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## Short-term Efficacy of a Brief Intervention to Reduce Drug Misuse and Increase Drug Treatment Utilization Among Adult Emergency Department Patients

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### Abstract

**Objectives**—Although brief interventions (BIs) have shown some success for smoking cessation and alcohol misuse, it is not known if they can be applied in the emergency department (ED) to drug use and misuse. The objectives of this investigation were to assess the 3-month efficacy of a BI to reduce drug use and misuse, increase drug treatment services utilization among adult ED patients, and identify subgroups more likely to benefit from the BI.

**Methods**—This randomized, controlled trial enrolled 18- to 64-year-old English- or Spanish-speaking patients from two urban, academic EDs whose responses to the Alcohol, Smoking, and Substance Involvement Screening Test indicated a need for a brief or intensive intervention. Treatment participants received a tailored BI, while control participants only completed the study questionnaires. At the 3-month follow-up, each participant's past 3-month drug use and misuse and treatment utilization were compared to his or her baseline enrollment data. Regression modeling was used to identify subgroups of patients (per demographic and clinical factors) more likely to stop or reduce their drug use or misuse or engage in drug treatment by the 3-month follow-up assessment.

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#### Supporting Information

The following supporting information is available in the online version of this paper:

**Data Supplement S1.** Demographics questionnaire.

**Data Supplement S2.** ED BI session outline themes and discussion topics.

**Data Supplement S3.** Demographics characteristics at baseline and 3 months.

**Data Supplement S4.** Past 3-month drug use/misuse frequency at baseline by study group among participants who completed the 3-month follow-up.

**Data Supplement S5.** Past 3-month drug use/misuse at 3-month follow-up on a categorical scale by study group.

**Data Supplement S6.** Differences in total days of drug use/misuse in the past 3 months.

**Data Supplement S7.** Multivariable regression analysis of differences in all drug use/misuse including marijuana at 3-month follow-up.

**Data Supplement S8.** Multivariable regression analysis of differences in all drug use/misuse excluding marijuana at 3-month follow-up.

**Data Supplement S9.** Multivariable regression analysis of differences in marijuana use/misuse at 3-month follow-up.

**Data Supplement S10.** Results of univariate analysis – including marijuana, excluding marijuana, and marijuana only.

**Data Supplement S11.** Univariable and multivariable regression analysis of differences in drug treatment utilization at 3-month follow-up.

**Results**—Of the 1,030 participants, the median age was 30 years (interquartile range = 24 to 42 years), and 46% were female; 57% were white/non-Hispanic, 24.9% were black/non-Hispanic, and 15% were Hispanic. The most commonly misused drugs were marijuana, prescription opioids, cocaine/crack, and benzodiazepines. Although at follow-up the proportions of participants reporting any past 3-month drug misuse had decreased in both study arms (control 84% vs. treatment 78%), the decreases were similar between the two study arms (  $-6.3\%$ ; 95% confidence interval [CI] =  $-13.0\%$  to 0.0). In addition, at follow-up there were no differences between study arms in those who were currently receiving drug treatment (  $1.8$ ; 95% CI =  $-3.5$  to 6.8), who had received treatment during the past 3 months (  $-2.0$ ; 95% CI =  $-6.5$  to 2.4), or who at least contacted a treatment program (  $1.7$ ; 95% CI =  $-2.4$  to 6.1). Those whose baseline screening indicated the need for a brief instead of a more intensive intervention, and those currently engaged in drug treatment at the 3-month follow-up, were generally more likely to stop or decrease their drug use/misuse.

**Conclusions**—The BI employed in this study did not reduce drug use and misuse or increase treatment utilization more than the control condition over a 3-month period. Future research should help determine what role, if any, BIs should play in affecting drug use and misuse among ED patients.

