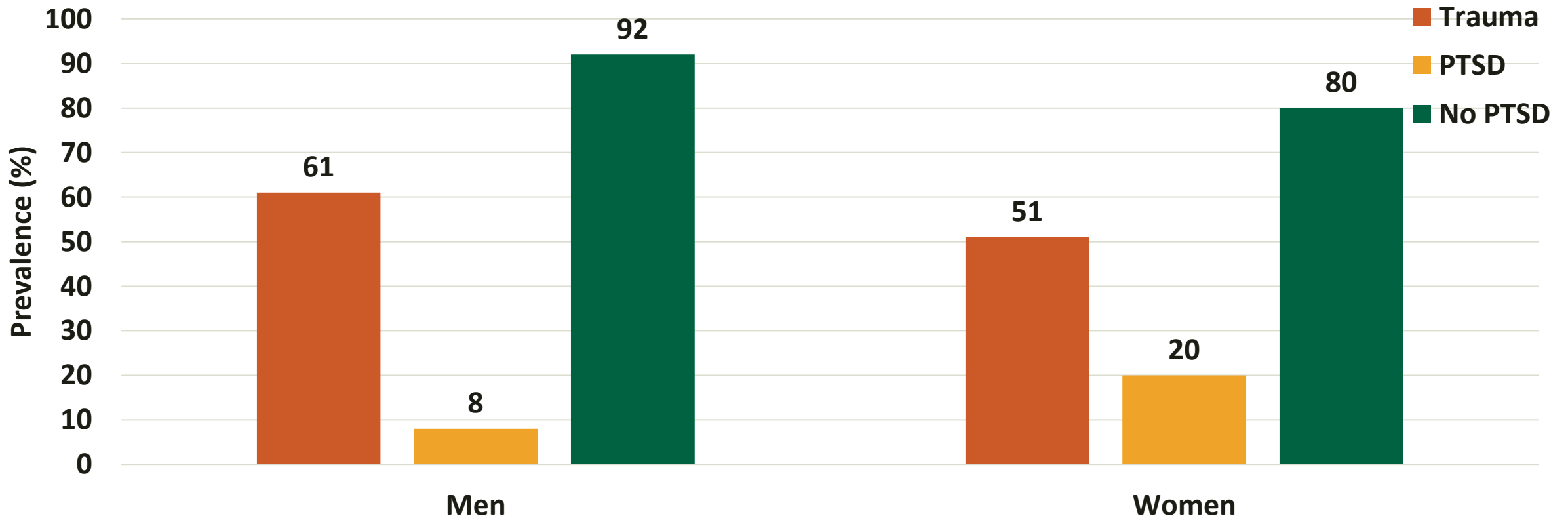
Prevalence of Trauma and PTSD

Lifetime Prevalence of Trauma in the USA



Kessler et al., 1995

Lifetime Prevalence of Trauma and PTSD in Men and Women in the USA



Kessler et al., 2000

PTSD and Psychiatric Comorbidities

- PTSD frequently co-occurs with other psychiatric conditions
- Among people with current PTSD as their primary diagnosis:
 - Any current anxiety or mood disorder (92%)
 - Current Major Depressive Disorder (69%)
 - Current panic disorder (23%)
 - Current obsessive-compulsive disorder (23%)
 - Lifetime alcohol/drug abuse or dependence (38%)

The Ongoing Opioid Crisis



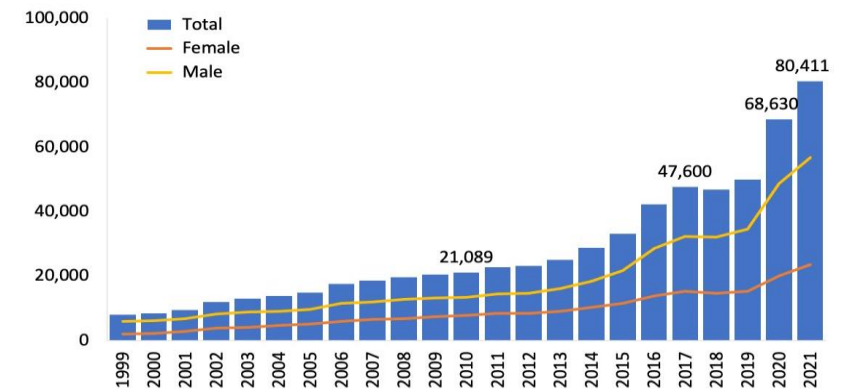
- **8.9 million** people misused opioids and **6.1 million** met criteria for opioid use disorder (OUD) in 2022.

- As a result, opioid-related consequences are prevalent:



- Overdoses
- Emergency department visits
- Premature death

Figure 3. National Overdose Deaths Involving Any Opioid*, Number Among All Ages, by Gender, 1999-2021



*Among deaths with drug overdose as the underlying cause, the "any opioid" subcategory was determined by the following ICD-10 multiple cause-of-death codes: natural and semi-synthetic opioids (T40.2), methadone (T40.3), other synthetic opioids (other than methadone) (T40.4), or heroin (T40.1). Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

The Ongoing Opioid Crisis

The economic costs of the opioid crisis are estimated at over \$1.02 trillion annually

- Fatal opioid overdoses cost an estimated \$550 billion
- Economic costs of OUD estimated at \$471 billion

PTSD & OUD

- Almost all individuals (~90%) with opioid use disorder (OUD) report lifetime trauma exposure
- One-third of these individuals meet criteria for PTSD

Lifetime prevalence of trauma and PTSD in the general population vs. those with OUD		
	Trauma Exposure	PTSD
General Population	60.7%	7.8%
OUD	87.8%	33.2%

Kessler et al., 1995; Kessler et al., 2008; Mills et al., 2006

PTSD & OUD (Continued)

Table 1. Intake Trauma Screening Question:	%
In the past month have you:	
Experienced or witnessed or had to deal with an extremely traumatic event that included actual or threatened death or serious injury to your or someone else?	61
Tried hard not to think about it or went out of your way to avoid situations that reminded you of a traumatic event?	53
Felt numb or detached from others, activities, or your surroundings?	49
Had nightmares about a traumatic event when you did not want to?	48
Have you re-experienced the awful event in a distressing way (nightmares, intense recollections, flashbacks, or physical reactions) in the past month?	48
Been consistently on guard, watchful, or easily startled?	47

- 94% of Chittenden Clinic (South Burlington, VT) patients endorse >1 PTSD symptom
- 61% report experiencing or witnessing a traumatic event within the past month

Medications for OUD (MOUD) & PTSD

- MOUD (e.g., methadone, buprenorphine) are the most efficacious treatment for OUD



- MOUD patients with PTSD generally experience worse outcomes
 - More severe psychiatric distress (e.g., higher rates of depression and suicide)
 - More psychosocial problems (e.g., worse occupational functioning)
 - These increased burdens may negatively impact MOUD treatment retention and outcomes

Hien et al., 2000; Mattick et al., 2014; Meshberg-Cohen et al., 2021; Mills et al., 2005ab; Mills et al., 2018; Schiff et al., 2010

PTSD & OUD in Rural Areas

- From 1999 through 2019, drug overdose deaths increased from 4.0 per 100,000 to 19.6 in rural counties
- Access to MOUD is limited in rural areas
 - Only 22% of Americans with OUD received treatment in the past year.
 - Over half of counties lack a single provider, and
 - Providers also often carry a limited number of patients

PTSD & OUD in Rural Areas, cont.

- In rural areas, concurrent mental health needs of MOUD patients are frequently untreated
 - Only half of all individuals with concurrent mental health disorders and OUD received past-year mental health treatment
 - 20% of U.S. counties experience a shortage of mental health practitioners and the greatest predictor of unmet need is rurality
- Poverty, mental health stigma, and lack of reliable transportation may function as barriers to mental health treatment in rural areas

PTSD & OUD in a Rural State (VT)



Preventive Medicine
Volume 152, Part 2, November 2021, 106817



Posttraumatic stress disorder in individuals seeking treatment for opioid use disorder in Vermont

