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Evaluation of a brief intervention to reduce the negative consequences of drug misuse among adult emergency department patients☆

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ABSTRACT

Objectives: Determine if a brief intervention (BI) reduces the negative consequences of drug use/misuse among adult emergency department (ED) patients, and identify patients more likely to benefit from the BI.
Methods: This randomized, controlled trial enrolled 1026 18–64 year-old ED patients whose drug misuse indicated a needed for a BI. Differences in total Inventory of Drug Use Consequences (InDUC) scores between the treatment (BI) and control arms (no BI) were assessed every 90 days over a one-year period. Regression models were constructed to identify demographic and clinical factors associated with greater reductions in total InDUC scores.
Results: Although total InDUC scores decreased for both the treatment and control arms, there were no differences in scores between the treatment and the control arms at baseline at each follow-up. In the regression analyses, participants who were not using drugs or received drug treatment in the past 90 days generally had lower InDUC scores at each follow-up.
Conclusions: Although negative consequences decreased in both study arms over time, receiving a BI did not lead to a greater reduction in the negative consequences of drug misuse than not receiving a BI. Of importance in the design of future ED drug misuse interventions, participants who were successful in stopping their drug misuse or receiving drug treatment did show fewer negative consequences of drug use/misuse.

1. Introduction

Validating anecdote and conventional wisdom, recent research has documented a high prevalence of drug use/misuse among adult emergency department (ED) patients in the United States (US; Blow et al., 2011; Wu et al., 2012; Johnson et al., 2013; Hankin et al., 2013; Sanjuan et al., 2014; Macias Konstantopoulos et al., 2014), which in some EDs is greater than the underlying general population that they serve (Bernardino et al., 2014). Despite this high prevalence, few ED patients with drug misuse problems have accessed drug treatment that might help them reduce or eliminate their drug use/misuse and its concomitant negative consequences (Rockett et al., 2003; Breton et al., 2007). In recognition of the high drug use/misuse prevalence and low access to treatment among ED patients, substance misuse researchers and clinicians have advocated for research to further understand how to capitalize on the captive audience of ED patients by identifying those who need treatment, providing initial interventions and encouraging follow up with treatment sources as they are available (Cunningham et al., 2009; Bernstein et al., 2009). Given the many devastating negative financial, health, psychological and social consequences of drug use/misuse, it is important that ED-based interventions not only are effective in reducing or eliminating drug use/misuse, but also have a meaningful impact on decreasing its negative consequences.

Insight into the creation of potential effective drug use/misuse interventions might be drawn from experience with ED-based alcohol use/misuse interventions. Although their use has been recommended (Cunningham et al., 2009), brief interventions (BIs) have had mixed results in reducing or eliminating alcohol consumption among adolescent and ED patients (Nilsen et al., 2007;

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Havard et al., 2008; Yuma-Guerrero et al., 2012; Cochran et al., 2014; Dent et al., 2008; Wojnar and Jakubczyk, 2014; D'Onofrio and Degutis, 2002; Taggart et al., 2013; D'Onofrio et al., 2012, 2008; Sommers et al., 2013; Bernstein et al., 2010; Academic ED SBIRT Research Collaborative, 2010; Newton et al., 2013). Furthermore, researchers have identified either decreases (Longabaugh et al., 2001; Blow et al., 2006) or no impact (Mello et al., 2013; D'Onofrio et al., 2012) of BIs on ED adult patient reported negative consequences of alcohol consumption as compared to control conditions. In a review of applicable studies, Havard et al. (2008) concluded that BIs, as compared to standard care, could reduce (Odds ratio [OR 0.59]) subsequent alcohol-related injuries among ED patients in the succeeding 6–12 months, but found that due to study heterogeneity conducting a meta-analysis on the impact of BIs on decreasing the negative consequences of alcohol use/misuse was not possible.

The impact of BIs on reducing or eliminating drug/misuse among ED patients has been less well studied. In a recent randomized, controlled trial, Bogenschutz et al. (2014) found that a BI with a telephone booster was not more efficacious in reducing self-reported days of drug use over a one-year period than minimal screening only or screening, assessment and referral to treatment. However, there are no published studies that have assessed if BIs can decrease the negative consequences of drug use/misuse among adult ED patients. Further research is needed to examine the efficacy of BIs in reducing drug use/misuse as well as their negative consequences before this approach can be recommended – or not recommended – for ED patients.