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Illicit and prescription drug use and misuse is a tremendous problem in the United States, with serious negative economic, financial, health, and social consequences.<sup>1,2</sup> People who use or misuse drugs often receive medical care from U.S. emergency departments (EDs),<sup>3-9</sup> frequently due to illnesses and injuries linked to their drug use or misuse.<sup>10-13</sup> Yet, screening for drug use or misuse and assessment for treatment needs is not standard practice in U.S. EDs.<sup>14</sup> Furthermore, studies have demonstrated that many ED patients who need substance abuse treatment do not receive it.<sup>14</sup> Linking patients to appropriate treatment services at the time of the ED visits might decrease ongoing and future misuse, and consequentially more expensive health care.<sup>15</sup>

Some screening, brief intervention (BI), and referral to treatment (SBIRT) models have been shown in some studies to be effective in reducing alcohol misuse, risk-taking behaviors, and negative consequences of alcohol misuse<sup>16-21</sup> and marijuana use<sup>22,23</sup> among some ED patients. However, it is not yet been demonstrated that SBIRT can be applied successfully in the ED to other illicit or prescription drug misuse. If SBIRT is effective in the ED for drug misuse by decreasing use and increasing access to appropriate treatment resources, it might help reduce the societal and individual burdens of this public health problem.

The primary aim of this investigation was to determine if a tailored BI aimed to reduce illicit or prescription drug misuse among adult ED patients requiring brief or more intensive intervention was more efficacious than no BI (study questionnaires only) in the short term (3 months after ED enrollment). The secondary aim was to determine if this BI was more efficacious than no BI in increasing use of drug treatment services in the same time period. The tertiary aim was to determine if there were subgroups of patients (identified by their demographic and clinical factors) more likely to benefit from the BI.

## METHODS

### Study Design

The Brief Intervention for Drug Misuse in the Emergency Department (BIDMED) was a randomized, controlled trial that enrolled participants from July 2010 through December 2012. The hospital institutional review board approved the study. We obtained a certificate of confidentiality from the National Institutes of Health due to the sensitive nature of the drug use and misuse questions and informed study participants about its potential protections and limitations.

### Study Setting and Population

The study location was two urban EDs affiliated with a medical school in Providence, Rhode Island. One ED is a Level I trauma center with an annual patient volume of >100,000 adult visits, and the other is a community hospital ED with an annual patient volume of >55,000 adult visits. Rhode Island consistently ranks as having one of the highest percentage of its citizens reporting illicit drug use, and one of the highest reported prevalences of drug dependency in the United States (9% to 13%).<sup>24</sup> In 2010–2011, 14.6% of those 18 years or older in the general population of the state reported that they used illicit drugs, 66.2% had consumed alcohol, and 29.7% used tobacco products within the past month.<sup>25</sup>

A random sample of patients present in each ED during study collection periods was approached and evaluated for study inclusion through random selection of their patient care rooms. If the ED electronic medical record indicated that a patient potentially was eligible, a research assistant (RA) confirmed study eligibility through a brief interview. Data collection for the study was performed from 8:00 AM to midnight 7 days a week when bilingual (English- and Spanish-speaking) RAs were available to conduct the study.

Patients were potentially eligible if they were 18 to 64 years old; English- or Spanish-speaking; not critically ill or injured; not prison inmates, under arrest, nor undergoing home confinement; not presenting for acute psychiatric illness; not requesting treatment for substance use or misuse; not intoxicated; and having no physical or mental impairments preventing them from providing consent or participating in the study. The inclusion and exclusion criteria attempted to mirror the general adult ED population who would be included in an SBIRT program, i.e., excluding those presenting for evaluation of their substance misuse, those acutely intoxicated, and those undergoing formal substance misuse or psychiatric evaluations. ED staff members were not permitted to encourage or refer patients to be in the study. Participants received gift cards to a local pharmacy for completing the baseline and 3-month follow-up.

### Study Protocol

**Study Questionnaire Content and Administration**—Before randomization assignment, the RAs queried ED patients who met initial study eligibility criteria about their demographic characteristics. Patients next completed a confidential, audio computer self-administered interview (ACASI)-based assessment of their substance use and misuse using the Alcohol, Smoking and Substance Involvement Screening Test, Version 3 (ASSIST V.