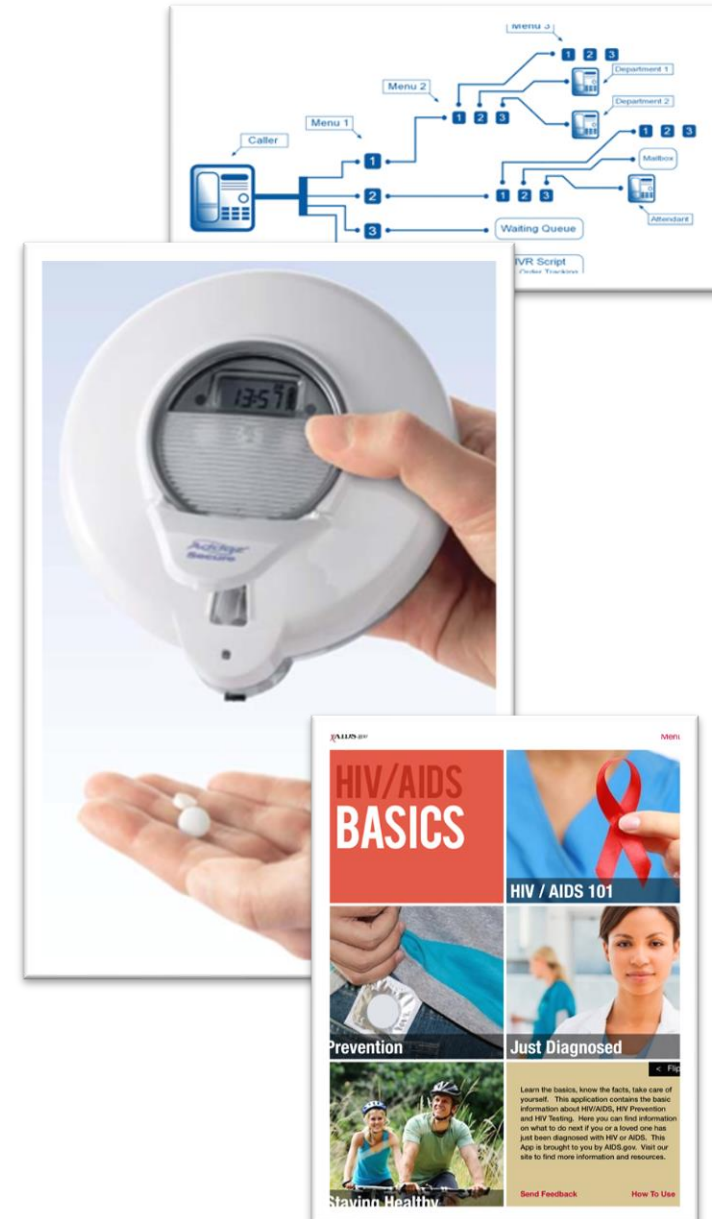
Kelly R. Peck^a  , Nathaniel Moxley-Kelly^a  , Gary J. Badger^b  , Stacey C. Sigmon^a  

Aim

- Examine the prevalence of PTSD among a sample of individuals seeking buprenorphine treatment for OUD in Vermont
- Examine whether demographic characteristics, health service utilization, patterns of substance use, psychiatric symptoms, and psychosocial functioning differed for individuals with and without concurrent PTSD

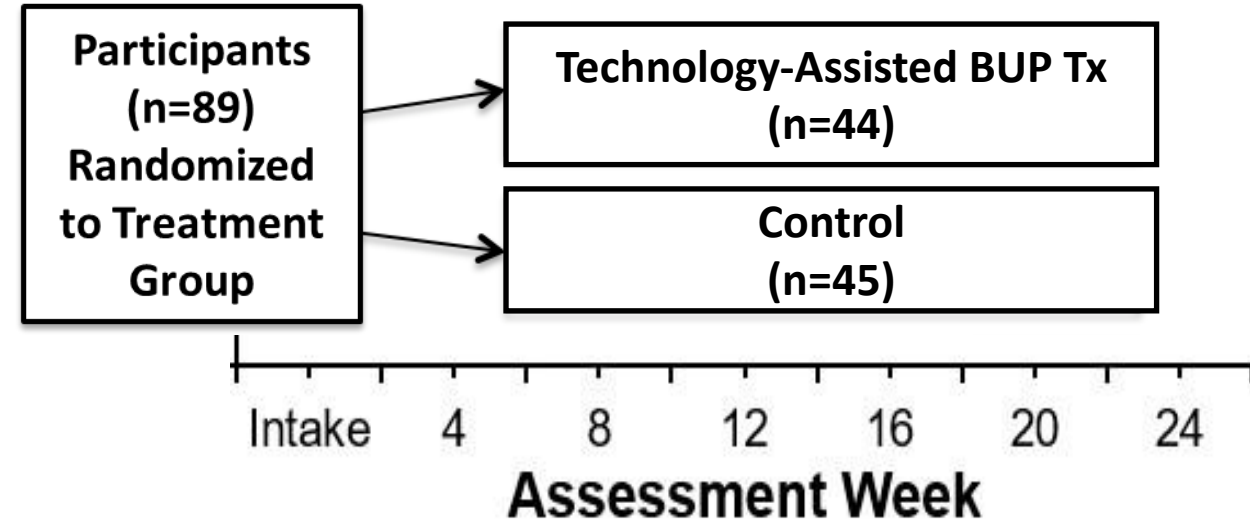
Technology-Assisted Buprenorphine Treatment (TAB)

- Novel approach to reducing risk of overdose and illicit opioid use among Vermonters
- **Treatment components:**
 - **Automated medication dispensing**
 - **Daily monitoring**
 - **Random call-backs**
 - **Automated HIV, HCV, and Overdose Education**



Technology-Assisted Buprenorphine Treatment (TAB) Study

- Two 24-week randomized clinical trials to evaluate efficacy
- Participants (n = 89)
 - ≥ 18 years old
 - Meet DSM-V criteria for OUD
 - Provide opioid-positive urine at intake
 - Not currently receiving opioid agonist treatment



Technology-Assisted Buprenorphine Treatment (TAB) Study

Results

- Thirty-one percent (95% CI: 21.9% - 41.1%; n = 28) of participants reported that they had received a diagnosis of PTSD

Drug Treatment and Health Service Utilization			
Measure	PTSD (n = 28)	No PTSD (n = 61)	p-value
Ever received treatment for opioids, N (%)	11 (39.3)	40 (65.6)	.02
Number of opioid treatment episodes ^a	2.8 (1.8)	2.5 (2.4)	.64
Duration of opioid treatment, years ^a	3.2 (6.0)	1.7 (2.6)	.72
Primary care physician, N (%)	24 (88.9)	36 (61.0)	.009
Medical insurance, N (%)	27 (96.4)	40 (66.7)	.002
Hospitalized for medical reasons, N (%)	25 (85.7)	42 (68.9)	.09
Hospitalized for psychiatric reasons, N (%)	13 (46.4)	5 (8.2)	<.001
Outpatient psychiatric treatment, N (%)	22 (78.6)	22 (36.1)	<.001

Technology-Assisted Buprenorphine Treatment (TAB) Study

Results

Psychiatric symptoms and psychosocial functioning			
Measure	PTSD (n = 28)	No PTSD (n = 61)	p-value
Beck Depression Inventory (BDI-II)	19.0 (13.3)	12.2 (11.5)	.02
Brief Symptom Inventory - Global Severity Index (BSI-GSI)	42.3 (39.1)	33.5 (36.6)	.31
Beck Anxiety Inventory (BAI)	13.0 (10.6)	6.6 (8.5)	.003
Addiction Severity Index (ASI)^a			
Medical	.52 (.44)	.21 (.33)	<.001
Employment	.57 (.32)	.50 (.34)	.31
Alcohol	.04 (.08)	.09 (.13)	.05
Drug	.35 (.12)	.28 (.11)	.01
Legal	.05 (.11)	.04 (.11)	.80
Family/social	.12 (.19)	.09 (.15)	.34
Psychiatric	.37 (.22)	.21 (.18)	<.001

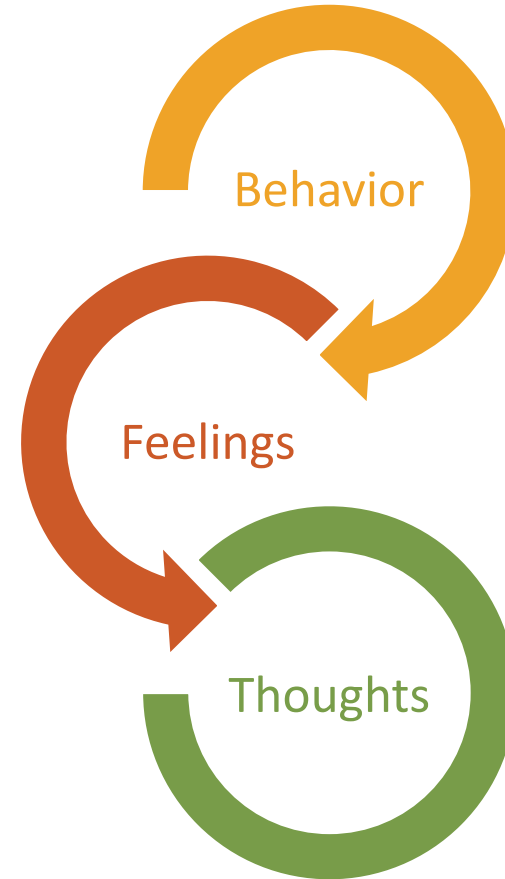
Effective Psychotherapy for PTSD

PTSD Interventions

- Individual counseling
- Support groups
- Psychodynamic psychotherapy (e.g., psychoanalysis)
- Hypnotherapy
- Eye Movement Desensitization Reprocessing (EMDR)
- Short-term cognitive behavioral therapy (CBT)
 - The only type of psychotherapy that has been systematically studied and therefore is evidence based
 - Very effective in 8-15 sessions

