Characteristics of an Outpatient Treatment Sample by Primary Substance of Abuse

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Abstract

Objective—The current study examines sociodemographic and clinical characteristics, as a function of primary substance of abuse, among clients approached, screened, and assessed for eligibility in a 10-site effectiveness trial of a web-based psychosocial intervention for substance use disorders. Consistent with the design of effectiveness trials, eligibility criteria were broad and exclusion criteria minimal; thus, the recruited sample may be viewed as relatively representative of patients seeking treatment throughout the United States.

Methods—Chi-square tests for categorical variables and F-tests for continuous variables were used to analyze demographic, substance use, physical and mental health, and sexual risk data collected at screening and baseline; pairwise comparisons between primary substance subgroups for baseline data were conducted if the test statistic p-value was ≤.01.

Results—Few participants expressed disinterest in the study at screening due to the computer-assisted intervention. A diverse sample of substance users completed baseline and were enrolled: 22.9% marijuana; 21.7% opiates; 20.9% alcohol; 20.5% cocaine; and 13.9% stimulants. Marijuana users demonstrated the greatest differences across primary substances: they were younger, less

likely to be married or attend 12-step meetings, and more likely to be in treatment as a result of criminal justice involvement. All patients, even marijuana users, reported comparable rates of co-occurring mental health disorders and sexual risk, as well as substantial rates of polysubstance use disorders.

Conclusion—Primary substance of abuse may be a less important indicator of overall severity compared to co-occurring disorders and other factors common across treatment seekers, further demonstrating the need for integrated treatment services and care, as well as comprehensive pre-treatment assessment.

Keywords

Substance use disorders; Computer-assisted treatment; Patient characteristics; Effectiveness trial

INTRODUCTION

In 2010, approximately 1.8 million admissions to state-licensed and certified substance abuse treatment facilities were reported in the U.S. (SAMHSA, 2012). Among those admissions (ages 12 and older), the reported primary substance of abuse varied and consisted of: 41% alcohol; 23% opiates (including heroin); 18% marijuana; 8% cocaine; and 6% stimulants (SAMHSA, 2012). Community-based treatment programs are at the core of substance abuse treatment delivery across various substances of abuse, and thus represent an important venue to conduct clinical trials to test the effectiveness of newly developed treatment interventions.

The Clinical Trials Network (CTN) within the National Institute on Drug Abuse provides a research platform to conduct these effectiveness trials; however, if evidence-based treatment dissemination to community clinics is truly the goal, then generalization potential must be high. Through the CTN, a recently completed study, "Web-delivery of Evidence-Based, Psychosocial Treatment for Substance Use Disorders (*WEB-TX*)" evaluated the effectiveness of a computer-assisted, web-delivered version of the Community Reinforcement Approach (Onken et al., 1997) plus contingency management (Higgins et al., 1994; Petry et al., 2005; Peirce et al., 2006; Stitzer et al., 2010), known as the Therapeutic Education System (*TES*; Bickel et al., 2008), to promote abstinence from drugs and alcohol and increase retention in treatment. Ten geographically diverse outpatient treatment programs across 10 U.S. states were recruited to participate. Eligibility criteria were broad and exclusion criteria minimal (Campbell et al., 2012).

Within the context of the *WEB-TX* effectiveness trial, there are several reasons to thoroughly explore the clinical characteristics of the screened and enrolled study sample. First, the resultant sample may be viewed as relatively representative of drug and alcohol dependent patients seeking treatment in the community. These data then provide a snapshot of current outpatient treatment populations, which can shift over time, to inform treatment programming and policy (e.g., Craddock et al., 1997) and contribute to our understanding of treatment seeking populations. Patient characteristics, demographics, co-occurring disorders, and legal problems, may act as prognostic indicators for treatment outcome, addiction severity, psychosocial functioning, or engagement in specific evidence-based treatments.

Second, due to broad eligibility criteria and geographic variability of study sites, *WEB-TX* was able to enroll a range of primary substances of abuse. Of interest in the *WEB-TX* effectiveness trial was the comparison of whether baseline characteristics of participants differed as a function of their primary substance of abuse. Prior multi-site clinical trials, including those conducted in the CTN, often target one primary substance (Nunes et al., 2010), minimizing the ability to detect differences across primary substance subgroups.

Finally, those enrolling in substance abuse treatment may reveal different patient profiles based on their primary substance of abuse in terms of relapse prevention, withdrawal syndromes, acceptability of different modes of treatment, etc. By exploring characteristics of the randomized sample participating in this web-delivered intervention trial, the necessary modifications to maximize engagement and efficacy are more likely (i.e., understanding who is more or less likely to enroll and how to tailor recruitment and intervention methods for specific subgroups).