3).<sup>26</sup> The adaptation, pilot testing, psychometric assessments, and reading level of this and the other study instruments have been described previously.<sup>27</sup> Per World Health Organization recommendations, ED patients with ASSIST scores of at least four points for any drug category or who had ever injected drugs (signifying a need for at least a BI) were invited to enroll in BIDMED.<sup>26</sup> ASSIST scores over 26 indicate the need for more intensive treatment, although only a BI was delivered as part of this study protocol.

Following enrollment, participants were randomly assigned 1:1 into the two study arms (treatment vs. control) using block randomization with a block size of 6. Afterward, participants completed a drug misuse frequency questionnaire and the Treatment Services Review questionnaire, which was adapted for this study<sup>28</sup> (see Data Supplement S1, available as supporting information in the online version of this paper, for English-language copies of study questionnaires). At 3 months after ED enrollment, participants completed the follow-up questionnaires via the Internet using the ACASI. Participants completed the baseline questionnaires in approximately 10 to 15 minutes. The RAs were blinded to the participant questionnaire responses.

**Description of the BI**—The primary goal of the BI was to motivate participants to reduce their drug misuse and seek appropriate treatment. A brief outline of the BI content is in Data Supplement S2 (available as supporting information in the online version of this paper). The BI sessions were approximately 20 to 30 minutes in duration and were based on two theoretically driven approaches to behavior change: motivational interviewing<sup>29</sup> and the health beliefs model.<sup>30</sup> During the BI the RAs took on the role of a health educator and used motivational interviewing techniques (e.g., decisional balance, discussing goals and values)<sup>31</sup> to facilitate a discussion about behavior changes. Each BI participant was contacted via telephone for a booster session by the interventionist 2 to 4 weeks after ED enrollment and discussed progress, if any, with reaching the goals outlined during the initial BI session. The RAs met with the study investigators throughout the study to discuss clinical and procedural issues arising from the delivery of the BI. To ensure fidelity to the BI, RAs voice recorded their BI sessions and these were reviewed by the psychologist research team members and discussed with the RAs. Deviations from the BI protocol were addressed, and suggestions for improvement were provided at these review sessions.

## Data Analysis

Study eligibility assessments and enrollment were summarized using the recommended Consolidated Standards of Reporting Trials (CONSORT) approach for randomized, controlled trials.<sup>32</sup> Participant demographic characteristics were compared by study arm for those enrolled and those who completed the 3-month follow-up. Commensurate with findings from prior drug misuse reduction intervention studies,<sup>33–35</sup> we based the sample size needed for BIDMED on the primary aim of a hypothesized 25% greater decrease in drug use and misuse in the treatment versus the control arm by 3-month follow-up. Our estimated sample size was 550 per study arm for an 80% power and a two-sided Type I error rate of 0.05 under this hypothesis. Drug misuse was compared by study arm as follows: 1) differences in proportions of participants reporting any drug use in the past 3 months at 3-month follow-up versus baseline, with corresponding 95% confidence intervals (CIs); 2)

changes in drug use/misuse frequency in the past 3 months at 3-month follow-up versus baseline on a continuous scale, using differences in means with corresponding 95% CIs; 3) differences in the distributions of drug use/misuse frequency in the past 3 months at 3-month follow-up on a categorical scale, using Pearson's chi-square or Fisher's exact test; and 4) differences in means of total days of drug use, most number of drugs used/day, and typical number of drugs used/day in the past 3 months at 3-month follow versus baseline, with corresponding 95% CIs. For the secondary outcome of drug treatment utilization, we compared study arms by the differences in proportions (3 months vs. baseline) with corresponding 95% CIs of those who received treatment in the prior 3 months, were currently in treatment, or who sought but did not receive treatment. All 95% CIs were calculated using the bootstrap method with 1,000 resamples to avoid the normality assumption, which is not always feasible in comparing differences in proportions and frequencies of drug use when data are sparse or skewed. For the tertiary aim, we constructed multivariable models to examine demographic, drug use and misuse, and treatment factors associated with no drug use at 3-month follow-up (logistic regression); decrease in total days of drug use; most number of drugs used/day; and typical number of drugs used/day (3-month follow-up vs. baseline; linear regression); and receipt of treatment within the prior 3 months (logistic regression). Separate models were created for all drugs, marijuana only, and all drugs except marijuana for the drug frequency analyses. Variables with theoretical reasons for being associated with the outcome (e.g., treatment arm, need for a BI vs. intensive intervention, usual source of medical care) and other factors from the univariable analyses related to the outcome were included in the multivariable models. Hosmer-Lemeshow testing was used to confirm multivariable logistic model fitness. All analyses were conducted using STATA 13.1.

