AMERICAN PSYCHOLOGICAL ASSOCIATION

2014 ANNUAL CONVENTION

August 7–10 2014 ★ Washington, DC

Gender differences in acceptability and treatment outcomes of a web-based psychosocial intervention for substance use disorders

Aimee Campbell, PhD
New York State Psychiatric Institute
Columbia University Department of Psychiatry

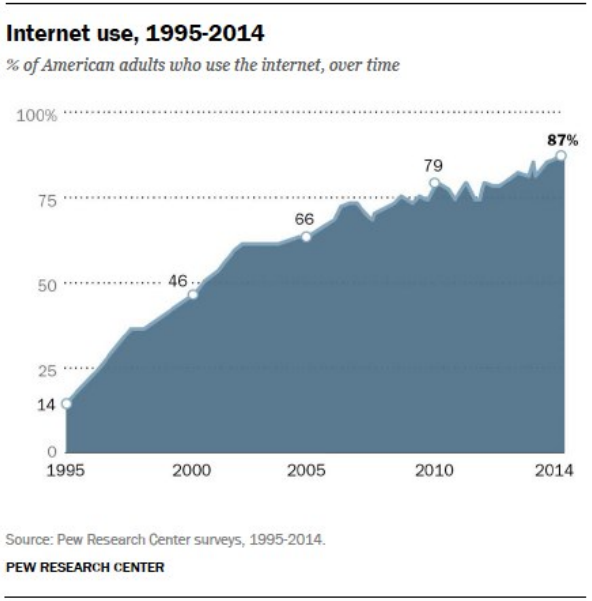
Disclosures

- The presenter has no financial conflicts of interest to declare.
- Parts of this presentation were presented as a poster at the College on Problems of Drug Dependence (CPDD) annual meeting, June 2014.

Promise of Technology for Behavioral Health

- Substance abuse issues are common
- Approximately 10% of those in need receive services
- Increase in service delivery demand
  - Mental Health Parity (2008)
  - Patient Protection and Affordable Care Act (2010)

Technology as a critical component to promote:
access
cost efficiencies
effectiveness of care



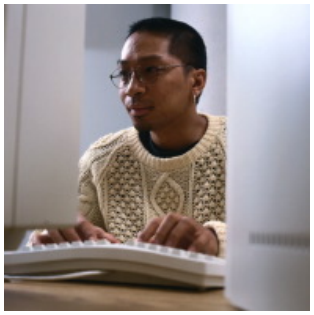
Technology to Address Traditional Barriers

- Enables widespread reach of evidence-based practices
  - On demand access (e.g., geography, time, setting)
  - Extension of care/increase service capacity
- Improves standardization and quality
  - Consistent intervention delivery
  - Reduces cost, limits resource outlay
- Helps reduce stigma and barriers (disparities) in accessing recovery services
- Fosters engagement to enable individuals (and support networks) to lead in their own care management
- Enhances collaboration, communication, coordination, and continuity of care

Limited Research Examining Gender Differences

- Women more likely to utilize various online alcohol treatment tools and engage in electronic-based supplemental tools compared to men (VanDeMark et al., 2010; White et al., 2010)
- Mixed results for gender-specific tech interventions (Ondersma et al., 2007; 2012; Finfgeld-Connett & Madsen, 2008)
- Meta-analysis of brief computer interventions for alcohol showed gender moderated treatment outcome – less successful with larger proportions of women compared to controls (Carey et al., 2012)