Computer-assisted treatment interventions for substance abuse disorders are becoming increasingly common (Carroll & Rounsaville, 2010; Moore et al., 2011; Marsch & Dallery, 2012), and can be expected to reach community treatment programs with increasing rapidity in the coming years. Effectiveness trial samples with good generalizability will increase the usefulness of intervention effectiveness estimates. Therefore, the current study examined descriptive and clinical characteristics of (1) clients who completed the screening assessment (both eligible and ineligible); and (2) participants who were enrolled (i.e. randomized) into the main trial as a function of primary substance of abuse.

METHODS

Participants

Ten CTN-affiliated outpatient treatment programs that offered at least two onsite therapeutic sessions per week for a minimum of 12 weeks participated in the *WEB-TX* trial. Participant recruitment occurred over 15 months in 2010-2011. New program clients presenting for treatment were informed of the *WEB-TX* study and referred to onsite research staff for a brief eligibility screening. Inclusion criteria were: (1) 18 years of age or older; (2) self reported substance use problem and illicit substance use in the 30 days prior to baseline (DSM-IV diagnosis of substance abuse or dependence was not required); (3) within the first 30 days of the outpatient treatment episode; and (4) planned treatment episode of three months or more. Individuals were excluded if they were receiving opioid substitution pharmacotherapy (e.g., methadone or buprenorphine). Eligible and interested clients completed a baseline assessment as soon as possible after screening; those that completed baseline were enrolled (i.e., randomized) into the parent study. Data for the current analysis were drawn from the brief screening visit (including both eligible and ineligible participants) and the baseline assessment visit. Informed consent procedures were followed in accordance with the standards of the Institutional Review Board of each participating treatment program. A full description of the study design and methods is discussed elsewhere (Campbell et al., 2012).

Measures

Screening—The brief screening assessed major eligibility criteria, including age, time in treatment, date of last illicit substance use, opioid replacement medication, and planned length of current treatment episode.

Demographics—Sex, age, race/ethnicity, education, marital status, employment, criminal justice status, and frequency of internet use were all assessed at baseline. Education was categorized into less than high school, high school degree/equivalent, and more than high school. Marital status was collapsed into three categories: single or never married, married/ remarried, and divorced, separated, or widowed. Participants were considered employed if they responded in the affirmative to the question "Have you had a job (where you paid for working)" in the 90 days prior to baseline. Participants were asked if their current treatment admission was prompted by the criminal justice system and could respond no, mandated, or referred/recommended; this was dichotomously coded as yes (mandated/referred) or no.

Internet use was assessed for the prior 90 days. Participants were asked if they used the internet and if yes, how often (sometimes, not daily; at least daily).

Substance Use—Participants self-reported primary substance of abuse (i.e., the substance for which they were seeking treatment or considered the most problematic) on the DSM-IV Checklist. This assessment involved a semi-structured interview delivered by research staff, which provided current (last year) abuse and dependence diagnosis for substance use disorders based on DSM-IV diagnostic criteria (Hudziak et al., 1993). Frequency of alcohol and other substance use in the 90 days prior to baseline was assessed using the Timeline Follow-back method (TLFB; Sobell & Sobell, 1992). Urine toxicology tests were also conducted. Nicotine use was assessed using the Fagerström Test of Nicotine Dependence (Heatherton et al., 1991).

Physical and Mental Health—Self-reported physical health was assessed using a visual analogue scale (range=0-100; higher scores equating to better perceived health) from the Euro Quality of Life Scale-EQ5D (EuroQOL Group, 1990). Mental health was assessed using the Patient Health Questionnaire (PHQ; Spitzer et al., 1999) resulting in probable diagnoses across six psychiatric disorders: major depression, attention deficity/hyperactivity disorder (ADHD), posttraumatic stress disorder (PTSD), panic, social anxiety, and generalized disorders. Modules for PTSD, ADHD, and social anxiety were developed by Carlos Blanco, MD, PhD and colleagues at the New York State Psychiatric Institute and include a subset of DSM-IV diagnostic criteria.

Psychosocial Functioning—Social functioning was measured using the Social Adjustment Scale (Weissman, 1999) comprised of six social role areas (work, social and leisure activities, family relationship, marital relationship, parental role, and role within the family unit). Lower scores indicate higher levels of functioning.

Sexual Risk—The *Risk Behavior Survey* (RBS; Booth et al., 1993) assesses for HIV (and other sexually transmitted infections) risk behaviors, including sexual activity (vaginal or anal sex) without use of a condom, in the past 30 days among all partner types (i.e., both primary partners and casual partners).

