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Web-based, Psychosocial Treatment for Substance Use Disorders in Community Treatment Settings

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Keywords

Web-delivery; Computer-assisted Technology; Community Reinforcement Approach (CRA); Motivational Incentives; Substance Use Disorders

Name of Institution

This study is part of the National Drug Abuse Treatment Clinical Trials Network (CTN). Nine CTN research centers support 10 substance abuse treatment programs. Lead investigators are with the New York State Psychiatric Institute at Columbia University.

Services Delivered

The study evaluates the effectiveness of using the Therapeutic Education System (*TES*; Bickel, Marsch, Buchhalter, & Badger, 2008), an efficacious, web-based version of the Community Reinforcement Approach (Budney & Higgins, 1998), plus motivational incentives (Stitzer, Petry, & Peirce, 2010), in outpatient settings. Participants ($N=500$) are randomly assigned to 12 weeks of (1) treatment-as-usual (TAU; standard care of at least 2 onsite sessions per week for 12 weeks) or (2) TAU+*TES* (TAU with 2 treatment hours per week replaced by *TES*). Program staff determine components of TAU replaced by *TES*; typically psychoeducation or relapse prevention groups. Hypotheses are that, compared to TAU, TAU+*TES* will promote significantly greater (1) drug and heavy alcohol use abstinence (biologically confirmed self-report assessed by Timeline Follow Back [Sobell & Sobell, 1996]) and (2) treatment retention (days to last face-to-face contact via program

clinical records). Substance use data are collected twice weekly during the intervention, with comprehensive assessments at weeks 4, 8, and 12, and 3- and 6-months post intervention.

TES consists of 62 modules and motivational incentive management. Thirty-two core modules focus on basic cognitive behavioral, relapse prevention, and HIV prevention skills and are completed during intervention weeks 1–8. Thereafter, 30 optional modules (e.g., coping with anger, nonverbal communication) become available, allowing participants to select content most relevant to treatment goals. The back-end system tracks participant activity, including *TES* exposure. Research staff facilitates participant use of *TES* and verifies biological data used for incentives. Using an intermittent reinforcement approach, participants earn chances to draw for prizes based on maintaining abstinence and completing modules (up to 4 per week). Participants can earn a message reading “good job,” small (\$1; e.g., toiletries), large (\$20; e.g., coffee maker), or jumbo (\$100; e.g., iPod, gift card) prizes with decreasing probability. Participants access *TES* using onsite study computers or an offsite computer of their choice.

Types of Professional Involved

All research-related activities are administered by trained research staff under the supervision of clinical and scientific investigators. Program clinicians (e.g., credentialed chemical dependency counselors, licensed social workers, or counselors) check in with participant clients regarding their *TES* experience during individual TAU sessions.

Training for Telemental Services of Professional Involved

All staff completed human subjects’ certification and a 90-minute pre-study *TES* training and had access to *TES* modules and materials. Research staff received additional training on *TES* administrative procedures.

Population Served

Participants are men and women (18 or older) in the first 30 days of treatment who report drug use in the past 30 days. Exclusions are prescribed opioid replacement medication, plans to move out of the area, or insufficient English literacy for study activities. Based on data collected pre-study from the participating treatment programs, it is projected that about 35% of participants will be female and 40% will identify as a racial/ethnic minority.

Geographic Location Served

Study sites are outpatient, psychosocial treatment programs in urban and suburban areas across 10 U.S. states (MA, CT, NY, MD, FL, IN, TX, WA, OR, HI).

Funding Sources

The study is funded by the National Institute on Drug Abuse CTN.

Technology Used

TES is a web-based software application developed by HealthSim, Inc. using Java Enterprise Edition (J2EE) technology deployed on cloud-based Windows servers with database services by Amazon’s MySQL version of the Relational Data Service (RDS). *TES* uses the open source Jetty servlet engine (can also be deployed on the Tomcat servlet engine or JBoss application server). Two HealthSim consultants provide ongoing technology-related support.

Technology Choices that would be Different Next Time and Why

The system developer, HealthSim, is responsible for implementing *TES*; therefore limited technological decisions were required. The system has been stable throughout this effort.

Use of Electronic Medical Records

Not applicable.

Biggest Challenges

Challenges of clinician buy-in and time were addressed at the front-end of the trial. All program clinicians were trained on *TES* and debriefed about concerns. Study procedures were integrated into standard practice whenever possible to limit additional workload (e.g., *TES* supervision occurred during regular staff meetings). Each site determined how reimbursement for TAU replaced by *TES* would be managed and which elements of TAU that could be replaced. Research staff coordinates study visits with TAU schedules. Providers were consulted on primary outcomes most relevant to program outcome metrics and target behaviors.

Biggest Successes

As of June 2011, the study randomized 422 participants; the projected study end date is July 2012. The integration of *TES* and TAU has been successful, with few reported problems. Minimal technological issues have surfaced, either with the sites' information technology capacity or directly related to *TES* functioning. Based on internal data reviewed halfway through study recruitment, participants were about evenly split across five primary substances of abuse (i.e., alcohol, cocaine, cannabis, opiates, and other substance), increasing generalizability of outcomes.

Lessons Learned

Preliminary information from research staff and site-based investigators suggest clinical staff is embracing this new technology, especially when viewed as a potential "clinician extender." *TES* allows a complex intervention to be delivered via computer while clinicians may focus on more complex therapeutic concerns. The study is currently at 92% of target enrollment suggesting client willingness to join a web-based intervention trial.

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