CBT Treatments for PTSD

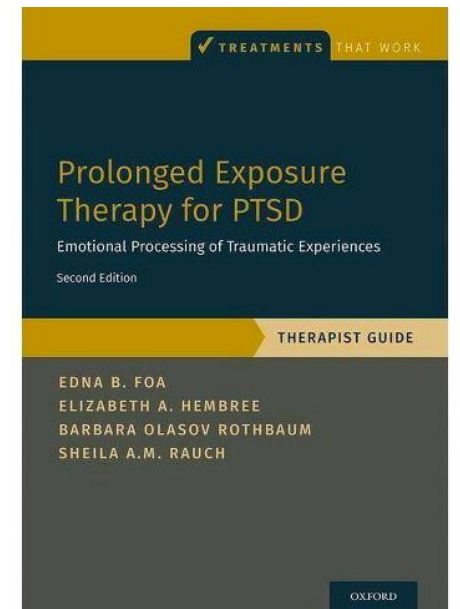
- Promote safe confrontations (via exposure, discussions) with trauma reminders (memories, situations)
- Aimed at modifying the dysfunctional cognitions underlying the PTSD



Prolonged Exposure (PE) Therapy

- PE is an empirically supported and highly-efficacious intervention that is regarded as a first-line treatment for PTSD
- PE disrupts the cycle of anxiety and avoidance that characterizes PTSD by deconditioning fear responses to trauma-related stimuli via sustained imaginal and in-vivo exposure exercises
 - Prolonged, imaginal exposure to the trauma memory (revisiting, recounting, and processing)
 - Repeated in vivo exposure to safe situations that are avoided because of trauma-related fear

Foa et al., 1999, 2005, 2008, 2019; Jonas et al., 2013; Powers et al., 2010; Schnurr et al., 2007



Empirical Evidence for the Efficacy of Prolonged Exposure Therapy and Other Treatments for PTSD

Efficacy of PE in the General Population

- PE and other active treatments for PTSD (e.g., stress inoculation training, CBT, and their combination) are comparable in terms reducing PTSD symptoms
- PE may be more efficacious than EMDR
- PE-related improvements in PTSD symptoms are maintained over long-term follow-up (up to 10 years)
- PE is effective when delivered by non-experts (more on that later)

Journal of Consulting and Clinical Psychology
1999, Vol. 67, No. 2, 194–200

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0022-006X/99/\$3.00

A Comparison of Exposure Therapy, Stress Inoculation Training, and Their Combination for Reducing Posttraumatic Stress Disorder in Female Assault Victims

Edna B. Foa, Constance V. Dancu, Elizabeth A. Hembree, Lisa H. Jaycox, Elizabeth A. Meadows, and Gordon P. Street
Medical College of Pennsylvania–Hahnemann University

Journal of Consulting and Clinical Psychology
2005, Vol. 73, No. 5, 933–944

Copyright 2005 by the American Psychological Association
0022-006X/05/\$12.00 DOI: 10.1037/0022-006X.73.5.933

Randomized Trial of Prolonged Exposure for Posttraumatic Stress Disorder With and Without Cognitive Restructuring: Outcome at Academic and Community Clinics

Edna B. Foa, Elizabeth A. Hembree, Shawn P. Cahill, Sheila A. M. Rauch, and David S. Riggs
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Journal of Consulting and Clinical Psychology
2002, Vol. 70, No. 4, 867–879

Copyright 2002 by the American Psychological Association, Inc.
0022-006X/02/\$5.00 DOI: 10.1037/0022-006X.70.4.867

A Comparison of Cognitive-Processing Therapy With Prolonged Exposure and a Waiting Condition for the Treatment of Chronic Posttraumatic Stress Disorder in Female Rape Victims

Patricia A. Resick, Pallavi Nishith, Terri L. Weaver, Millie C. Astin, and Catherine A. Feuer
University of Missouri—St. Louis

Journal of Consulting and Clinical Psychology
2012, Vol. 80, No. 2, 201–210

In the public domain
DOI: 10.1037/a0028002

Long-Term Outcomes of Cognitive–Behavioral Treatments for Posttraumatic Stress Disorder Among Female Rape Survivors

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Journal of Consulting and Clinical Psychology
2003, Vol. 71, No. 2, 330–338

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0022-006X/03/\$12.00 DOI: 10.1037/0022-006X.71.2.330

Comparative Efficacy, Speed, and Adverse Effects of Three PTSD Treatments: Exposure Therapy, EMDR, and Relaxation Training

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Karina Lovell
University of Manchester

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Foa et al., 1999, 2005; Resick et al., 2002, 2012; Taylor et al., 2003

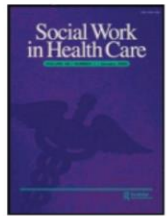
Advantages of Prolonged Exposure

- Largest number of studies supporting its efficacy and effectiveness
- Effective with the widest range of trauma populations
- Studied in many independent centers in the U.S. and around the world
- Widely disseminated in the U.S. and abroad
- Effective in the hands of non-experts

PTSD Treatment for Individuals with Concurrent Opioid Use Disorder (OUD)

PTSD Treatment for Patients with OUD

Initial studies suggest that PE is associated with reductions in PTSD symptom severity in patients receiving treatment for co-occurring OUD



Social Work in Health Care



ISSN: 0098-1389 (Print) 1541-034X (Online) Journal homepage: <http://www.tandfonline.com/loi/wshc20>

Prolonged Exposure for Treating PTSD Among Female Methadone Patients Who Were Survivors of Sexual Abuse in Israel

Miriam Schiff, Nitsa Nacasch, Shabtay Levit, Noam Katz & Edna B. Foa

Journal of Traumatic Stress
June 2018, 31, 373–382



Adults with Comorbid Posttraumatic Stress Disorder, Alcohol Use Disorder, and Opioid Use Disorder: The Effectiveness of Modified Prolonged Exposure

Kelly R. Peck^{1,2,3}, Julie A. Schumacher¹, Paul R. Stasiowicz⁴ and Scott F. Coffey¹

Journal of Consulting and Clinical Psychology
2017, Vol. 85, No. 7, 689–701

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0022-006X/17/\$12.00 <http://dx.doi.org/10.1037/ccp0000208>

Incentivizing Attendance to Prolonged Exposure for PTSD With Opioid Use Disorder Patients: A Randomized Controlled Trial

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Peck et al., 2018; Schacht et al., 2017; Schiff et al., 2015

PTSD Treatment for Patients with OUD

- As with other behavioral interventions, PE completion rates are often low and present a challenge to PE efficacy
 - Approximately 36% of patients in the general population drop out before completing treatment
 - Even more pronounced among patients with both PTSD and SUDs
 - A quarter of participants with concurrent PTSD and SUD fail to attend their first therapy session
 - >62% discontinue before completing treatment
 - <50% of patients remain in treatment until the third session when exposure (the active component of treatment) begins

PTSD Treatment for Patients with OUD

- Opioid agonists may have antidepressant and anxiolytic effects

(Dean et al., 2004; Falcon et al., 2015, 2016; Fingleton et al., 2015)

- Retrospective chart review of 2,015 veterans with PTSD found that buprenorphine was associated with significantly greater reductions in PTSD symptom severity compared to SSRIs

(Lake et al., 2019)

- Buprenorphine alone, without counseling associated with significant reductions in psychiatric symptoms

(Streck et al., 2018)