## RESULTS

### Participant Enrollment and Characteristics

Participant enrollment and retention are depicted in Figure 1. The demographic characteristics of those who enrolled in the study (baseline) and completed the 3-month follow-up were similar (Data Supplement S3, available as supporting information in the online version of this paper). Baseline substance misuse and frequency of substance use or misuse by category also were similar by study arm (Data Supplement S4, available as supporting information in the online version of this paper). The baseline proportions of participants who ever had received drug misuse treatment also were similar (35.5% control vs. 36.6% treatment;  $-1.1\%$ , 95% CI =  $-6.0\%$  to  $8.7\%$ ).

### Change in Drug Use/Misuse

For most of the 12 drug categories, drug use or misuse did decrease from baseline by the 3-month follow-up mark in both study arms (Table 1). However, there were no differences between the two study arms in total drug use or misuse from baseline to 3-month follow-up, whether including or excluding marijuana in the total drug use or misuse calculations. Whether measured on a continuous scale (Table 2) or categorical scale (Data Supplement S5, available as supporting information in the online version of this paper), total drug use and misuse frequency also did not differ by study arm (including or excluding marijuana) by

the 3-month follow-up. For all drugs including or excluding marijuana, total days of drug use and misuse, number of times typically using or misusing drugs per day, and most number of times using or misusing drugs in a day (Data Supplement S6, available as supporting information in the online version of this paper) did not differ by study arm at 3-month follow-up. As shown in the multivariable regression analyses, for all drugs including marijuana, those who qualified for brief instead of a more intensive intervention according to their ASSIST scores at baseline and those currently engaged in drug treatment at the 3-month follow-up were generally more likely to stop or decrease their drug use or misuse (Data Supplement S7, available as supporting information in the online version of this paper). Those requiring brief instead of intensive intervention (as indicated by baseline ASSIST scores) and those who had had received treatment within the past 3 months had reductions in the number of times using drugs and most times using per day. For all drugs excluding marijuana, the results were similar, except those randomly assigned to the treatment arm were marginally more likely to stop their drug use or misuse, as were those who were not white or Hispanic (Data Supplement S8, available as supporting information in the online version of this paper). Data Supplement S9 (available as supporting information in the online version of this paper) portrays the subgroups whose marijuana use/misuse differed at 3-month follow-up. Univariable analysis results are provided in Data Supplement S10 (available as supporting information in the online version of this paper).

### Change in Drug Treatment Utilization

At 3-month follow-up, the difference in proportions of participants (past 3 months vs. baseline) currently receiving treatment, who received treatment in the past 3 months, contacted treatment programs only, or did not receive treatment was similar between study arms (Table 3). As shown in the multivariable regression analyses (Data Supplement S11, available as supporting information in the online version of this paper), participants who qualified for intensive intervention by their ASSIST scores at baseline and those 30 years old and older generally were more likely to currently be in or have received treatment in the past 3 months by the 3-month follow-up mark. This outcome did not differ between treatment arms.

## DISCUSSION

The results of this randomized, controlled trial are disappointing, especially given the need for drug misuse interventions, as shown by the observed high prevalence of illicit and prescription drug use/misuse by adult ED patients in the United States.<sup>3-9</sup> Saitz et al.<sup>36</sup> and Roy-Byrne et al.<sup>37</sup> recently reported similar null findings of a BI designed to affect drug misuse among outpatient clinic patients in Boston, Massachusetts, and Washington State, respectively, as did Woodruff et al.<sup>38</sup> for ED patients in San Diego, California. Our results also appear to support the conclusions reached in a recent commentary by Hingson and Compton<sup>39</sup> who voiced a need to “return to the drawing board” for BIs and drug misuse.