Statistical Methods

Two samples were analyzed in this study: (1) clients who completed the brief eligibility screening assessment; and (2) participants who were enrolled (i.e., randomized) into the main trial. Descriptive variables from the screening assessment were calculated for the total screened sample and separately by eligibility and enrollment status: a) screened and ineligible; b) screened, eligible, but not enrolled; and c) screened, eligible, and enrolled. Chi-square tests for categorical variables and F-tests for continuous variables were used to analyze the data.

For analyses with the enrolled sample, participants were further categorized into groups based on their primary substance of abuse (i.e., alcohol, cocaine, other stimulants, opiates, marijuana, other). Chi-square (X^2) tests for categorical variables and F-tests for continuous variables were used to analyze the data. Pairwise comparisons between primary substance subgroups (excluding "other" due to the small number of participants) were conducted if the test statistic p-value was ≤.01. Since this was an exploratory analysis, a formal correction for multiple statistical tests was not utilized; however the alpha level was set to a more conservative level of .01. The statistical package *SAS* 9.2 was used for all analyses.

RESULTS

Screening Sample

Table 1 presents characteristics of individuals who completed the screening. Out of 1,781 outpatient clients, 850 (47.7%) were ineligible; 424 (23.8%) were eligible but did not enroll into the study; and 507 (28.5%) were eligible and enrolled into *WEB-TX*. The primary reasons clients screened ineligible were: no illicit substance use in the past 30 days (83.3%); not planning a treatment episode of at least 90 days (11.9%); in the current treatment episode greater than 30 days (8.6%); and currently prescribed an opioid replacement therapy (7.9%). Ineligibility due to no illicit substance use in the past 30 days was high; this was likely the result of participants seeking treatment for alcohol abuse only or participants who were in treatment for longer periods of time (although staff attempted to recruit clients as soon as possible after program intake and exclusion criteria ruled out those in treatment more than 30 days). Of the total screened sample, 37.2% were women, mean age was 35.4 year (*SD*=11.4). Eligibility criteria required at least one episode of illicit substance use in the prior month; therefore clients who eventually enrolled were less likely to report alcohol as their primary substance (21.1%) compared to those who were ineligible (48.0%).

Among eligible clients who did not enroll, 31% said they were not interested in the study after the screening assessment. Of these, only 7.7% said it was because the research involved a computer intervention. Among eligible clients who scheduled but did not complete the baseline assessment (69%), the majority failed to show for the appointment (41.2%), followed by 25.4% that were no longer interested, and 23.2% who were no longer enrolled at the program. Compared to the eligible/not enrolled participants, the enrolled sample was older (34.9 years of age compared to 33.1 years; F=6.45, p < .05) and had less recent illicit substance use (14.6 days since last use compared to 11.4 days; non-parametric Wilcoxon test Z=3.51, p < .001).

Enrolled Sample

Demographic Characteristics—Table 2 displays the demographic characteristics of the enrolled sample (N=507). Ten cases were excluded from the primary substance analysis because of small numbers endorsing other substances of abuse (benzodiazepines, n=9 and PCP, n=1). Data is separated by subgroups based on reported primary substance of abuse on the DSM-IV substance use related disorders measure (note: primary substance of abuse is slightly different based on the DSM-IV assessment compared to the screening assessment for the enrolled sample). About a fifth of the sample (22.9%; n=114) identified marijuana as their primary substance; 21.7% (n=108) opiates; 20.9% (n=104) alcohol; 20.5% (n=102) cocaine; and 13.9% (n=69) stimulants/methamphetamines.

Differences among alcohol, cocaine, stimulant, opiate and marijuana subgroups were assessed. Opiate (*M*=31.7 years, *SD*=10.1) and marijuana (*M*=29.9 years, *SD*=10.2) users tended to be younger than alcohol (*M*=37.6, *SD*=10.7) or cocaine (*M*=40.4 years, *SD*=10.0) users (F=19.4, p < .001). Differences were detected in racial/ethnic identification (X^2=144.0, p < .001): a higher percentage of African Americans reported primary cocaine use; opiate users were primarily White; and stimulant users were comprised of more multi-racial/other identified participants. Marijuana users were more likely than stimulant users to be single, never married (73.7% vs. 47.8%) (X^2=25.9, p = .001). Opiate users (25.0%) were less likely than marijuana users (45.6%) to be in treatment as a result of criminal justice involvement (F=13.9, p = .008). Experience with the internet was common, only between 20.2% (marijuana) to 36.6% (cocaine) of the enrolled sample reported no internet use in the last three months. Cocaine users (34.3%) were less likely than marijuana users (57.9%) to report

using the internet at least daily (X^2=23.1, p = .003). No other significant differences were detected for sex, education, and employment.