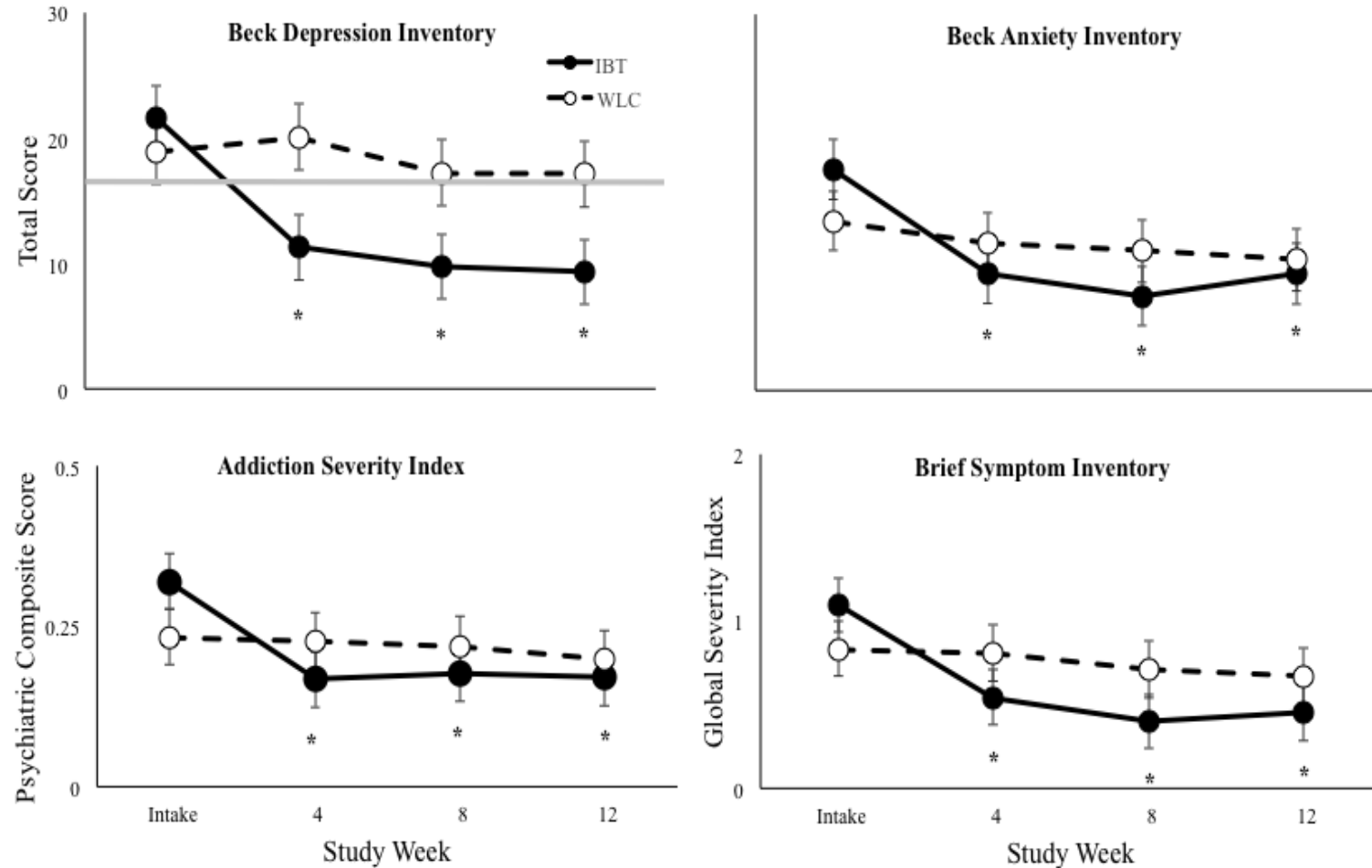


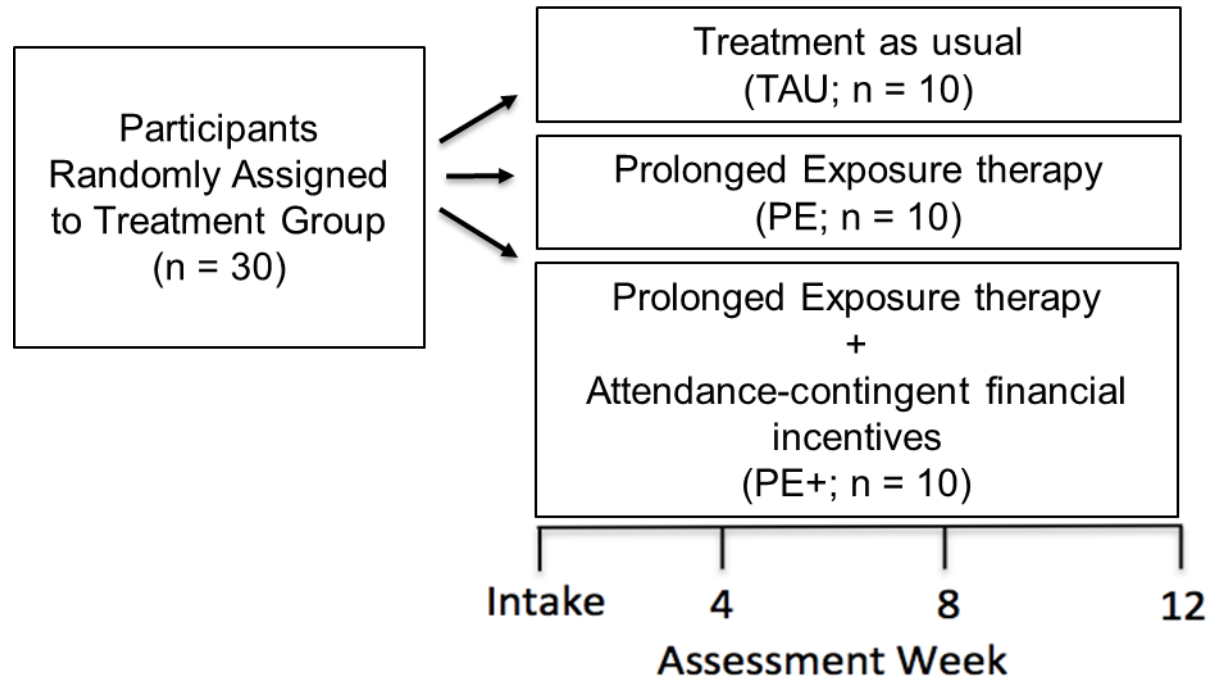
Figure 1. Changes over time in psychiatric symptoms for individuals who received buprenorphine versus who remained on the waitlist

Overview of Randomized Pilot Trial

- In November of 2019, we began a 12-week randomized trial to evaluate the feasibility of PE with financial incentives delivered contingent upon PE session attendance for improving PE session attendance and reducing PTSD symptoms among OUD patients with co-occurring PTSD
- Participants:
 - > 18 years old
 - Maintained on buprenorphine or methadone > 1 month
 - Meet DSM-V PTSD criteria

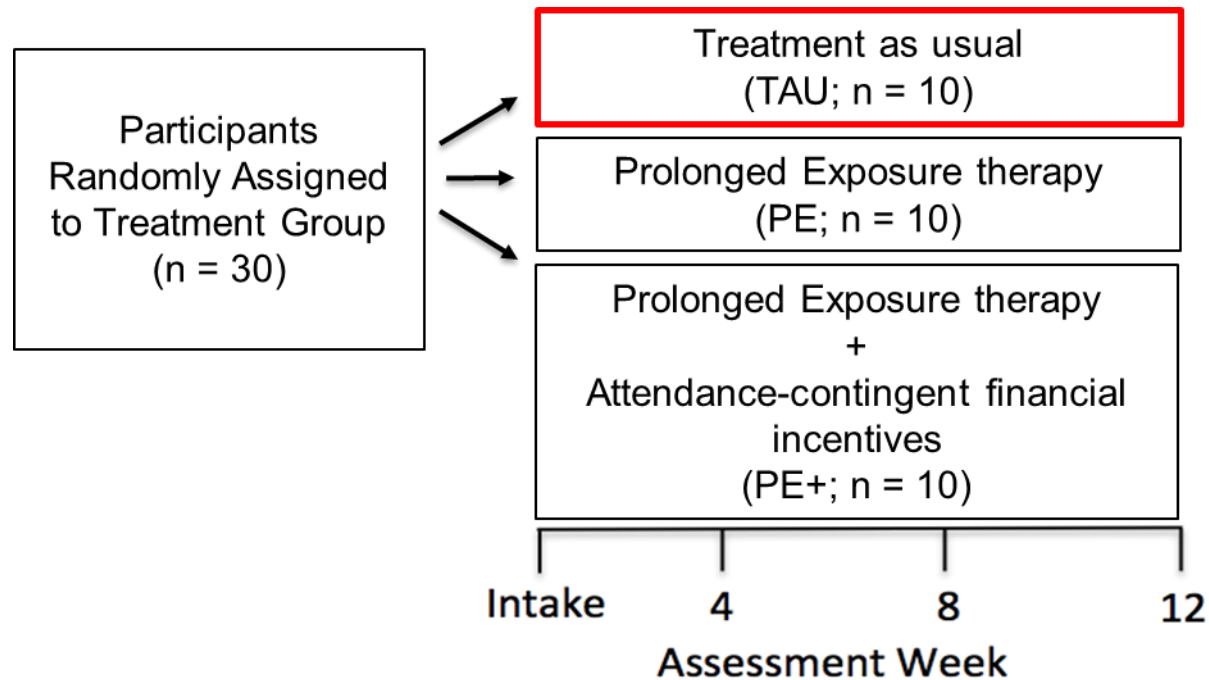
Overview of Randomized Pilot Trial

- Participants were randomly assigned to one of three experimental conditions:



Overview of Randomized Pilot Trial

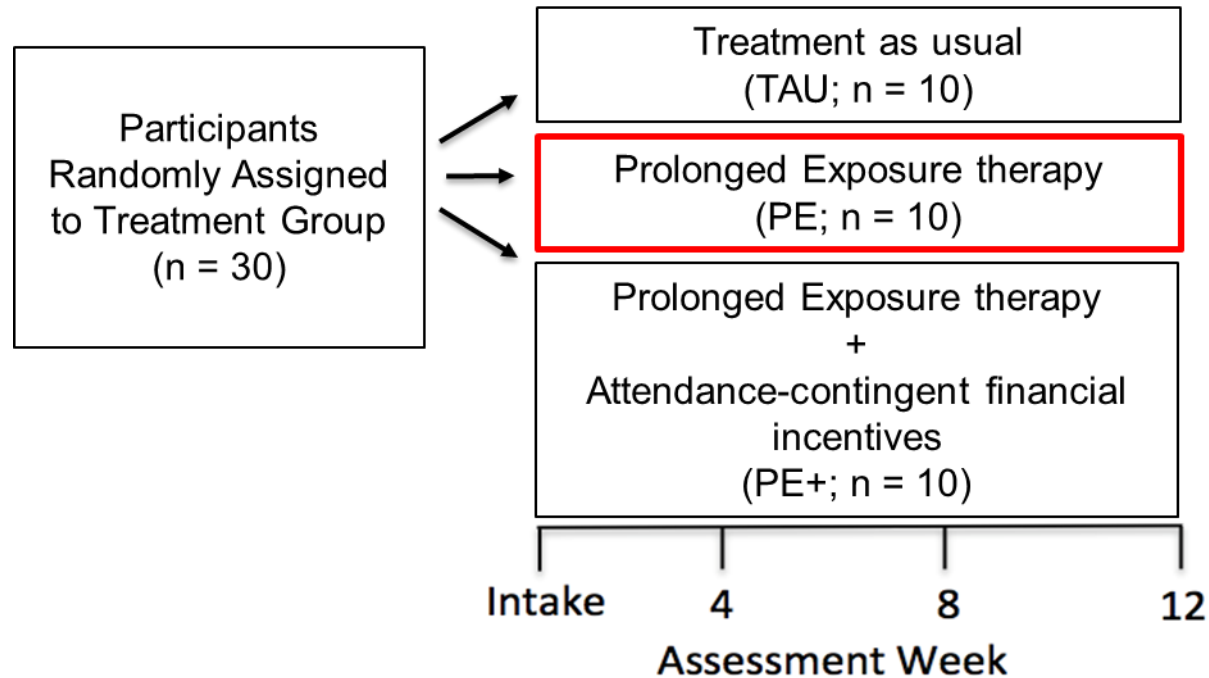
- Participants were randomly assigned to one of three experimental conditions:



- TAU:
 - Continued to receive buprenorphine or methadone from current provider
 - Completed assessments at Study Weeks 4, 8, and 12

Overview of Randomized Pilot Trial

- Participants were randomly assigned to one of three experimental conditions:

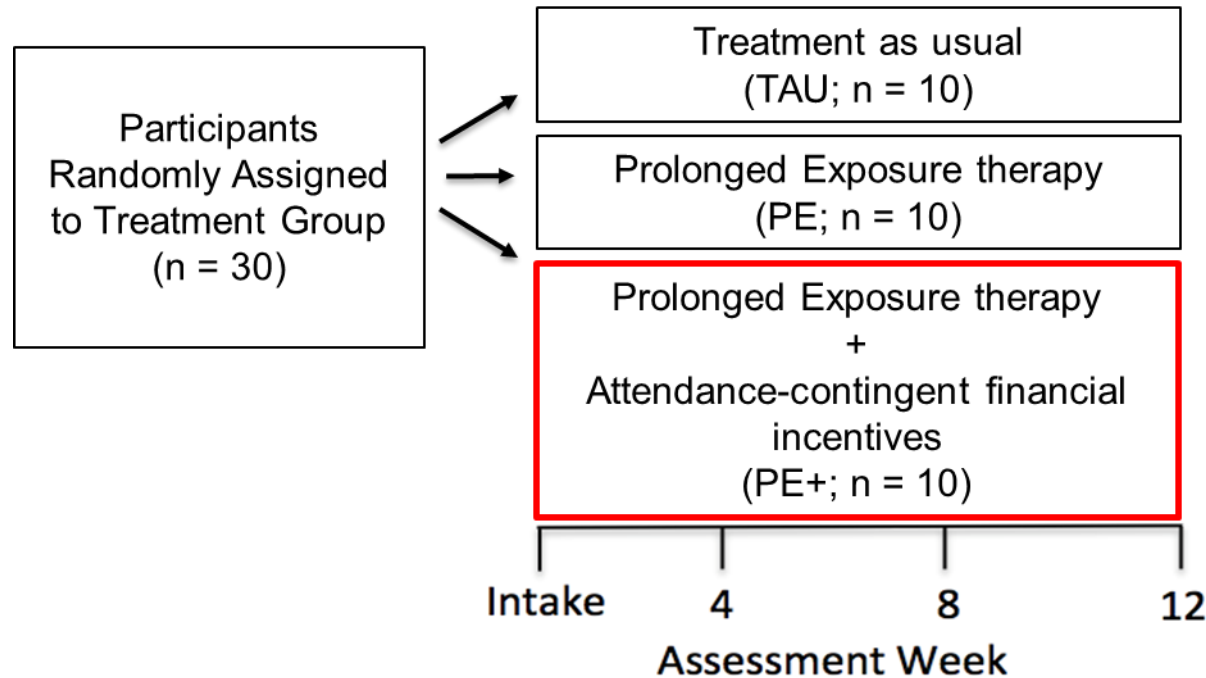


- PE:

- Continue to receive buprenorphine or methadone from current provider
- Complete assessments at Study Weeks 4, 8, and 12
- Twelve 60-minute individual sessions of PE with trained study therapist (in-person or via telemedicine)

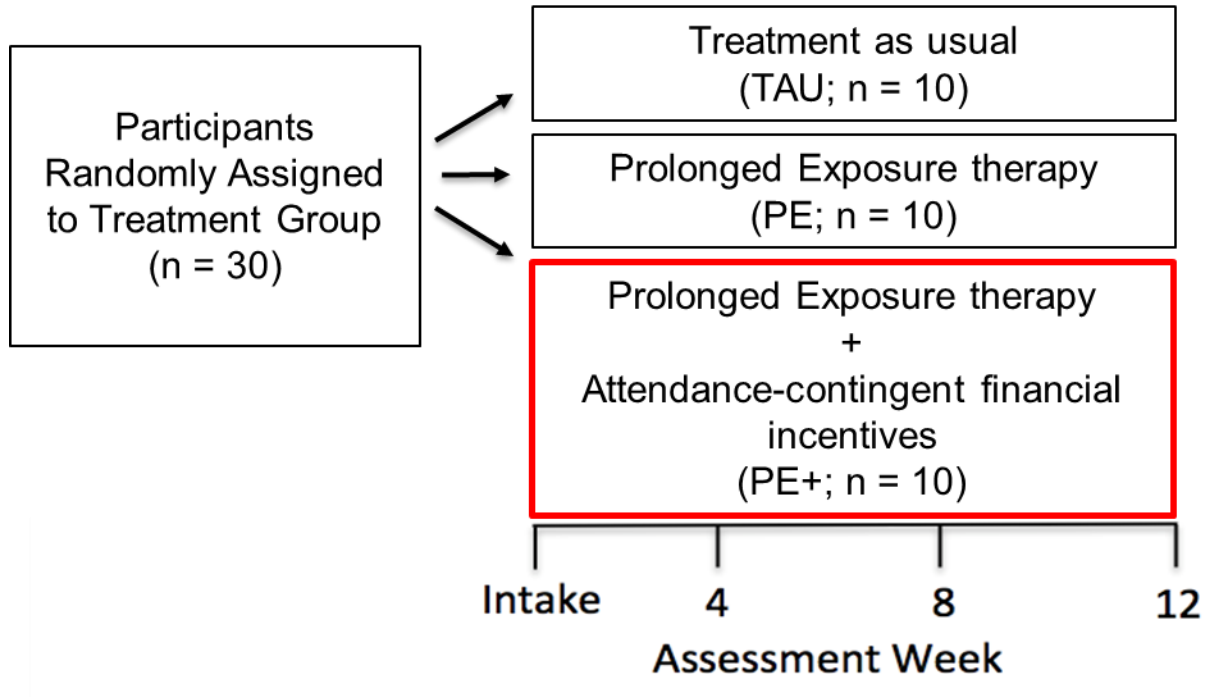
Overview of Randomized Pilot Trial

- Participants were randomly assigned to one of three experimental conditions:



- PE+:
 - Continue to receive buprenorphine or methadone from current provider
 - Complete assessments at Study Weeks 4, 8, and 12
 - Twelve 60-minute individual sessions of PE with trained study therapist (in-person or via telemedicine)
 - Financial incentives contingent on completion of PE sessions