Although we recognize that the findings from these studies in tandem indicate that the BIs employed in these studies were not efficacious, it might be premature to ring the death knell of this type of intervention. It should be noted that all of these studies, including this current

study we report on, involved successful screening for drug misuse and high participation rates. Accordingly, patients in these settings demonstrated strong interest in having their problems recognized and addressed and showed at least an initial willingness to engage in intervention. Further, drug misuse decreased in the treatment and control arms in all studies. Although the decrease might be explained by social desirability and regression to the mean, it might be due to the intensity of the screening and evaluation instruments, which could have served as an intervention by sparking self-recognition and motivation to change.

In this study in particular, engagement in treatment programs after ED enrollment was poor, and higher treatment utilization might have led to better outcomes. The stark reality is that drug treatment programs are few in number and are difficult to gain access to because of limitations in capacity and restrictions of insurance status.<sup>40</sup> Because drug misuse, lower socioeconomic status, and insurance status are strongly related, most of those who need or want drug treatment have great difficulty in accessing it.

Nevertheless, BIs as employed in BIDMED and recently published studies did not confer an advantage over screening and evaluation only. What are the next steps given the results of these studies? Just as pharmacologic therapy for other mental health conditions is paired with behavioral/cognitive approaches, future BIs for drug misuse in these settings might consider the potential synergy of BI with appropriate pharmacologic treatment. Also, more aggressive linkage to care steps along with greater contact with patients after the initial encounter might improve outcomes, given the finding that those who received treatment within the past 3 months were generally more likely to stop or decrease their drug use or misuse. Further, although the results should be interpreted with caution, our study findings suggest more of a benefit for the BI for those needing brief instead of intensive intervention. This interpretation mirrors the conclusions of a systematic review of 16 randomized controlled trials on the effects of BI on reducing alcohol use among adult primary care patients.<sup>41</sup> Saitz<sup>41</sup> concluded that while there was evidence to support the benefit of BI for unhealthy alcohol use, the effects on dependent alcohol users had not been demonstrated. Future randomized controlled trials that focus on these aspects might indicate if an appropriate BI is more efficacious for these two populations. In addition, addressing the myriad social, economic, and psychological factors that potentiate drug use and misuse in a social work approach concurrently with these other approaches might also be more successful than focusing on drug use or misuse and treatment-seeking.

## LIMITATIONS

Patients excluded from the study, and patients at EDs in other locales, might have a dissimilar spectrum of substance use or misuse and socioeconomic and demographic characteristics, and therefore might have responded differently to the BI. Even though confidentiality and fidelity of responses likely was enhanced by the use of the ACASI approach,<sup>42-46</sup> and perhaps by the mention of the certificate of confidentiality, we cannot be assured that all participants answered the questions truthfully. As would be expected, other screening strategies and substance misuse evaluation instruments might yield different results. The study interpretation is also limited by the inability to follow up with all participants. The disadvantaged socioeconomic existence these patients live gives further

evidence to the problems of their drug misuse and challenges of conducting studies such as these. However, we believe that had we limited enrollment to those who could have been more readily tracked (e.g., having a permanent and confirmed telephone number or address), external validity of the findings would have suffered.

## CONCLUSIONS

The brief intervention employed in this randomized controlled trial did not decrease overall drug use or misuse and increase drug treatment services utilization among adult ED patients requiring at least a BI for drug misuse more than screening and evaluation only by 3 months postenrollment. However, the screening and evaluation process with or without the BI might have positively affected these two outcomes, although this cannot be determined definitely by the results of this study. Future research should help determine what role, if any, brief interventions should play in affecting drug use and misuse among ED patients.