Substance Use Characteristics—Table 3 shows substance use characteristics of the sample. There were no significant differences in the use of nicotine, with a range of 66.7% (stimulants) to 84.3% (opiates). Marijuana users were the least likely to be abstinent from all substances at baseline based on urine drug toxicology results (31.3%) (F=40.2, p < .001), likely the result of urine tests positive for marijuana (33% abstinent; F=137.4, p < .001). This might be expected since THC takes longer to metabolize and marijuana use tends to be more frequent in comparison with the intermittent use of other substances. Stimulant users had the highest abstinence rate at baseline based on urine toxicology (75.0%). Compared to cocaine users, stimulant users were less likely to meet alcohol abuse or dependence criteria (64.7% compared to 39.1%). Opiate users were much more likely to report injection drug use in the prior 90 days (42.6%) compared to alcohol (3.9%), cocaine (3.9%), stimulant (1.5%), and marijuana users (0%) (F=140.5, p < .001). Marijuana users were the least likely to attend 12-step facilitation groups in the prior 90 days (21.1% reported attendance). Opiate users (75.0%) were the most likely to attend 12-step meetings, although this attendance did not differ significantly from cocaine (63.7%) or stimulant (73.9%) users (F=84.1, p < .001).

Participants across all primary substance abuse categories had high rates of multiple substance use disorders. Almost half of participants reporting alcohol as their primary substance also had a cocaine (41.4%) or marijuana (48.1%) use disorder. Among primary cocaine users, 64.7% had an alcohol use disorder and 33.3% a marijuana use disorder. About a third of primary stimulant users also had alcohol (39.1%) or marijuana (34.8%) use disorders. Primary opiate users also had alcohol (54.6%), cocaine (38.9%), or marijuana (37.0%) use disorders. Among primary marijuana users, 50.9% also had an alcohol use disorder.

Physical and Mental Health, HIV Risk Characteristics—Table 4 shows physical and mental health characteristics, psychosocial functioning, and sexual risk behaviors among the enrolled sample as a function of primary substance of abuse. On the social adjustment scale, marijuana users reported better adjustment (*M*=2.3, *SD*=0.60) in the social/leisure category compared to cocaine users (*M*=2.7, *SD*=0.74). Alcohol, stimulant, and opiate user scores did not significantly differ from marijuana or cocaine users. There were no statistically significant differences in physical health status. Using a 100-point visual analog rating scale of overall health status (100=best imaginable health state), the range was 71.7 (*SD*=21.2) for alcohol users to 76.4 (*SD*=17.9) for stimulant users. Although no statistically significant differences were detected for mental health disorders or sexual risk, rates of both were common among the sample. A diagnosis of major depression was probable among 20.9% of the sample depending on primary substance (14.9% marijuana to 29.4% cocaine). Generalized anxiety disorder was likely among 20.6% (cocaine) to 32.4% (stimulants) of participants. Across primary substance subgroups, there was a mean of 7.2 (*SD*=13.1) to 9.4 (*SD*=16.0) unprotected sex acts in the prior 30 days. Among sexually active participants, 70.2% (opiates) to 87.5% (stimulants) reported that at least 90% of sex acts were condom-unprotected.

DISCUSSION

This study offers a broad snapshot of demographic and clinical features of treatment seeking individuals in diverse geographic locations across the U.S. This effectiveness study maintained an 'all comers' approach to inclusion/exclusion criteria, requiring only that participants have used some illicit substance in the 30 days prior to baseline and not currently be receiving a medication-assisted opioid treatment. As such, analyses provide the

opportunity to examine differences in characteristics across substances for which the participants identified that they were seeking treatment.

There was variability in distribution of primary substance across the five main substance abuse categories: alcohol (20.9%); cocaine (20.5%); stimulants (13.9%); opiates (21.7%); and marijuana (22.9%). The inclusion criteria of at least one occasion of illicit drug use in the 30 days prior to baseline reduced the number of participants with alcohol only substance use disorders. The sample compares relatively well to the distribution of primary substance among all treatment admissions in 2010 (41% alcohol; 23% opiates; 18% marijuana; 8% cocaine; and 6% stimulants (SAMHSA, 2012); the percentages of cocaine and other stimulant users appears higher in the enrolled study sample. Higher percentage of stimulant users in the enrolled sample may reflect the specific geographic location of the sites. For example, three of the 10 sites were located on the west coast which typically report higher rates of stimulant use. Further, compared to two earlier CTN behavioral intervention trials that also recruited participants with any substance of abuse as long as there was at least one day of use (alcohol or drug) in the 30 days prior to baseline (Ball et al., 2007; Carroll et al., 2006), the current study has fewer alcohol users (compared to 40% and 50%, respectively) and a greater percentage of opiate users (compared to 9% and 5%, respectively). Higher percentage of primary opiate use in the current study likely reflects the prescription opiate epidemic of the last 10 years (SAMHSA, 2011); lower rates of primary alcohol use likely reflects the current study inclusion criteria of at least one day in the past 30 of illicit drug use.