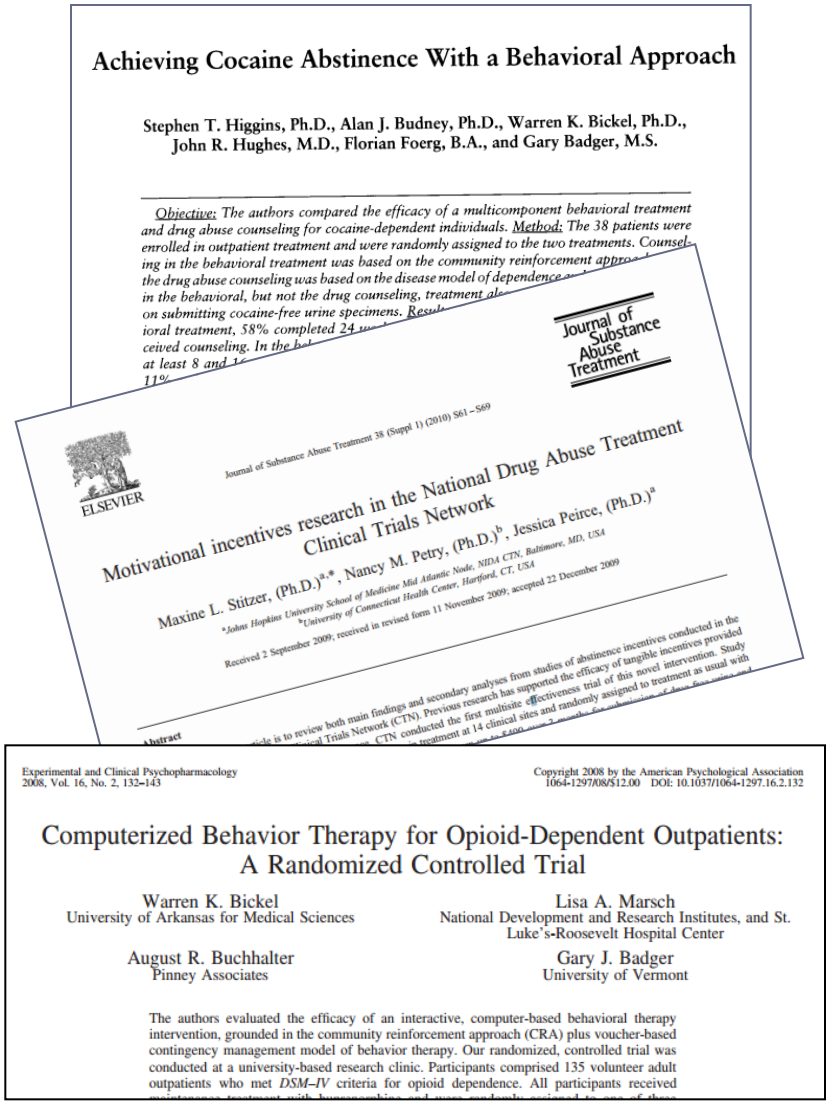
WEB-TX Study Objective



To evaluate the **effectiveness** of including an interactive, web-based version of the Community Reinforcement Approach (CRA) plus incentives targeting drug abstinence and treatment participation as part of community-based, outpatient substance abuse treatment

Funding Support: NIDA CTN U10 DA13035

Therapeutic Education System



Achieving Cocaine Abstinence With a Behavioral Approach

Stephen T. Higgins, Ph.D., Alan J. Budney, Ph.D., Warren K. Bickel, Ph.D., John R. Hughes, M.D., Florian Foerg, B.A., and Gary Badger, M.S.

Journal of Substance Abuse Treatment

Motivational incentives research in the National Drug Abuse Treatment Clinical Trials Network

Maxine L. Stitzer, (Ph.D.), Nancy M. Petry, (Ph.D.), Jessica Peirce, (Ph.D.)

Computerized Behavior Therapy for Opioid-Dependent Outpatients: A Randomized Controlled Trial

Warren K. Bickel, Lisa A. Marsch, August R. Buchhalter, Gary J. Badger

- Community Reinforcement Approach

  Budney & Higgins, 1998; Hunt & Azrin, 1973; Smith, Meyers, & Miller, 2001

- Contingency Management

  Kellogg et al., 2005; Petry & Bohn, 2003; Stitzer et al., 2010

- TES comparable to clinician-delivered CRA and enhances outcomes

  Bickel et al., 2008; Chaple et al., 2013; Christensen et al., under review; Marsch et al., 2014

Lead Study Team

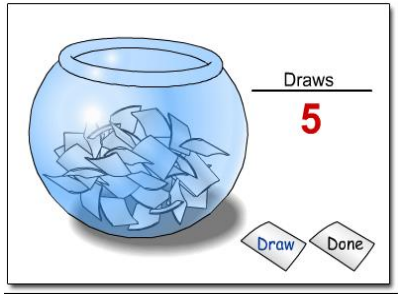
Ned Nunes, MD	Lead Investigator
Aimee Campbell, PhD	Co-investigator | Project Director
Dan Polsky, PhD	Lead Economic Investigator
Gloria Miele, PhD	Training Director
Eva Turrigiano, MS	Project Coordinator
Jennifer Lima, MPH	Node Coordinator
Lisa Marsch, PhD	Scientific Consultant
Maxine Stitzer, PhD	Scientific Consultant
Abigail Matthews, PhD	Lead Statistician (EMMES)
Udi Ghitza, PhD	Clinical Protocol Coordinator (CCTN)
Carol Cushing, RN	Project Officer: DSC2 (CCTN)
Steve Sparenborg, PhD	DSMB Liaison (CCTN)

Funding Support: NIDA CTN U10 DA13035

Participating Community Treatment Programs

CTN Node	Treatment Program Name (Location)
Greater NY	Project Outreach (W. Hempstead)
Florida	The Center for Drug Free Living (Orlando)
Mid-Atlantic	HARBEL Prevention & Recovery (Baltimore)
New England	MCCA (Danbury)
New England	Stanley St Treatment & Resources (Fall River)
Ohio Valley	Midtown Community (Indianapolis)
Western States	Willamette Family (Eugene)
Pacific	Hina Mauka (Oahu)
Pacific NW	Evergreen Manor (Everett)
Texas	Homeward Bound (Dallas)

Design



- 2-arm randomized, controlled, multi-site trial (N=500)
  - (1) Treatment as Usual (TAU)
  - (2) Modified TAU + Therapeutic Education System (TES)
- Approx 2 hours/week of TES *substituted* for comparable amount of face-to-face counseling over 12 weeks
  - 62 modules with audio; self-directed; interactive; fluency-based, precision learning
  - Intermittent schedule, prize-based incentives for module completion and drug/alcohol abstinence
- Included brief clinician check in with TES participants to coincide with standard individual sessions

Inclusion Criteria

- ≥18 years
- **Self report substance use problem (alcohol or drugs)**
- **Illicit drug use within the past 30 days**
- **Enrolled at the program and for < 30 days**
- Self-report planned treatment episode ≥ 90 days