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## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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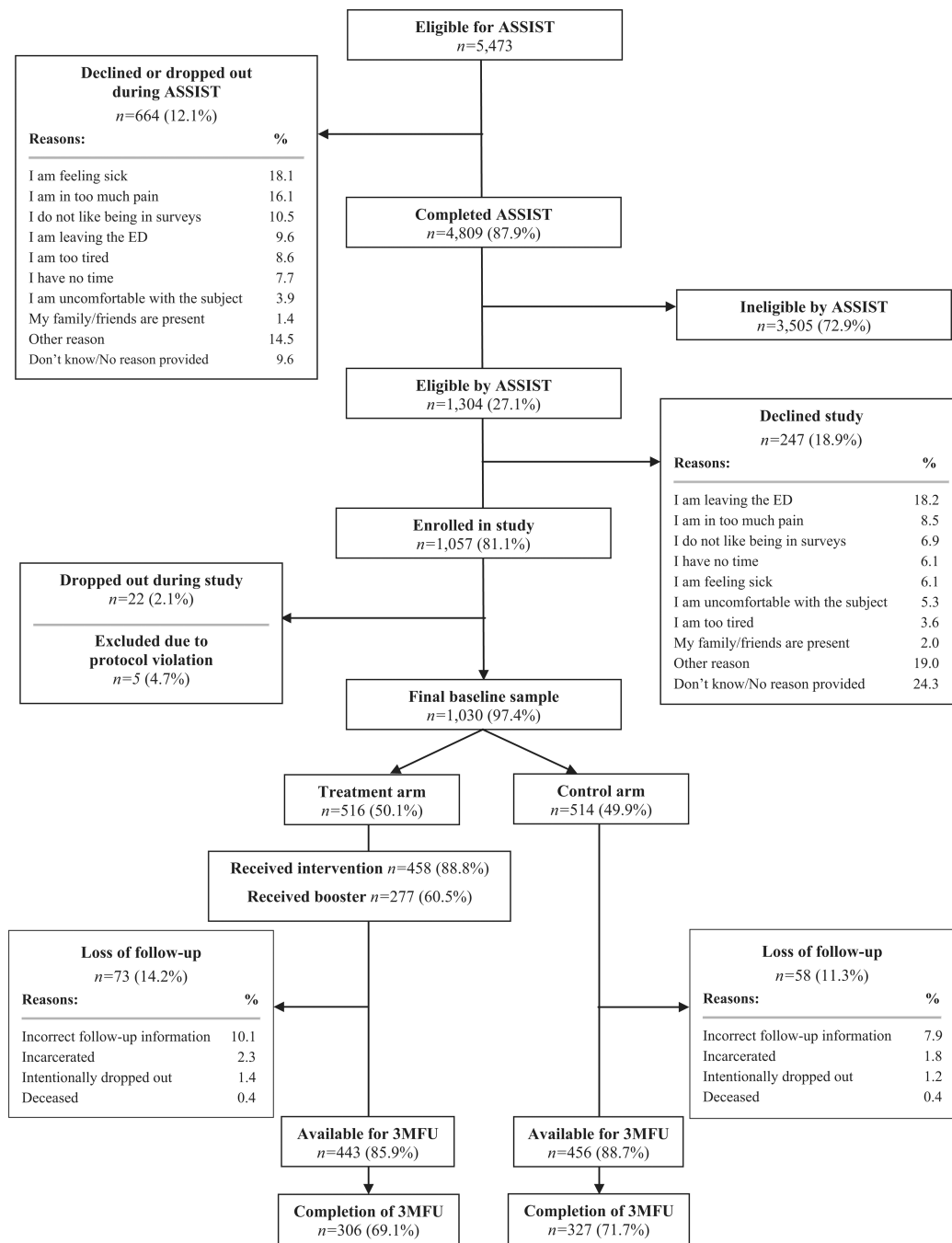
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**Figure 1.** Eligibility assessment and enrollment flow diagram. ASSIST = The Alcohol, Smoking and Substance Involvement Screening Test; 3MFU = Three Month Follow-Up.