Overall, there were very few demographic or clinical differences across primary substance of abuse. Across all substance categories there were high rates of polysubstance abuse and dependence, especially among alcohol and marijuana users. Marijuana users showed the greatest differences compared to subgroups. Those for whom marijuana was the primary substance were younger, less likely to be ever married, and less likely to have attended 12-step meetings. They also reported the highest number of days of use in the past three months of their primary substance. Prior research shows that marijuana users seeking treatment are typically daily, relatively heavy users and younger in age with higher functioning compared to those with alcohol or other drug use disorders (Compton et al., 2004; Horey et al., 2012; Levin et al., 2006). Marijuana users were, however, as likely to report mental health co-morbidities, rate physical health similarly, and engage in risky sexual behaviors. They were more likely to be in treatment as a result of criminal justice involvement; marijuana users may be less likely in general to seek treatment unless compelled to do so because of an arrest or some other legal issue (SAMHSA, 2011).

The sample had high rates of psychiatric co-morbidity compared to the general population, with few differences as a function of primary substance of abuse. Substance abusing populations frequently present to treatment with psychiatric co-morbidities that may significantly impact treatment outcomes (Kessler et al., 1996; Watkins et al., 2004; Compton et al., 2007; Hasin et al., 2007; Flynn & Brown, 2008). Healthcare reform in the U.S., propelled by the passage of the Affordable Care Act, provides an opportunity for increased integration of care for substance abuse disorders and mental health. This could include collocation of substance abuse treatment, mental health, and primary care clinics, as well as the promotion of addiction medicine into outpatient community-based substance abuse treatment programs. Currently, many community clinics are not equipped to provide mental health and medical services, yet the current data set reveals that these services should be offered and encouraged for all treatment seekers, regardless of their substance of abuse and its perceived severity.

Not surprisingly, perceived physical health was lower than other general population samples. For example, among men and women, aged 30-39, in a Canadian general population (U.S. norms were unavailable), the mean physical health score was M=83.3 (SD=11.1) with the 25th percentile cut-off at M=80 (Szende & Williams, 2004). Thus, this treatment seeking population had greater variability in reported health status (SD=19.7), and worse overall perceived health (i.e., the mean health score of the study sample, M=72.9, was 10 points lower than the 25th percentile of the general Canadian sample). Somewhat unexpected was the lack of difference in perceived physical health across substances of abuse. It is often assumed that greater health problems will be found among individuals using opiates or cocaine compared to marijuana. However, even primary marijuana users had high rates of co-occurring substance use disorders and this may have limited detectable differences.

There were also high rates of sexual risk behaviors across subgroups (80% of all sex acts were unprotected). Surprisingly, there were no differences in sexual risk across primary substances of abuse, although prior research has demonstrated that, beyond risk from injection drug-related behaviors (e.g., sharing needles), stimulant use is an important driver in the sexual transmission of HIV/AIDS (Colfax & Shoptaw, 2005; Degenhardt et al., 2007; Volkow et al., 2007). Further, while substance abuse treatment has had a powerful influence on drug-related HIV risk reduction, sexual risk behaviors have been slower to change and less of a focus in drug treatment settings (Sorensen & Copeland, 2000). Thus, current findings underscore the need to integrate HIV/other STI prevention interventions into outpatient treatment programs.

About half of those screened for the study were ineligible, primarily due to no recent self-reported illicit substance use in the prior month (82% of ineligible participants). This finding corroborates prior evidence indicating that a large portion of individuals enter substance abuse treatment having already achieved some period of abstinence (Rosengren et al., 2000). Alternatively, about a quarter of clients who were eligible did not enroll; they tended to be younger and have more recent substance use, suggesting a less motivated or more severe population. Younger age has been previously associated with dropout from treatment (Agosti et al., 1996; Mancino et al., 2010). Recruiting participants in the early stages of treatment can be challenging due to the higher likelihood of drop-out and this should be taken into accounted when determining sample size and selecting recruitment sites.

An encouraging finding was that few participants expressed concern about the computer-assisted intervention. About 74% of the enrolled sample used the internet at least once in the prior month. It is possible that substance using populations may be at a socioeconomic disadvantage or have less stable housing that make consistent, broadband internet access more difficult; but access did not seem to be low in the current sample. Internet use in the general population varies by household income (e.g., 95% of Americans in households making $75,000/year or more use the internet at least occasionally versus 57% of households making less than $30,000/year) (Pew, 2010). It remains to be seen if the increasing use of smart phones, now at 46% use among American adults (Pew, 2012), further erodes differences in internet accessibility.