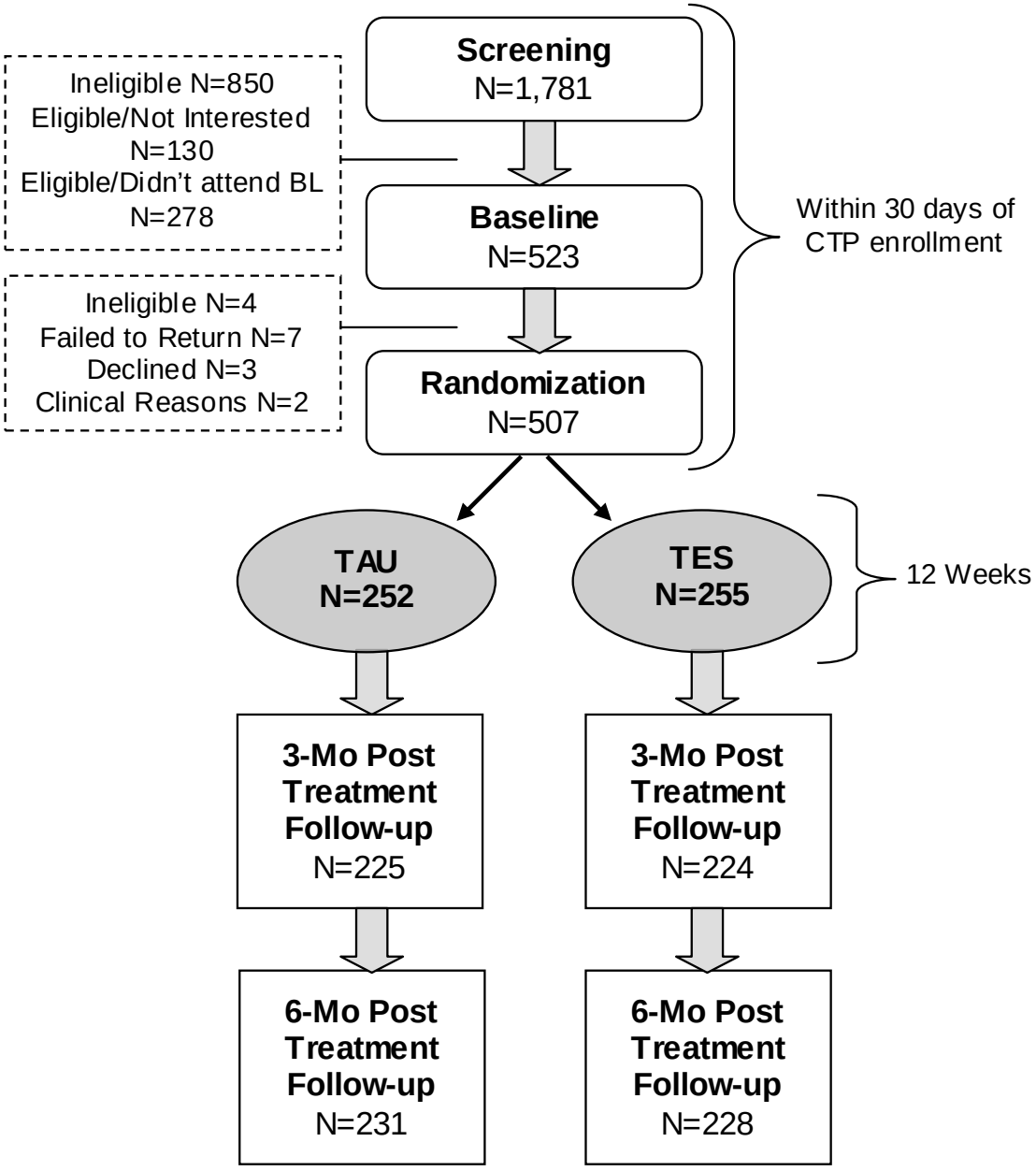
Exclusion Criteria

- **Prescribed opioid replacement pharmacotherapy**
- Plan to move out of the area in the next 90 days
- Insufficient ability to provide informed consent
- Insufficient ability to use English to participate in the consent process, intervention and research assessments

Measures

Abstinence	Illicit drugs (urine screen) and heavy drinking days (NIAAA guidelines; self-report TLFB), last 4 weeks of treatment
Treatment Retention	Time to drop out from treatment program
Social Adjustment Scale (Weissman, 1999)	6 role domains (e.g., work, social, family); lower scores equal higher adjustment
Craving	Days in past week with urge, desire or craving for drugs/alcohol (0, 1-3, 4-7)
Acceptability	Utility and satisfaction with TES, 5 indicators (0-10): useful, new information, understandable, interesting, satisfaction