**Table 1**

Differences in any Drug Use/Misuse by Study Arm to Baseline Versus 3-Month Follow-up

Substance categories	Control Arm (n = 327)				Treatment Arm (n = 306)			
	Baseline, %	3-Month Follow-up, %	Baseline -3-Month Follow-up, 1% (95% CI)	Baseline, %	3-Month Follow-up, %	Baseline -3-Month Follow-up, 2% (95% CI)	Control Arm - Treatment Arm, 1% - 2% (95% CI)	
Marijuana	82.9	69.0	13.9 (9.0 to 18.0)	81.1	63.7	17.4 (12.0 to 22.0)	-3.5 (-10.0 to 3.0)	
Cocaine or crack	22.7	13.8	8.9 (5.0 to 13.0)	21.3	14.1	7.2 (3.0 to 11.0)	1.7 (-4.0 to 8.0)	
Methamphetamines	5.9	3.7	2.2 (-1.0 to 5.0)	4.3	2.3	2.0 (0.0 to 4.0)	0.2 (-3.0 to 4.0)	
Inhalants	3.4	2.2	1.2 (0.0 to 3.0)	2.6	2.0	0.6 (-1.0 to 3.0)	0.6 (-2.0 to 3.0)	
Hallucinogens	5.6	4.6	1.0 (-2.0 to 4.0)	3.3	2.3	1.0 (-1.0 to 3.0)	0.0 (-3.0 to 3.0)	
Illicit opioids	10.5	6.2	4.3 (1.0 to 8.0)	8.9	8.9	0.0 (-3.0 to 3.0)	4.3 (0.0 to 9.0)	
Gamma hydroxybutyrate (GHB)	0.9	0.6	0.3 (-1.0 to 1.0)	0.3	0.7	-0.4 (-1.0 to 0.0)	-0.1 (-1.0 to 2.0)	
Amphetamines	6.2	5.3	0.9 (-2.0 to 4.0)	6.6	3.0	3.6 (1.0 to 6.0)	-2.7 (-7.0 to 1.0)	
Benzodiazepines	16.3	14.0	2.3 (-2.0 to 7.0)	13.1	8.9	4.2 (0.0 to 8.0)	-1.9 (-8.0 to 4.0)	
Barbiturates	1.5	0.6	0.9 (-1.0 to 3.0)	0.7	0.7	0.0 (-1.0 to 1.0)	0.9 (-1.0 to 3.0)	
Methadone	5.5	4.7	0.8 (-2.0 to 4.0)	5.9	4.9	1.0 (-2.0 to 4.0)	-0.2 (-4.0 to 4.0)	
Prescription opioids	24.6	20.5	4.1 (-1.0 to 9.0)	21.7	15.5	6.2 (2.0 to 10.0)	-2.1 (-9.0 to 4.0)	
Total drugs including marijuana	100.0	84.1	15.9 (12.0 to 20.0)	100.0	77.8	22.2 (18.0 to 27.0)	-6.3 (-13.0 to 0.0)	
Total drugs excluding marijuana	48.6	40.1	8.5 (3.0 to 14.2)	43.5	30.1	13.4 (8.4 to 18.2)	-4.9 (-12.5 to 2.8)	

**Table 2**

Differences in Past 3-Month Drug Use/Misuse Frequency on a Continuous Scale by Study Group to Baseline Versus 3-Month Follow-up