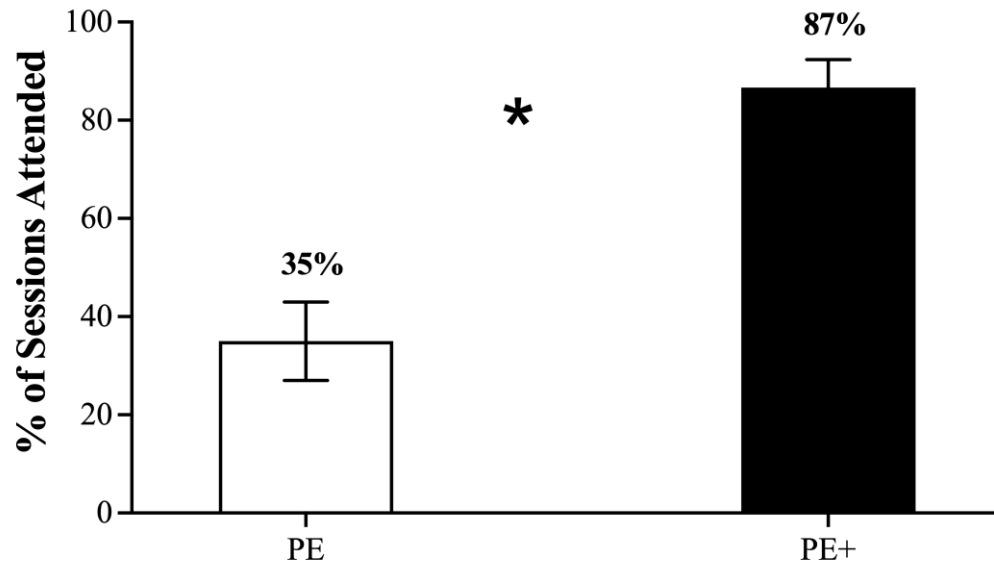
Overview of Randomized Pilot Trial



PE+ Incentive Program		
Session	Incentive	Bonus
1	\$20	
2	\$25	\$50
3	\$30	
4	\$35	\$50
5	\$40	
6	\$45	\$50
7	\$50	
8	\$55	\$50
9	\$60	
10	\$65	\$50
11	\$70	
12	\$75	\$100
Total earnings	\$570	\$350
Maximum possible total earnings: \$920		

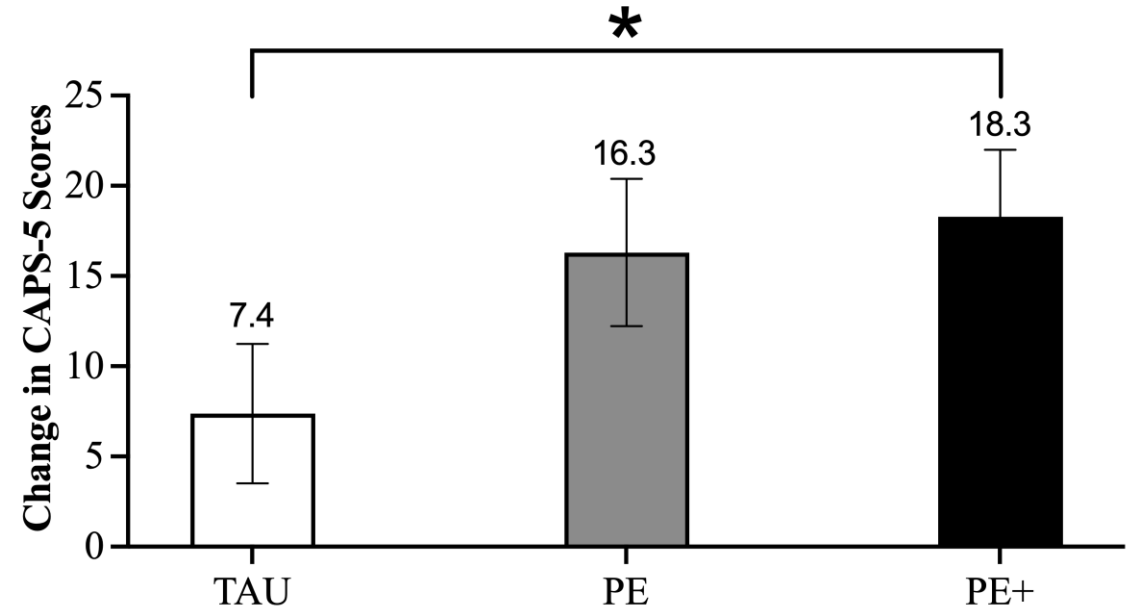
Overview of Randomized Pilot Trial

PE Sessions Attended



- Participants randomized to PE+ **attended significantly more therapy sessions** compared to the PE condition (87% vs. 35%)
- PE+ participants attended **10.4+2.3** of the 12 possible sessions compared to **4.2+3.2** for PE participants

Change in PTSD Symptoms



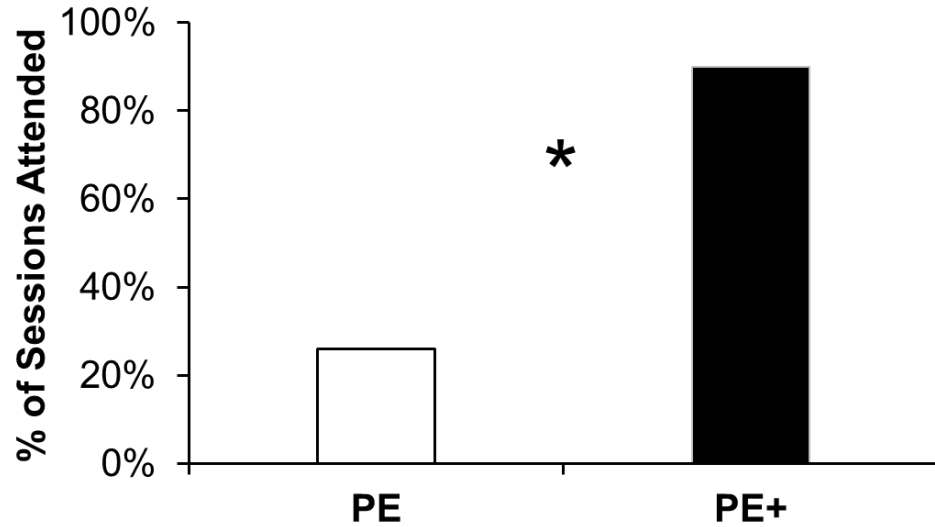
- Participants in **both PE conditions** reported significant reductions in PTSD symptoms between Intake and Week 12, whereas the TAU condition did not
- Improvements in PTSD symptoms were greater for those who received PE+ vs. TAU

Leveraging telemedicine to address rurality and other barriers to engagement

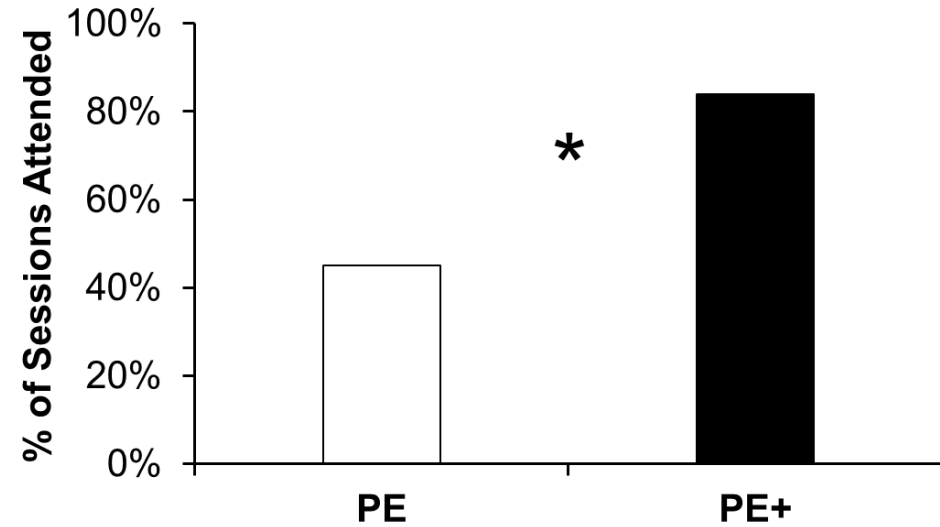
- Participants could complete therapy sessions either in-person or via telemedicine
- Many individuals with OUD have difficulty accessing mental health treatment
- Logistical barriers to mental health treatment are common in rural settings
 - Poverty
 - Mental health stigma
 - Unreliable transportation
 - Mental health workforce shortages
- Telemedicine can be used to provide convenient and timely access to health care services and surmount barriers to treatment access in rural areas
- Telemedicine has been quickly adopted following COVID-19 pandemic