Participant Flow

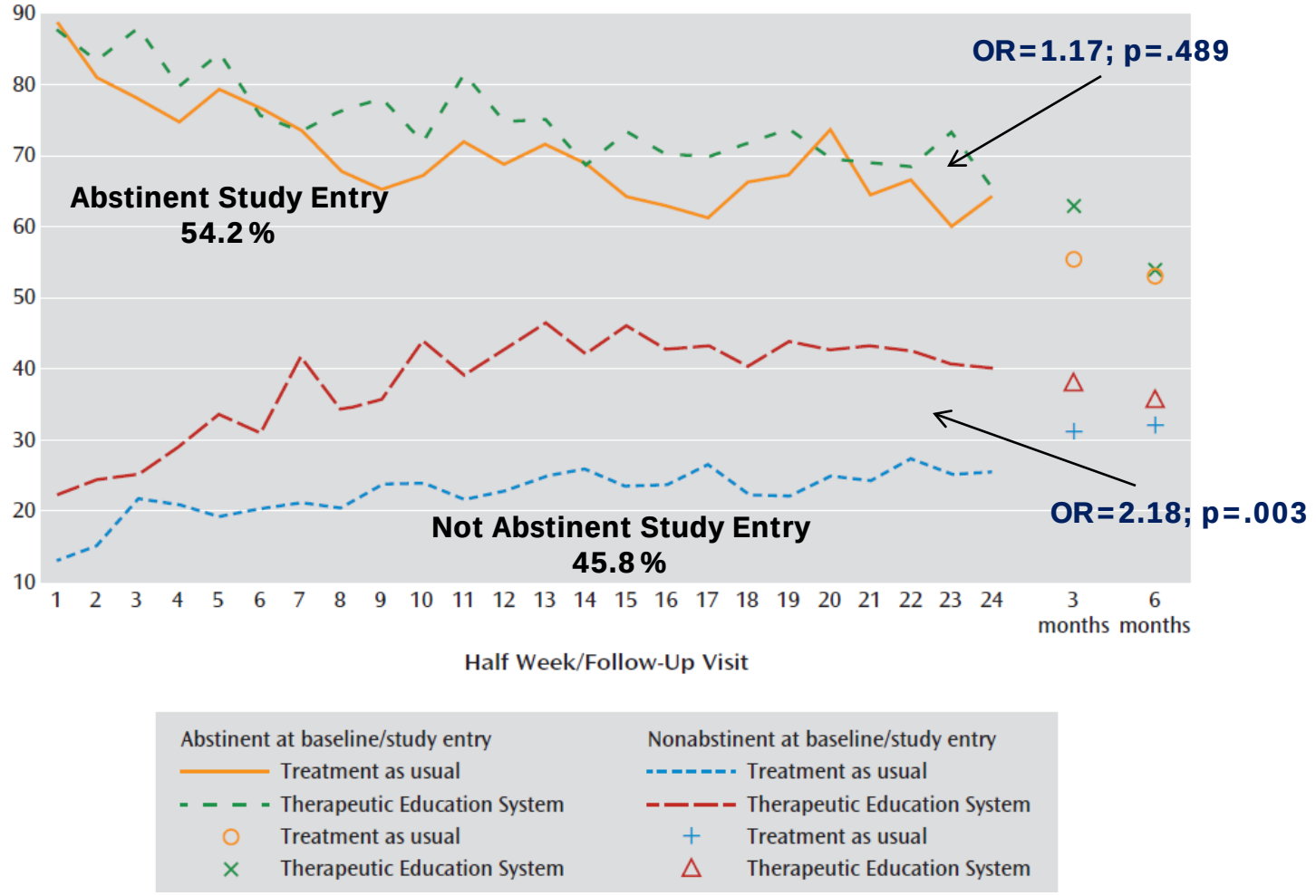


Sample Characteristics

- Age
  - Mean=34.9 (SD=10.9)
- Sex
  - 37.9% Female
- Race
  - 56.0% White
  - 22.9% Black/African American
  - 20.8% Multi-racial/Other
- Ethnicity
  - 10.8% Hispanic/Latino
- Education
  - 23.3% < HS
  - 61.1% = HS
  - 15.6% > HS
- Primary Substance
  - 22.5% marijuana
  - 21.3% opioids
  - 20.5% alcohol
  - 20.1% cocaine
  - 13.6% stimulants
  - 2.0% other
- Unemployed ($p<.01$)
  - 70.8% women
  - 51.6% men