Limitations

The primary limitation to the generalizability of the study sample is the considerable attrition between screening and randomization. In particular the enrolled sample does not contain the sizable group of patients that attend treatment once or twice and then drop out. Further, it also doesn't include clients who have achieved an extended period of abstinence prior to entering treatment. Clients with longer self-reported abstinence may include those coming out of long term residential settings or those involved in the criminal justice system.

In excluding potential participants with no illicit substance use in the past 30 days, the study effectively excluded those with only alcohol use disorders (approximately 14% of the screened sample). The exclusion of this group may have contributed to differences between subgroups. This is also a group that may potentially benefit from a web-delivered psychosocial education program and would have increased the generalizability of findings. Alcohol only admissions comprised 22.6% of all admissions in 2010 (SAMHSA, 2012), making them a substantial and important population to study in community-based trials.

CONCLUSION

This study was successful in recruiting a diverse sample of substance users with respect to primary substance and similar to national samples of treatment seekers. Participants appeared open to the web-delivered modality of the study intervention, a promising sign as more and more efficacious computer-assisted treatments emerge. The large sample size and distribution across substance use categories allowed for a unique examination of demographic and clinical characteristics. There were relatively few differences between primary substance use groups on key prognostic indicators; however providers may want to consider treatments for primary marijuana users that focus on engagement and enhancing motivation more so than other primary substance groups. Of interest were the high levels of co-occurring mental health disorders and sexual risk reported across categories of primary substance, along with high rates of polysubstance use disorders. Primary substance of abuse may be a less important indicator of overall severity compared to co-occurring disorders and other social and contextual factors (e.g., lower levels of education and employment, social adjustment issues, and physical health challenges) common across treatment seekers, further demonstrating the need for integrated treatment services and care.

Acknowledgments

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Table 1

Characteristics of the Total Screened, and the Ineligible, Eligible, and Enrolled Samples for a multi-site, community-based effectiveness trial of a web-based psychosocial intervention for substance use disorders

	Total Screened N=1,781	Ineligible N=850	Eligible Not Randomized N=424	Eligible Randomized N=507	
	M (SD) or %				X^2/F [*]
Sex (women)	37.17	35.41	39.86	37.94	NS
Age (yrs)	35.37 (11.35)	36.81 (11.66)[a]	33.08 (10.84)[b]	34.89 (10.91)[c]	16.14 (p<.001)
Days since program start	6.92 (32.34) (N=1773)	11.75 (46.08)[a] (N=842)	2.17 (5.63)[b]	2.89 (5.75)[b]	83.27 (p<.001)
Primary Substance					183.06 (p<.001)
Alcohol	33.41	48.00	18.87	21.10	
Cocaine	13.42	9.06	13.92	20.32	
Marijuana	18.47	14.92	22.41	21.10	
Opiates	19.37	16.12	23.58	21.30	
Stimulants	12.75	9.76	17.22	14.00	
All Other (including missing)	2.58	2.11	4.01	2.17	
Last illicit drug use (days)	408.96 (1627.40) (N=1661)	913.83 (2361.16)[a] (N=730)	11.25 (12.00)[b]	14.62 (13.95)[c]	826.67 (p<.001) [+]

[*] Chi-Square/F-test values were included only when significant at p < .01;

[a] Superscripts indicate differences between enrollment categories;

[b] Superscripts indicate differences between enrollment categories;

[c] Superscripts indicate differences between enrollment categories;

[+] nonparametric Kruskal-Wallis test.

Table 2

Demographic Characteristics by Primary Substance of Abuse among the Enrolled Sample at Baseline in a multi-site effectiveness trial of a web-based intervention for substance use disorders (N=507[+])

	Total N=507	Alcohol N=104	Cocaine N=102	Stimulants N=69	Opiates N=108	Marijuana N=114	X^2/F^*
	M(SD) / %						
Sex (women)	37.94	37.14	47.0	33.3	31.48	38.60	NS
Age (yrs)	34.89(10.89)	37.64 (10.66)^a	40.44 (9.98)^a	36.71 (9.83)^{ab}	31.70 (10.11)^{bc}	29.93 (10.15)^c	19.44 (p<.001)
Race/Ethnicity							144.03 (p<.001)
White	52.66	56.73	40.20	42.03	82.41	37.72	
African American	22.09	20.19	45.10	4.35	5.56	29.82	
Hispanic/Latino	10.85	15.38	7.84	8.70	7.41	14.04	
Multi-racial/Other	14.40	7.69	6.86	44.93	4.63	18.42	
Education							NS
< High School	23.27	20.19	27.45	20.29	27.78	20.18	
High School/GED	61.14	58.65	59.80	65.22	54.63	69.30	
> High School	15.58	21.15	12.75	14.49	17.59	10.53	
Marital Status							25.76 (p=.001)
Never Married	60.75	56.73	52.94	47.83	65.74	73.68	
Married/Remarried	14.20	10.58	14.71	14.49	16.67	13.16	
Divorced/Separated/Widowed	25.05	32.69	32.35	37.68	17.59	13.16	
Employed	41.22	36.54	34.31	34.78	47.22	47.37	NS
Admission prompted/mandated by the criminal justice system	34.71	34.62^{abcd}	28.4^{abc}	42.03^{bd}	25.00^c	45.61%^{d}	13.86 (p=.008)
Internet Use (90d)							23.13 (p=.003)
None	26.23	26.92	36.27	27.54	23.15	20.18	
Sometimes, not daily	26.23	17.31	29.41	34.78	32.41	21.93	
At least once per day	47.53	55.77	34.31	37.68	44.44	57.89	