Substance Categories	Control Group (n = 327)			Treatment Group (n = 306)		
	Baseline, x(SE)	3-Month Follow-up, x(SE)	Baseline-3-Month Follow-up, 1x (95% CI)	Baseline, x(SE)	3-Month Follow-up, x(SE)	Baseline-3-Month Follow-up, 2x (95% CI)
Marijuana	3.56 (0.12)	3.09 (0.13)	0.47 (0.28 to 0.68)	3.64 (0.12)	2.88 (0.14)	0.76 (0.54 to 0.99)
Cocaine or crack	0.69 (0.08)	0.44 (0.07)	0.25 (0.12 to 0.38)	0.74 (0.09)	0.46 (0.07)	0.28 (0.13 to 0.44)
Methamphetamines	0.17 (0.04)	0.10 (0.03)	0.07 (-0.02 to 0.16)	0.13 (0.04)	0.08 (0.03)	0.05 (-0.01 to 0.13)
Inhalants	0.11 (0.03)	0.08 (0.03)	0.03 (-0.03 to 0.09)	0.10 (0.04)	0.06 (0.02)	0.04 (-0.02 to 0.12)
Hallucinogens	0.15 (0.04)	0.13 (0.04)	0.02 (-0.08 to 0.12)	0.09 (0.03)	0.06 (0.02)	0.03 (-0.02 to 0.08)
Illicit opioids	0.37 (0.07)	0.23 (0.05)	0.14 (0.00 to 0.27)	0.32 (0.06)	0.38 (0.08)	-0.06 (-0.18 to 0.05)
Gamma hydroxy butyrate (GHB)	0.02 (0.01)	0.03 (0.02)	-0.01 (-0.05 to 0.03)	0.01 (0.01)	0.03 (0.02)	-0.02 (-0.06 to 0.00)
Amphetamines	0.19 (0.04)	0.17 (0.04)	0.02 (-0.09 to 0.12)	0.12 (0.05)	0.11 (0.04)	0.01 (0.01 to 0.17)
Benzodiazepines	0.56 (0.08)	0.47 (0.07)	0.09 (-0.05 to 0.25)	0.44 (0.07)	0.32 (0.06)	0.12 (-0.03 to 0.27)
Barbiturates	0.06 (0.03)	0.03 (0.02)	0.03 (-0.04 to 0.10)	0.02 (0.01)	0.03 (0.02)	-0.01 (-0.06 to 0.02)
Methadone	0.20 (0.05)	0.18 (0.05)	0.02 (-0.08 to 0.12)	0.20 (0.05)	0.22 (0.06)	-0.02 (-0.12 to 0.10)
Prescription opioids	0.87 (0.09)	0.70 (0.08)	0.17 (-0.02 to 0.37)	0.75 (0.09)	0.60 (0.09)	0.15 (0.00 to 0.30)
Total drugs including marijuana	6.94 (0.32)	5.63 (0.31)	1.31 (0.57 to 2.11)	6.63 (0.28)	5.20 (0.34)	1.43 (0.83 to 2.04)
Total drugs excluding marijuana	3.37 (0.32)	2.55 (0.28)	0.82 (0.18 to 1.51)	2.98 (0.28)	2.32 (0.32)	0.66 (0.14 to 1.15)

x = mean; SE = standard error.

**Table 3** Differences in Drug Treatment Utilization at 3-Month Follow-up by Study Group, Baseline Versus 3-Month Follow-up (N = 633)

	Control Group (n = 327)			Treatment Group (n = 306)		
	Baseline, %	3-Month Follow-up, %	Baseline - 3-month Follow-up, 1% (95% CI)	Baseline, %	3-Month Follow-up, %	Baseline - 3-month Follow-up, 2% (95% CI)
Currently receiving treatment	8.6	11.9	-3.4 (-6.7 to 0.3)	8.5	13.7	-5.2 (-8.8 to -1.3)
Received treatment in the past 3 months, but not currently receiving treatment	5.5	5.5	0.0 (-3.1 to 3.1)	6.5	4.6	2.0 (-1.6 to 5.6)
Contacted treatment only in the past 3 months	6.4	2.5	4.0 (1.0 to 7.3)	4.6	2.3	2.3 (-0.3 to 4.9)
No contact, no treatment in past 3 months	79.5	80.1	-0.6 (-4.6 to 3.7)	80.4	79.4	1.0 (-4.2 to 6.2)
						Control Group - Treatment Group, 1% - 2% (95% CI)
						1.8 (-3.5 to 6.8)
						-2.0 (-6.5 to 2.4)
						1.7 (-2.4 to 6.1)
						-1.6 (-8.3 to 5.5)

Note: Participants who responded with “don’t know” or “refuse to answer” were considered to be in the “No contact, no treatment” category at 3 months. The sum of categories at 3-month follow-up should then equal 100% by study arm (e.g., currently receiving treatment, received treatment past 3 months, contacted only, and no contact or treatment in past 3 months. All CIs are calculated using the bootstrap method with 1,000 resamples.