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Short Communication

Heroin refusal self-efficacy and preference for medication-assisted treatment after inpatient detoxification☆

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ABSTRACT

Objective: An individual's self-efficacy to refuse using heroin in high-risk situations is believed to minimize the likelihood for relapse. However, among individuals completing inpatient heroin detoxification, perceived refusal self-efficacy may also reduce one's perceived need for medication-assisted treatment (MAT), an effective and recommended treatment for opioid use disorder. In the current study, we examined the relationship between heroin refusal self-efficacy and preference for MAT following inpatient detoxification.
Method: Participants (N = 397) were interviewed at the start of brief inpatient opioid detoxification. Multiple logistic regression was used to estimate the adjusted association of background characteristics, depressed mood, and perceived heroin refusal self-efficacy with preference for MAT.
Results: Controlling for other covariates, depressed mood and lower perceived refusal self-efficacy were associated with a significantly greater likelihood of expressing preference for MAT (versus no MAT).
Conclusions: Perceived ability to refuse heroin after leaving detox is inversely associated with a heroin user's desire for MAT. An effective continuum of care model may benefit from greater attention to patient's perceived refusal self-efficacy during detoxification which may impact preference for MAT and long-term recovery.

1. Introduction

From 2002 to 2013, the number of Americans addicted to heroin doubled and heroin-related overdose deaths nearly quadrupled (Hedegaard et al., 2015; SAMHSA, 2014). High rates of readmission following heroin detoxification, early relapse, and fatal overdose (Smyth et al., 2010; Wines et al., 2007) emphasize the need for continuity of treatment after discharge. Opioid dependent patients who undergo detoxification often do not transition to medically-assisted treatment (MAT) (e.g., methadone, buprenorphine or vivitrol), the most efficacious therapy for preventing relapse and maintaining long-term abstinence (see Connery, 2015 for review; Volkow et al., 2014). Therefore, gaining a better understanding of individual-level factors that may limit the post-detoxification transition to MAT could have public health benefits.

Social cognitive theory posits that perceived self-efficacy, or the ability to successfully deal with difficult situations to achieve desired outcomes, is the most proximal predictor of behavioral change (Bandura, 1977, 1998). While self-efficacy is among the most robust predictors of positive substance use treatment outcomes (see Kadden and Litt, 2011 for review), few studies have investigated the role of self-efficacy among heroin users initiating treatment. Heroin dependence is associated with the lowest levels of refusal self-efficacy of all drug classes (El-Sheikh Sel and Bashir, 2004), and perceived self-efficacy to resist urges to use heroin has been shown to predict abstinence (Ciraulo et al., 2003; Senbanjo et al., 2009). Although there is theoretical support that one's self-efficacy to resist substance use impacts motivation to change and personal goal setting (Bandura, 1998), no study to date has examined the association between perceived refusal self-efficacy and desire for treatment among heroin users.

1.1. Current study and hypotheses

We hypothesized that lower refusal self-efficacy would be associated with preference for MAT (as opposed to no MAT) following detoxification. Major depression and heroin use are highly comorbid (Havard et al., 2006; Teesson et al., 2015), depressive symptoms are associated with lower levels of perceived refusal self-efficacy (Senbanjo et al.,

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2009) and greater compulsion to use heroin (Lee et al., 2016), and major depression is a risk factor for heroin relapse (Hasin et al., 2002; Samet et al., 2013). Therefore, our analysis controlled for depressed mood as well as demographic and drug use factors that are prevalent among heroin users and MAT patients, including unemployment status (Becker et al., 2008; Fischer et al., 2010) and criminal justice involvement (Hakansson and Berglund, 2012; Rastegar et al., 2006).

2. Method

2.1. Recruitment

Between December 2015 and August 2016, consecutive persons seeking inpatient opioid detoxification were approached at the time of admission to Stanley Street Treatment and Resources, Inc. (SSTAR) in Fall River, Massachusetts to participate in a survey research study. SSTAR's detoxification program provides evaluation and withdrawal management using a methadone taper protocol, individual and group counseling, and aftercare case management, and has a mean length-of-stay of 4.9 days. This length of stay is typical of short-term inpatient detoxification units in our region.

Of patients admitted to SSTAR during the recruitment period, 497 were opioid users who were 18 years or older, English-speaking, and able to provide informed consent as approved by the Butler Hospital Institutional Review Board. Twenty-three refused study participation or were discharged before staff could interview them. The remaining 474 persons completed a non-incentivized, face-to-face interview administered by non-treating research staff that required approximately 15 min. Of these, 429 (90.5%) were detoxing from heroin. The 397 participants who provided responses to all the measures of interest constitute the study sample.