[+]10 cases whose primary substance was "other" (9 Benzodiazepine and 1 PCP) were excluded in analyses by primary substance;

[*]Chi-Square/F-test values were included only when significant at p < .01;

[a]Superscripts indicate differences between primary substance categories.

[b]Superscripts indicate differences between primary substance categories.

[c]Superscripts indicate differences between primary substance categories.

Table 3

Substance Use Frequency and Severity by Primary Substance of Abuse among the Enrolled Sample at Baseline in a multisite effectiveness trial of a web-based intervention for substance use disorders (N=507[+])

	Total N=507	Alcohol N=104	Cocaine N=102	Stimulants N=69	Opiates N=108	Marijuana N=114	X²/F[*]
				M (SD) / %			
Nicotine use	77.12	77.92	81.37	66.67	84.26	71.93	NS
Abstinent[++]							
All illicit substances	55.16	57.69^a	54.90^a	75.00^a	63.89^a	31.25%^{b}	40.24 (p<.001)
Benzodiazepines	91.67	84.62^a	93.14^{ab}	97.06^{ab}	88.89^{ab}	96.43%^{b}	14.11 (p=.007)
Amphetamine	99.21	100.0	100.0	94.12	100.0	100.0	NS
Marijuana	74.80	78.85^a	88.24^{ab}	95.59^b	87.04^{ab}	33.04%^{c}	137.36 (p<.001)
Methamphetamine	96.83	98.08	99.02	83.82	100.0	98.21	NS
Opiates	97.82	98.10	99.01	100.0	92.59	100.0	NS
Cocaine	89.48	90.38^a	70.59^b	100.0	95.37^a	93.75%^{a}	52.88 (p<.001)
Ecstasy	99.60	99.04	100.0	98.53	100.0	100.0	NS
Oxycodone	95.04	96.15	96.08	97.06	88.89	97.32	NS
Methadone	99.80	100.0	100.0	100.0	99.07	100.0	NS
Barbiturate	99.40	99.04	100.0	100.0	98.15	100.0	NS
Abuse or Dependence							
Alcohol	62.52	97.12^a	64.71^b	39.13^c	54.63^{bc}	50.88%^{bc}	78.95 (p<.001)
Cocaine	41.42	41.35^a	97.06^b	8.70^c	38.89^a	14.91%^{c}	193.57 (p<.001)
Stimulants	22.68	13.46^a	6.86^a	98.55^b	12.96^a	9.65%^{a}	260.84 (p<.001)
Opiates	33.73	28.85^a	14.71^{ab}	7.25^b	99.07^c	7.89%^{b}	280.96 (p<.001)
Marijuana	49.31	48.08^a	33.33^a	34.78^a	37.04^a	86.84%^{b}	87.02 (p<.001)
Substance Use (90d)[++]							
Alcohol	17.00 (23.22)	38.55 (25.36)^a	14.55 (19.04)^b	5.09 (13.04)^b	8.52 (16.13)^b	14.65 (22.83)^b	41.02 (p<.001)
Cocaine	7.95 (15.92)	5.91 (12.05)^a	27.81 (21.27)^b	1.42 (8.24)^a	2.80 (8.86)^a	1.39 (4.80)^a	82.87 (p<.001)
Stimulants	5.00 (15.42)	1.13 (5.30)^a	0.75 (4.09)^a	29.71 (27.89)^b	0.82 (4.57)^a	1.76 (10.18)^a	83.69 (p<.001)
Opiates	10.24 (20.79)	6.14 (15.79)^a	2.09 (7.57)^b	0.30 (1.68)^c	36.98 (25.55)^d	2.12 (11.03)^b	106.80 (p<.001)
Marijuana	20.27 (29.96)	13.62 (21.48)^a	7.64 (17.82)^a	7.71 (18.91)^a	11.56 (24.43)^a	54.39 (31.08)^b	76.69 (p<.001)
Other	2.44 (10.51)	2.99 (11.72)	1.64 (8.46)	0.84 (6.86)	2.74 (9.99)	0.86 (7.44)	NS
Injection use (90d)	11.44	3.85^a	3.92^a	1.45^a	42.59^b	0	140.54 (p<.001)
12-step (90d)	55.61	57.69^a	63.73^{ab}	73.91^b	75.00^b	21.05%^{c}	84.08 (p<.001)