Overview of Randomized Pilot Trial

In-Person Sessions Completed



Telemedicine Sessions Completed



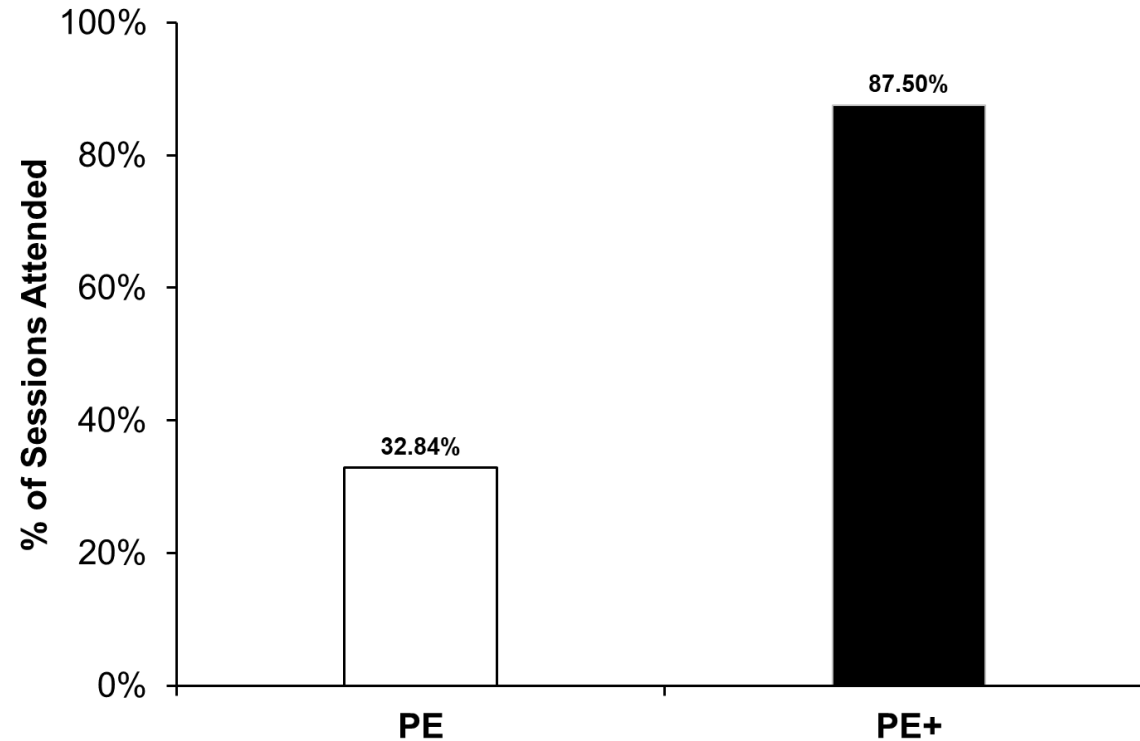
Overview of Randomized Pilot Trial

- Following randomization, urine samples submitted by PE (0%) & PE+ (0%) participants were significantly less likely than TAU (22%) participants to test positive for non-prescribed opioids ($p=.007$)
- The trend was similar for other substances (i.e., cocaine, benzodiazepines, amphetamines) with 44% of TAU, 24% of PE, and 15% of PE+ participants submitting samples that were positive for one or more of these substances.

Recently Completed Randomized Trial

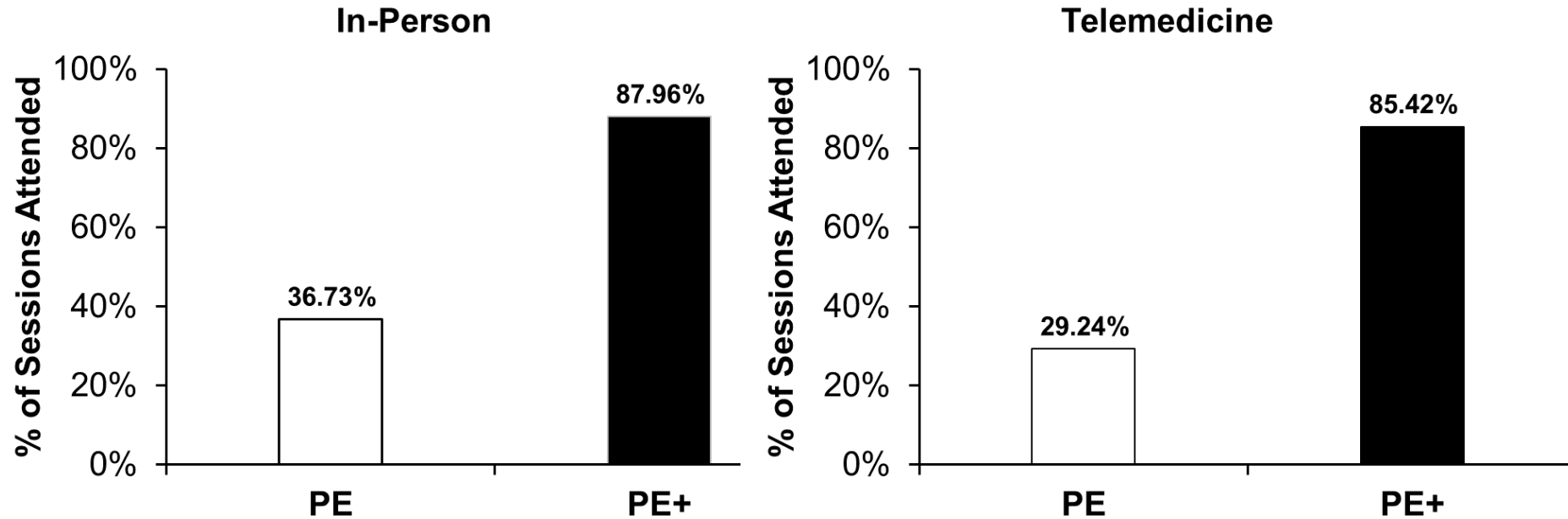
- Promising preliminary findings from this initial randomized pilot trial suggested the feasibility of our novel PE+ treatment protocol for improving PE session attendance and PTSD symptoms among individuals with co-occurring OUD and PTSD without undermining patients' stability with non-prescribed drug use.
- Accordingly, we recently completed a larger-scale (n=52) randomized trial to:
 - Evaluate the initial efficacy of PE+ versus PE and TAU, respectively
 - Continue to evaluate the feasibility of PE delivered in-person versus telemedicine

Recently Completed Randomized Trial



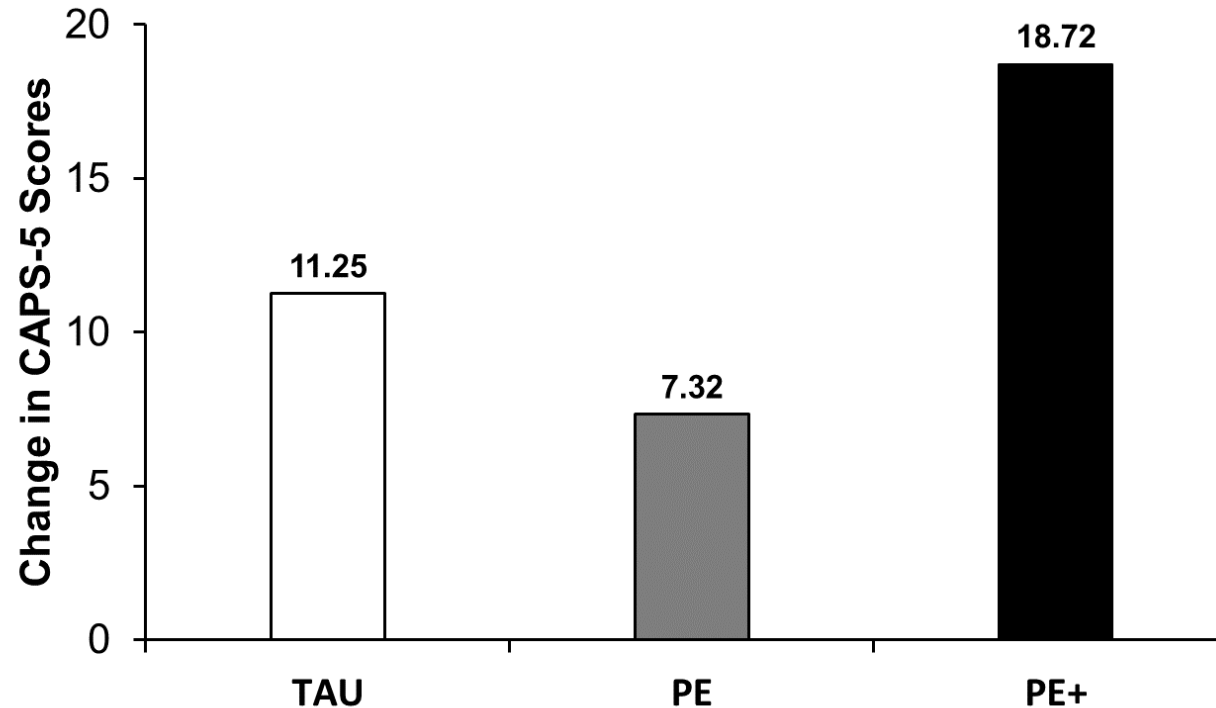
- Replicated study from first study showing that participants randomized to PE+ **attended more therapy sessions** compared to the PE condition (88% vs. 33%)