This investigation focused on evaluating the efficacy of a BI in reducing the negative consequences of drug use/misuse in a randomized, controlled trial: the Brief Intervention for Drug Misuse for the Emergency Department (BIDMED) study. The primary aim was to ascertain if a BI aimed at reducing drug use/misuse negative consequences among adult ED patients was more efficacious than no BI (study questionnaires only) over a one-year period. The secondary aim was to determine if there were demographic or clinical factors associated with decreases in the negative consequences of their drug misuse, such as severity of drug misuse at baseline enrollment and participation in a drug program, which might identify a sub-group of ED patients for whom a BI or other intervention is more beneficial.

2. Methods

2.1. Study design and setting

BIDMED was a randomized clinical trial conducted over a 30-month period from July, 2010 to December, 2012 in The Miriam Hospital and the Rhode Island Hospital EDs. The hospital institutional review board approved the study.

2.2. Study population

A random sample of ED patients was screened for study eligibility, recruited and enrolled from 8:00 am to midnight seven days a week when research assistants (RAs) were available to conduct the study. Prior to each shift of data collection, the RAs generated lists of the patient rooms in the EDs in random order with replacement using an internet-based random selection program (www.random.org). RAs reviewed the ED electronic medical records (EMRs) to determine the study eligibility of those patients whose rooms were selected. If potentially study eligible, these selected ED patients were interviewed to confirm their study eligibility. Preliminary study eligibility criteria were randomly selected ED patients who were 18–64 years-old; English- or Spanish-speaking; not critically ill or injured; not prison inmates, under arrest, nor undergoing home confinement; not presenting for an acute psychiatric illness; not requesting treatment for substance use/misuse; not intoxicated; and not having a physical or mental impairment that prevented providing consent or participating in the study.

Patients who met preliminary study eligibility were asked to take the Alcohol, Smoking and Substance Involvement Screening Test, Version 3 (ASSIST; Humeniuk et al., 2008) using an audio computer-assisted self-interviewer (ACASI). The adaptation, pilot testing, psychometric assessments and reading level of this and the other study instruments for the BIDMED study has been described previously (Merchant et al., 2014). ED patients with an ASSIST score of $\geq$4 points for any ASSIST drug category or those who ever injected drugs were invited to enroll in BIDMED. Per World Health Organization (WHO) recommendations, an ASSIST score $\geq$4 points for any drug category indicates a need for a BI, whereas a score $\geq$27 points indicates a need for a more intensive intervention (Humeniuk et al., 2008). However, in the BIDMED study, only a BI (or no BI, depending on randomization) was provided as part of the study.

2.3. Study protocol

After enrollment, participants were assigned into one of the two study arms (treatment arm [BI] or control arm [no BI]) using block randomization (1:1 assignment) with a block size of six. Afterwards, participants completed the Inventory of Drug Use Consequences (InDUC) questionnaire (Tonigan and Miller, 2002), and the Treatment Services Review (TSR) questionnaire (Mclellan et al., 1992). The 45-item InDUC provides a total score as well as subscores on five non-overlapping subscales: physical, interpersonal, intrapersonal, impulse control, and social responsibility. We used the InDUC to assess the negative consequences of drug use/misuse over the prior 90 days at baseline and each follow-up period. The TSR is a 5-min questionnaire that participants used to indicate drug treatment programs that they attended or at least contacted within the prior 90 days. The study authors adapted the TSR so that participants could recognize the names of local substance misuse treatment programs and to permit its administration by ACASI.

After completing the study questionnaires, participants randomly assigned to the treatment arm received a BI by a trained interventionist who was not a part of the ED clinical staff. The interventionists 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, each interventionist voice recorded his/her BI sessions and these were reviewed by the psychologist research team members and discussed with the interventionist. Deviations from the BI protocol were addressed and suggestions for improvement were provided at these review sessions.

At 3, 6, 9 and 12 months post-enrollment, participants repeated the baseline questionnaires via the Internet at a location of their choice. RAs sent reminders via email, letter or telephone before each follow-up time point. Participants received gift cards to a local pharmacy for completing the baseline and each successive follow-up.

2.4. BI description

The primary goal of the BI was to motivate participants to reduce or eliminate their drug use/misuse, seek appropriate treatment, and decrease the negative consequences of their drug misuse (See Supplemental material for the BI outline). The BI sessions were approximately 20–30 min in duration and were based on two theoretically driven approaches to behavior change: motivational interviewing (Miller et al., 2002) and the health beliefs model (Rosenstock, 1974). During BI sessions, the interventionist asked each participant about his or her history and experiences with drug