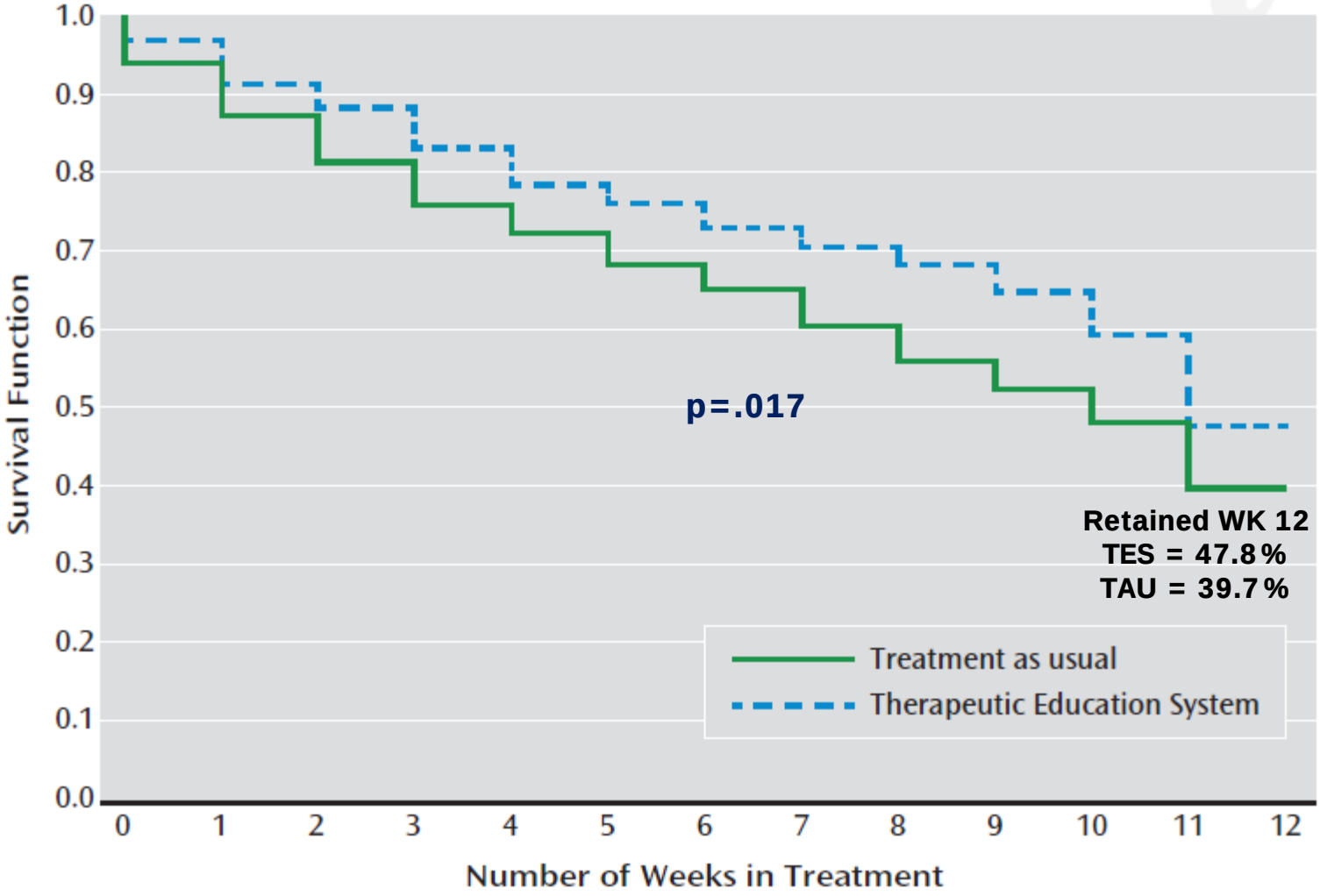
Primary Outcomes

Observed Proportion Abstinent by TX Half-week and at Follow-up, by Abstinence at Study Entry and TX Arm



Campbell ANC, Nunes EV, et al. (2014). *American Journal of Psychiatry*.

Kaplan-Meier Plots of Primary Retention Outcome by TX Arm



Campbell ANC, Nunes EV, et al. (2014). *American Journal of Psychiatry*.