2.2. Measures

In addition to age, sex, race/ethnicity, past 30-day injection drug use, and prior opioid detox experience, the following variables were assessed:

2.2.1. Legal involvement

Respondents were asked about their current legal involvement. Those responding “none” were coded as having no legal involvement and all other responses (“on probation,” “on patrol,” “on pretrial release,” or “incarceration”) were coded as having pending legal issues.

2.2.2. Employment status

Respondents were given options to describe their current work status. Those reporting “full time (> 35 h per week)” or “part-time (< 35 h per week)” work status were coded as employed while students and those “currently unemployed” or “receiving disability” were coded as unemployed.

2.2.3. Depressed mood

Depressive symptoms were assessed using the two-question Patient Health Questionnaire (PHQ-2; Kroenke et al., 2009) that assesses the frequency of depressed mood or anhedonia over the past two weeks. A score of 3 or greater was defined as depressed mood.

2.2.4. Prior MAT experience

Three questions were used to measure participants' prior experience with MAT. Participants were asked if they have ever been prescribed buprenorphine (Suboxone), been prescribed Vivitrol, or enrolled in a methadone maintenance program. Each question provided a brief summary of the respective MAT (e.g., “Vivitrol is a medication-assisted treatment. It's an injection (shot) of naltrexone that the patient receives once per month. Vivitrol works by blocking the “high” one might experience from opiate use”). Participants responding “yes” to at least one of the three medications were coded as having prior MAT experience.

2.2.5. Preference for medication-assisted treatment

Participants were asked, “If you were to start a medication after you leave SSTAR, which medication are you most likely to choose?” Response options were methadone, suboxone, vivitrol shots or none. Participants responding “none” were defined as having a preference for no MAT as part of the aftercare treatment plan; those choosing a medication were coded as having a preference for MAT. Participants were also asked, “If you had unlimited treatment options (and all were free), which one would work best for you when you leave here?” Among the 87 participants who did not want MAT after discharge, 39 (44.8%) reported they were not interested in any post-discharge treatment, 11 (12.6%) wanted residential treatment, 16 (18.4%) wanted outpatient counseling, 21 (24.1%) wanted NA/AA meetings only.

2.2.6. Refusal self-efficacy

A one-item refusal self-efficacy question was adopted from a three-item self-efficacy measure used by Barta et al. (2009). Participants were asked to think about the day they leave treatment and respond to the statement, “I will be able to refuse (heroin) even if it is offered to me” using four response options: *not at all*, *slightly true*, *somewhat true*, and *very true*.

2.3. Analysis plan

We present descriptive statistics to summarize the characteristics of the sample. Unadjusted associations of background characteristics and refusal self-efficacy with preference for MAT after discharge from detox were evaluated using the Pearson χ^2-test of independence and t-tests for differences in means. Logistic regression was used to estimate the adjusted associations of background characteristics and refusal self-efficacy with preference for MAT. We used a difference in likelihood ratio chi-square test to compare models parameterizing the effect of refusal self-efficacy as linear versus unordered categorical. To further evaluate the model, we report BIC and AIC statistics for the full and constant only model. Models with small BIC and AIC statistics are preferred. Additionally, we report the area under the receiver operating characteristic curve (AROC). For any randomly selected pair of observations (1 from each group) the AROC gives the probability of correctly identifying group membership based on the model; a value of 0.5 indicates the model is no better than chance.

3. Results

Participants averaged 32.2 (± 8.56) years of age, 72.8% were male, and 8.8% were Hispanic (Table 1). Most (87.2%) were White, 3.8% were Black, and 9.1% were of mixed or other racial origins. Seventy-four (18.6%) were employed part- or full-time and 36.8% had pending legal involvement in the legal system. About 64.5% screened positive for depressed mood on the PHQ-2, 84.9% had a history of prior detox, and 68.0% had previously been prescribed some form of MAT for opioid dependence. In t-tests, persons preferring MAT (n = 310; 78%) did not differ significantly from those who did not want MAT (n = 87; 22%) with respect to age, gender, ethnicity, race, employment status, legal status, recent injection drug use, history of prior detox, or history of prior MAT. A significantly (χ^2 = 7.92, p = 0.005) higher percentage of persons expressing a preference for MAT (68.1% vs 51.7%) screened positive for depressed mood.

Adjusting for covariates included in the multivariate model, persons screening positive for depressed mood on the PHQ-2 had a significantly higher likelihood (OR = 1.91, 95%CI 1.15; 3.15, z = 2.52, p = 0.012) of expressing a preference for MAT than those who screened negative for depressed mood (Table 2). Each one category increase in refusal