Recently Completed Randomized Trial



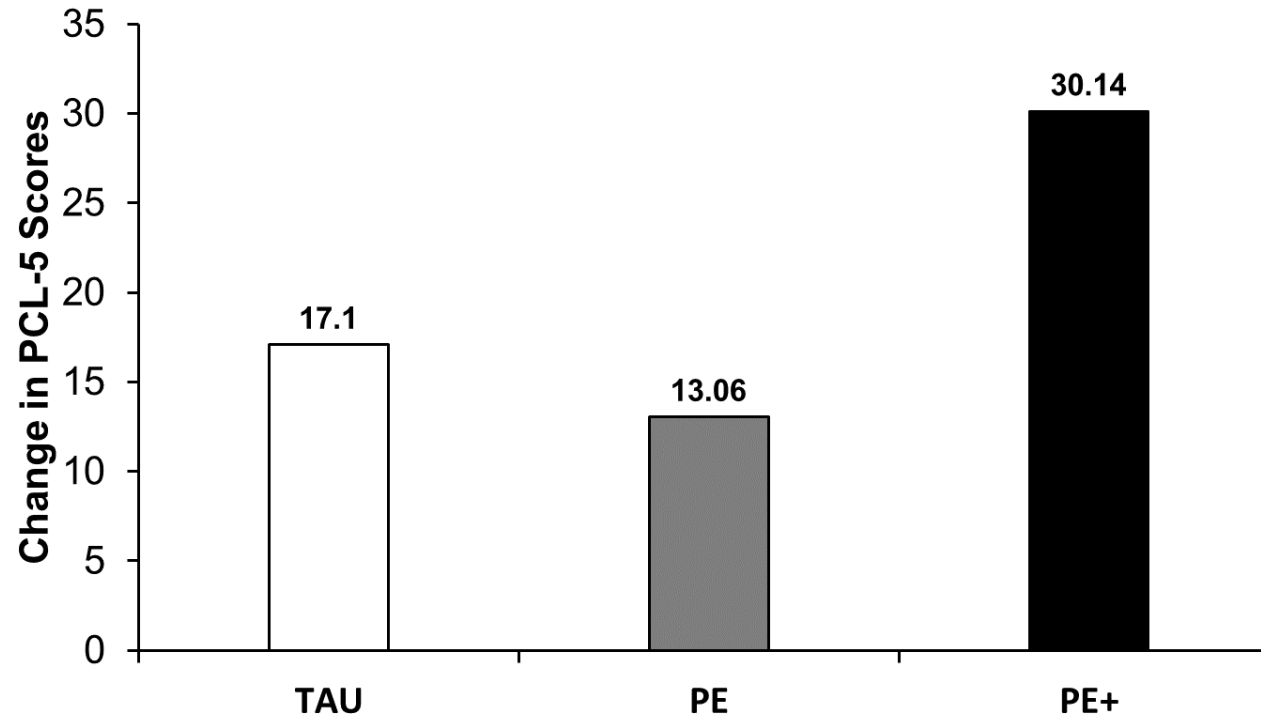
- Similar to prior study, PE+ participants were more likely than PE participants to attend therapy sessions regardless of modality.

Recently Completed Randomized Trial



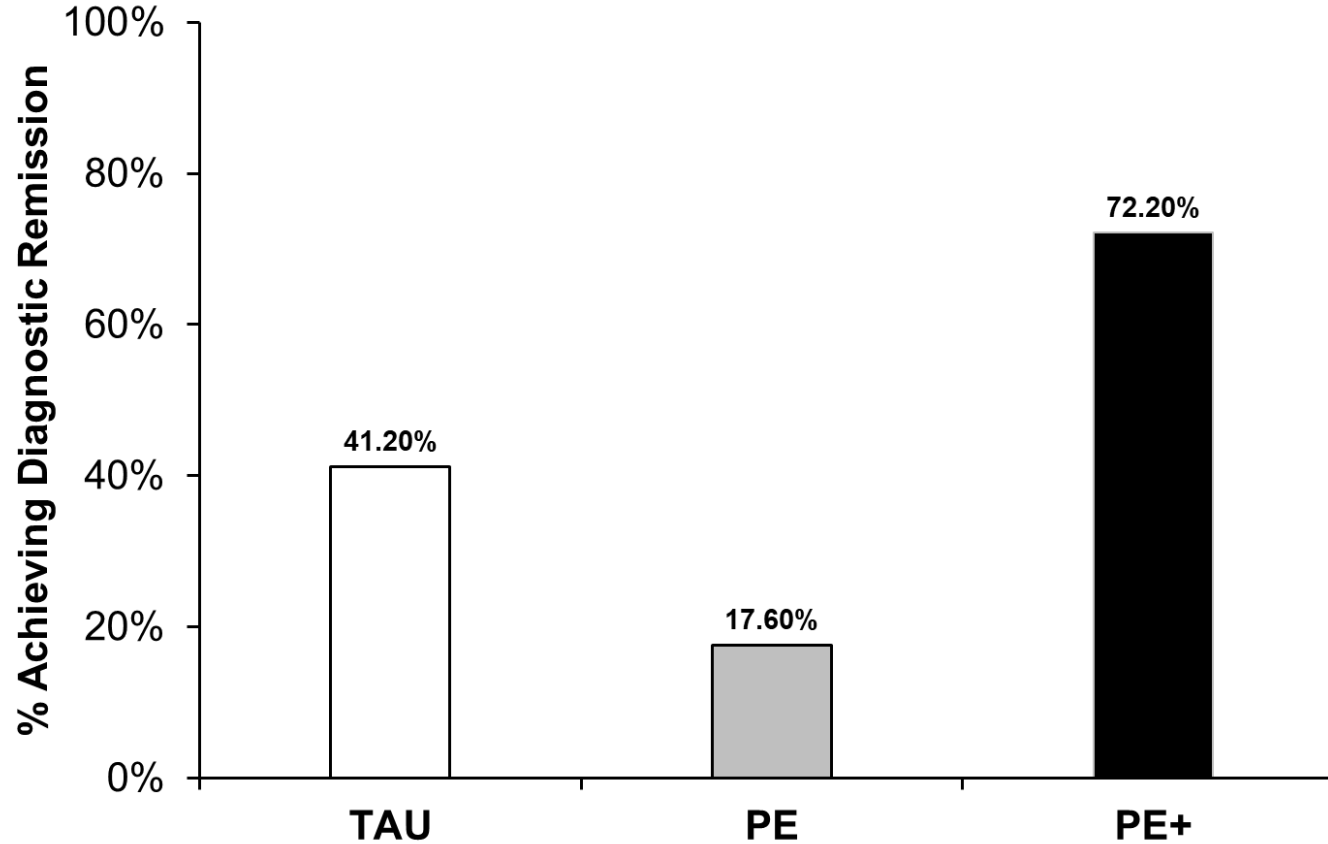
- PE+ participants achieved approximately 2x greater improvements in clinician-assessed PTSD symptoms compared to PE and TAU participants.

Recently Completed Randomized Trial



- PE+ participants achieved approximately 2x greater improvements in self-reported PTSD symptoms compared to PE and TAU participants.

Recently Completed Randomized Trial



- A larger percentage of PE+ participants achieved diagnostic remission at the end of treatment compared to participants in the PE and TAU groups.

Ongoing Work

Larger trial beginning early next year

- Larger proposed sample (N = 135)
- Conducted exclusively via telemedicine and will be the first to examine telemedicine-delivered PE for individuals with SUD
- Recruiting nationally

UVM CORA

- Over the next five years, we will develop a repository and accompanying workshop to promote awareness and understanding of evidence-based assessment and treatment for co-occurring trauma/PTSD among rural patients with OUD

Summary and Conclusions

- Trauma and PTSD are highly prevalent among individuals with OUD
- The co-occurrence of PTSD and OUD is associated with worse outcomes than either condition alone
- Individuals with concurrent PTSD and OUD who live in rural areas may be particularly vulnerable due to barriers to mental health treatment access
- Prolonged exposure therapy is efficacious for improving PTSD symptoms in individuals with co-occurring PTSD and OUD
- The use of telemedicine and other novel strategies (e.g., incentives) may increase access to treatment for rural and other underserved populations

Acknowledgements

Funding Sources

- NIH/NIGMS P20GM103644
- HRSA UD933633
- NIH/NIDA R01DA057308

PET Study Team

- Zoe Brier, B.S.
- Rebecca Cole, B.A.
- Jillian Giannini, B.S.
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- Phyu “Pannu” Khin,
- Letizia Mosca, B.S.
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Three Rural Centers of Excellence (RCOEs)



**Center on
Rural Addiction**
UNIVERSITY OF VERMONT

University of Vermont

- Expanding evidence-based treatment and harm reduction for OUD and other SUDs via education, technical assistance, and resources
- Patient focused approaches serving the needs of rural populations through innovative technology and telehealth strategies
- VT, NH, ME, Northern NY

Find us at:

www.uvmcora.org
or cora@uvm.edu



**UR
MEDICINE**
Recovery Center of Excellence

University of Rochester

- Reduce morbidity and mortality related to SUD
- Working to engage communities/ reduce stigma, save lives, and support primary care
- Serving any rural community in the U.S.

Find us at:

recoverycenterofexcellence.org



Fletcher Group

- Expansion of Recovery Housing Capacity & Quality
- Rural Recovery Ecosystem Support Services: Employment, Housing, Transportation
- Evidenced-Based Education & Training
- Working Across Rural U.S.

Find us at:

www.fletchergroup.org



Thank you!
Questions?

Email us at cora@uvm.edu