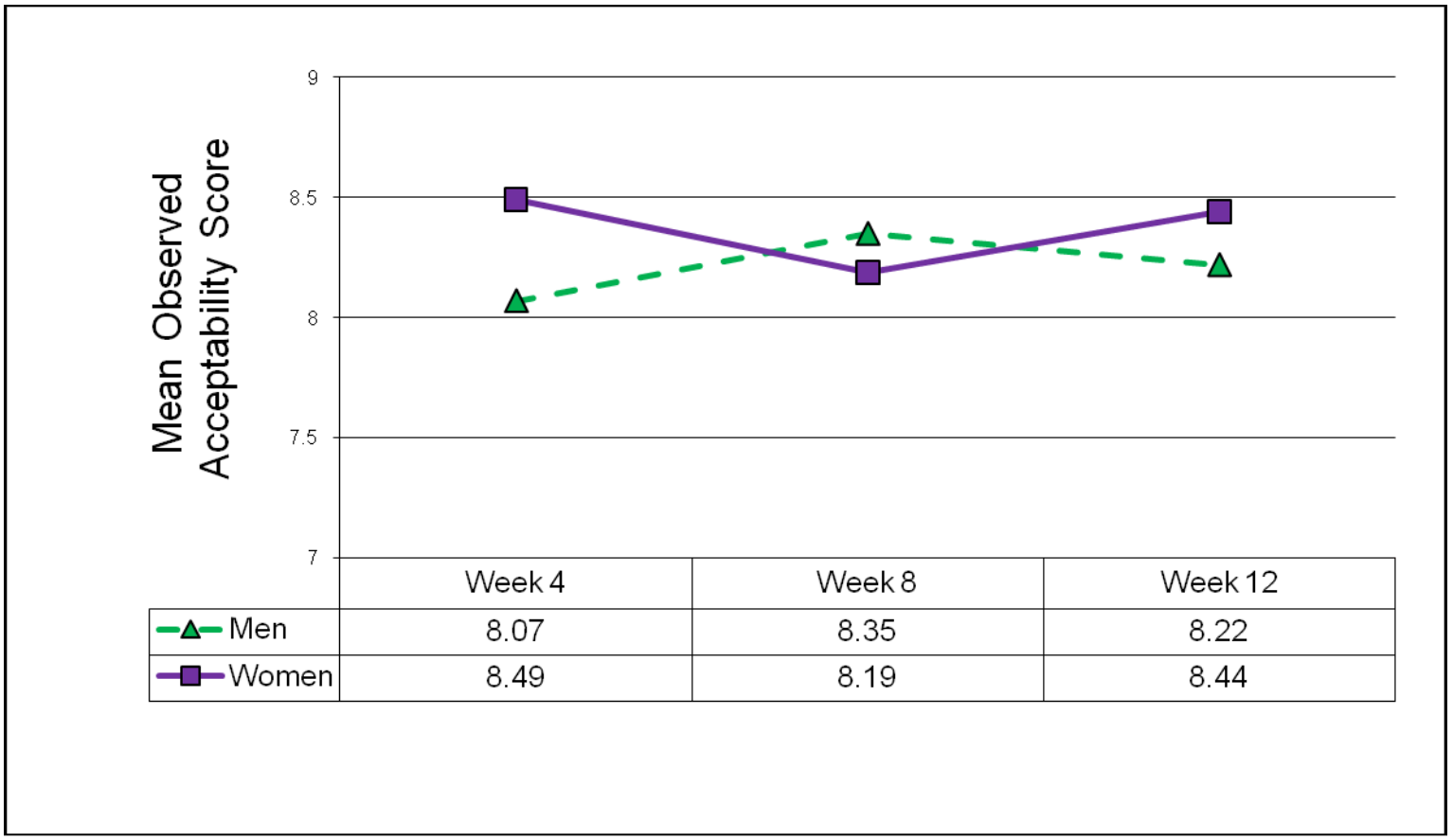
Gender & Acceptability

Generalized Linear Mixed Effect Final Models (gender, treatment, abstinence study entry, age)

Model A: Abstinence (final 4 weeks; n=468)	t-value
Treatment (TAU) x Abstinence Study Entry	-1.81†
Model B: Proportion Retained (week 12; n=506)	
Treatment (TAU)	-1.71†
Gender (men)	1.77†
Abstinent Study Entry	2.62**
Model C: Social Adjustment Total Score (n=447)	
Gender (men)	-2.87**
Age	1.88†
Baseline Social Adjustment	11.38**
Model D: Craving (n=447)	
Treatment (TAU)	2.68**
Baseline Craving	7.14**
Treatment (TAU) x Abstinence Study Entry	-2.65**

† p<.10, * p<.05, ** p<.01; only significant results displayed

Mean Observed Acceptability Scores by Gender at Weeks 4, 8, and 12 (0-10 point scale)



	Week 4	Week 8	Week 12
Men	8.07	8.35	8.22
Women	8.49	8.19	8.44

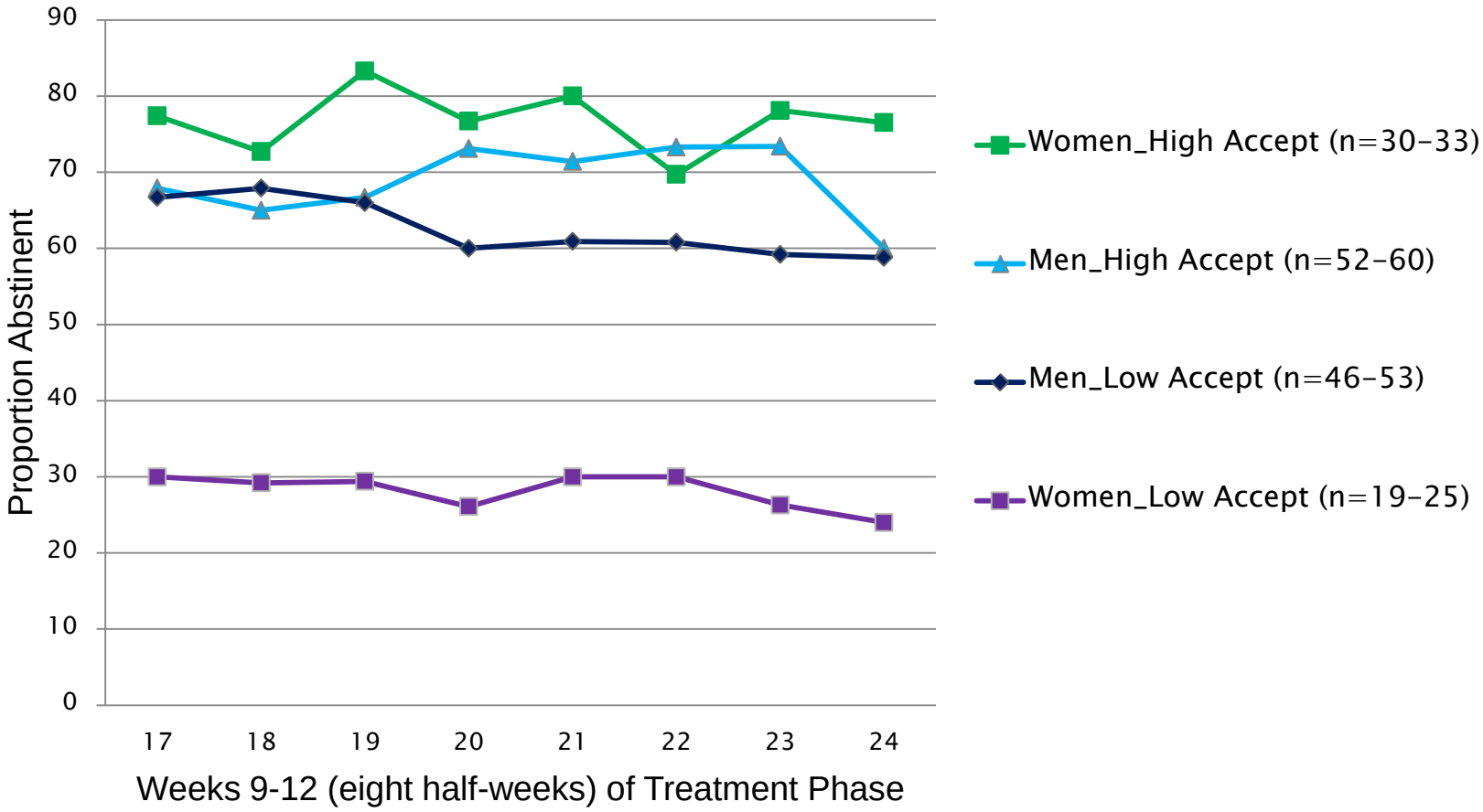
Generalized Linear Mixed Effect Final Models Among TES Participants