[+]10 cases whose primary substance was "other" (9 Benzodiazepine and 1 PCP) were excluded in analyses by primary substance;

*
Chi-Square/F-test values were included only when significant at p < .01;

*a*Superscripts indicate differences between primary substance categories;

*b*Superscripts indicate differences between primary substance categories;

*c*Superscripts indicate differences between primary substance categories;

*d*Superscripts indicate differences between primary substance categories;

*++*Abstinence results are based on urine toxicology screens, substance using days are based on self-report using the Timeline Follow-back method.

Table 4

Physical, Mental Health and Sexual Risk Characteristics by Primary Substance of Abuse among the Enrolled Sample at Baseline in a multi-site effectiveness trial of a web-based intervention for substance use disorders (N=507[+])

	Total N=507	Alcohol N=104	Cocaine N=102	Stimulants N=69	Opiates N=108	Marijuana N=114	X²/F[*]
	M (SD) / %						
Physical Health Status (EQ5D) (0-100)	72.91 (19.66)	71.73 (21.24)	71.95 (20.92)	76.36 (17.90)	72.03 (18.37)	73.26 (19.75)	NS
Depression (PHQ)	20.91	25.00	29.41	15.94	19.44	14.91%	NS
Social Anxiety (PHQ)	16.96	17.31	26.47	20.29	14.81	8.77%	NS
Panic (PHQ)	18.15	26.92	17.65	10.14	19.44	14.04%	NS
General Anxiety (PHQ)	27.61	25.96	20.59	31.88	32.41	28.07%	NS
ADHD (PHQ)	24.65	33.65	30.39	20.29	21.30	17.54%	NS
PTSD (PHQ)	21.13	23.08	27.55	20.59	14.02	22.73%	NS
Social Adjustment Scale							
Work Role	1.68 (0.58)	1.77 (0.74)	1.65 (0.56)	1.60 (0.38)	1.71 (0.48)	1.66 (0.65)	NS
Social/Leisure	2.49 (0.64)	2.52 (0.68)^{ab}	2.72 (0.74)^a	2.47 (0.56)^{ab}	2.44 (0.55)^{ab}	2.31 (0.60)^b	5.98 (p<.001)
Extended Family	1.99 (0.71)	2.00 (0.63)	2.09 (0.76)	2.07 (0.77)	1.95 (0.69)	1.89 (0.73)	NS
Primary Relationship	2.08 (0.62)	1.94 (0.63)	2.28 (0.53)	2.04 (0.49)	2.00 (0.75)	1.98 (0.60)	NS
Parental	1.35 (0.61)	1.37 (0.47)	1.43 (0.73)	1.32 (0.42)	1.42 (0.64)	1.28 (0.67)	NS
Family Unit	2.43 (1.06)	2.51 (1.03)	2.54 (0.98)	2.59 (1.08)	2.30 (1.08)	2.27 (1.12)	NS
Sexually Active (30d)	69.43	62.50	68.63	72.46	65.74	76.32%	NS
> 1 sexual partner (30d)	15.98	19.23	15.69	11.59	15.74	14.91%	NS
Unprotected vaginal/ anal sexual occasions (30d)	8.60 (15.06)	7.51 (14.79)	9.38 (15.24)	9.28 (15.23)	7.20 (13.14)	9.41 (16.00)	NS
Proportion unprotected vaginal/anal sexual acts among sexually active (30d)	80.31	77.54	82.58	89.58	77.30	78.08%	NS
Proportion unprotected vaginal/anal sexual acts among sexually active (30d)							NS
≤10%	15.15	18.64	13.64	8.33	17.91	14.81%	
11-89%	10.30	8.47	10.61	4.17	11.94	13.58%	
≥90%	74.55	72.88	75.76	87.50	70.15	71.60%	

[+]10 cases whose primary substance was "other" (9 Benzodiazepine and 1 PCP) were excluded in analyses by primary substance;

[*]Chi-Square/F-test values were included only when significant at p < .01;

[a]Superscripts indicate differences between primary substance categories.

[b]Superscripts indicate differences between primary substance categories.

[c]Superscripts indicate differences between primary substance categories.