(gender, acceptability, abstinence study entry, age)

Model A: Abstinence (final 4 weeks; n=191)	t-value
Gender (men)	3.02**
Abstinent Study Entry	2.61**
Acceptability	3.77**
Gender (men) x Acceptability	-2.90**
Model B: Proportion Retained (week 12; n=193)	
Acceptability	1.69†

† p<.10, * p<.05, ** p<.01; only significant results displayed

Observed Proportion Abstinent by Gender and Median Level TES Acceptability (≥8.4=high)



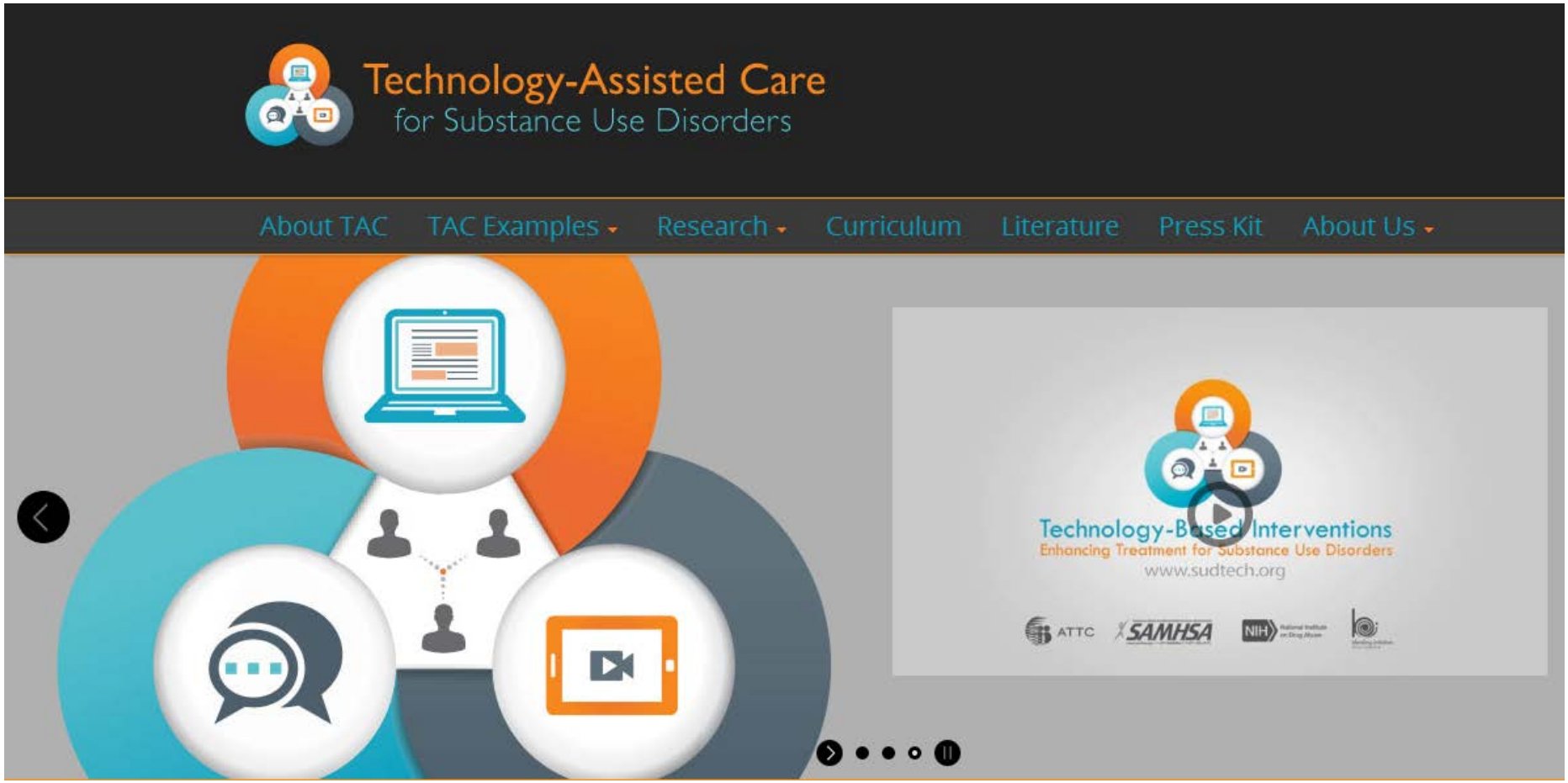
Implications

- Gender did not significantly moderate treatment outcomes
  - TES designed to be gender balanced, and as such its effectiveness is generally equivalent in this large, diverse sample
- Among women, those screening positive for drugs/alcohol at study entry had lower TES acceptability at the end of treatment
  - Prior research suggests women with substance use disorders may experience unique vulnerabilities that influence treatment trajectories; may increase need or desirability for interpersonal treatment modalities
  - This may be more pronounced in women who are actively abusing drugs and alcohol

Limitations

- Although a pre-specified secondary analysis, the current study was not powered to detect treatment by gender interactions
- Questions assessing acceptability did not differentiate between intervention content and computer delivery
- Participants self-identified as male or female, but information on gender identity was not collected
- TES was tested as a package intervention (CRA + CM); study was not designed to evaluate the two components separately

SAMHSA/NIDA Technology Blending Product



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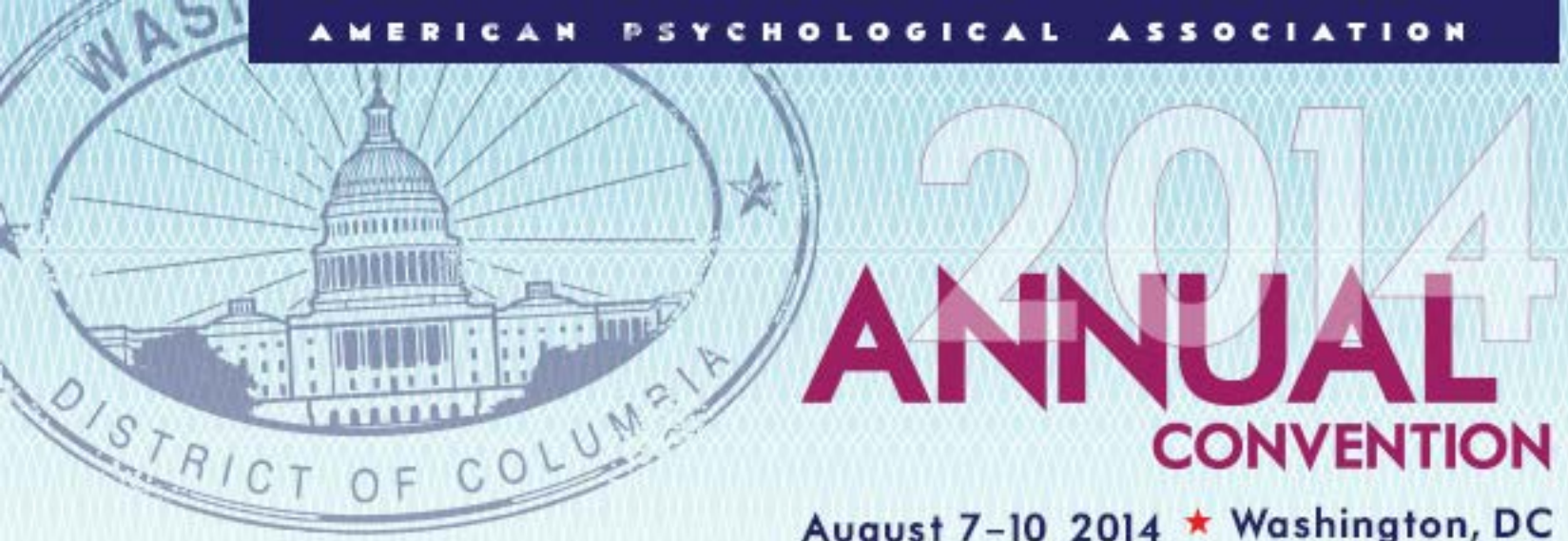
Acknowledgments

- The 507 participants that contributed their time and effort to make this study possible
- Research and clinical staff at the 10 treatment sites
- Statisticians, data managers, and safety monitors at EMMES Corporation
- Manuscript Co-authors: EV Nunes, M Pavlicova, M Hatch-Maillette, M Hu, GL Bailey, DE Sugarman, GM Miele, T Rieckmann, K Shores-Wilson, E Turrigiano, SF Greenfield,
- Funding from National Drug Abuse Treatment Clinical Trials Network (NIDA): U10 DA013035 (Nunes, Rotrosen), U10 DA015831 (Carroll, Weiss), U10 DA013034 (Stitzer, Schwartz), U10 DA013720 (Szapocznik, Metsch), U10 DA013732 (Winhusen), U10 DA020024 (Trivedi), U10 DA013714 (Donovan, Roll), U10 DA015815 (Sorensen, McCarty), U10 DA013045 (Ling)



Contact Information:

Aimee Campbell, PhD

anc2002@columbia.edu