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Reasons for Benzodiazepine Use Among Persons Seeking Opioid Detoxification

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ABSTRACT

Background: Over the past decade, patients admitted to addiction treatment programs have reported increasing rates of concurrent opioid and benzodiazepine (BZD) use. This drug combination places individuals at high risk for accidental overdose. Little is known about reasons for BZD use among individuals seeking treatment for opioid use disorders.
Methods: We surveyed consecutive persons initiating inpatient opioid detoxification and identified 176 out of 438 who reported BZD use in the past 30 days and/or had a positive toxicology.
Results: Forty percent of persons surveyed used a BZD in the month prior to admission, and 25% of these met criteria for BZD dependence (DSM IV). BZD users averaged 32.0 years of age, 63.6% were male, 85.2% used heroin, and reported, on average, 13.3 (±11.2) days of BZD use during the past month. Alprazolam (Xanax) was the most commonly used BZD (52%), and buying it on the street the most common source (48%). The most commonly reported reason for BZD use was 'to manage anxiety' (42.6%), followed by 'to get or enhance a high' (27.7%), 'to help with sleep' (11.4%), and 'to decrease opioid withdrawal' (10.2%). The most common reason for BZD use was significantly associated ($p < .001$) with most likely source of BZDs, with persons who got their BZDs from a prescriber (23%) more likely to report BZD anxiety as their primary reason for use, while persons who bought BZDs on "the street" (48%) had the highest likelihood of reporting using BZD to get or enhance a high. Participants using BZDs most commonly for anxiety did not endorse lower anxiety than those using BZDs for other reasons.
Conclusions: Two in five persons seeking detoxification for an opioid use disorder used a BZD in the prior month. Anxiety was the most common reason patients reported using a benzodiazepine, but they also reported using BZDs to enhance a 'high' and manage opioid withdrawal. Evidence-based discussions about the risks of combining BZDs and opioids, and alternatives to BZDs should be a high priority in detoxification settings.

1. Introduction

Use of benzodiazepines (BZDs) is prevalent in patients with opioid use disorders (Bleich et al., 1999; Brands et al., 2008; Lavie, Fatseas, Denis, & Auriacombe, 2009), but there has been a dramatic increase in concurrent use in the recent past. Patients admitted to addiction treatment programs reporting combined use of opioids and BZDs increased 570% between 2000 and 2010 (Substance Abuse and Mental Health Services Administration Center for Behavioral Health Statistics and Quality, 2012). Concurrent use of benzodiazepines in persons receiving opioid replacement therapy such as buprenorphine or methadone can be as high as 70% (Nielsen, Dietze, Lee, Dunlop, & Taylor, 2007).

Serious health problems may arise for people using opioids and BZDs in combination. BZDs' sedative actions target the $GABA_A$ receptor and adverse effects depend on the presence of impaired hepatic function, and complex drug–drug interactions (via CYP system metabolism), which can produce increased opioid serum concentrations (Jann, Kennedy, & Lopez, 2014). Concurrent use of both can slow heart rate and breathing, and increases the risk of accidental overdose (Gudin, Mogali, Jones, & Comer, 2013; Jones, Mogali, & Comer, 2012; Park, Saitz, Ganoczy, Ilgen, & Bohnert, 2015). According to the Centers for Disease Control and Prevention (CDC), opioid overdose related deaths nearly quadrupled between the years 1999 to 2011 (Volkow, Frieden, Hyde, & Cha, 2014); an estimated 31% of opioid related deaths were associated with concurrent BZD use (Chen, Hedegaard, & Warner, 2014). Among veterans prescribed

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opioids, BZD use is associated with greater mortality in a dose-dependent fashion (Park et al., 2015).

Few studies to date have explored the reasons why persons with opioid use disorders use benzodiazepines. Several studies have found that patients receiving chronic opioid agonist treatment (OAT) often use BZDs to help with anxiety and sleep (Gelkopf, Bleich, Hayward, Bodner, & Adelson, 1999; Posternak & Mueller, 2001; Vogel et al., 2013). Other work in OAT populations has suggested patients in methadone maintenance treatment take BZDs to get high (Chen et al., 2011; Fatseas, Lavie, Denis, & Auriacombe, 2009; Gelkopf et al., 1999; Iguchi, Handelsman, Bickel, & Griffiths, 1993). Fewer studies exploring reasons for use have focused on treatment-seeking opioid users. Inciardi et al. reported that individuals using BZDs non-medically, may use BZDs to decrease the discomfort of withdrawal in situations when opioids are unavailable, as BZDs may be easier or less expensive to obtain than opioids in certain regions (Inciardi, Surratt, Cicero, & Beard, 2009).

Short-term inpatient medical detoxification is a common initial site of care for treatment-seeking persons with opioid use disorders (Bailey, Herman, & Stein, 2013; Carrier et al., 2011; Mark, Dilonardo, Chalk, & Coffey, 2002; Stein, Anderson, Thurmond, & Bailey, 2015; Substance Abuse and Mental Health Services Administration, 2004), and offers a window on BZD use among opioid users in the community prior to seeking care. The purposes of this study were 1) to report the prevalence of BZD use among patients seeking treatment for an opioid use disorder, 2) to explore the most common reasons for and sources of BZDs in this population, and 3) to determine if these reasons were associated with BZD use severity or measures of anxiety and depression.

2. Methods

2.1. Recruitment

Between September 2014 and May 2015, persons seeking opioid detoxification were approached within the first 24 hours of admission to Stanley Street Treatment Addiction and Recovery, Inc. (SSTAR) in Fall River, Massachusetts to participate in a survey research study. SSTAR's program, one of the largest in Southeastern New England, has 38 beds and is a 24-hour medically supervised treatment facility that provides evaluation and withdrawal management with a mean length-of-stay of 4.9 days using a methadone protocol (as well as individual and group counseling and case management).

Of patients admitted to SSTAR during the recruitment period, 452 were opioid users who were 18 years or older, English-speaking, and able to provide verbal informed consent as approved by the Butler Hospital Institutional Review Board. Fourteen refused study participation or were discharged before staff could interview them. The remaining 438 persons completed a face-to-face interview and were not incentivized. All surveys were administered by non-treating research staff and required approximately 15 minutes. Persons were defined as BZD users if they responded to the question, "How many days in the last 30 have you used benzos (for instance, Ativan, Klonopin, Librium, Xanax, Valium)?" by reporting at least one day of use, or if they were positive for BZD on urine toxicological testing at entry to detoxification. This left a final sample of 176 for the current analysis.

2.2. Measures

Sample descriptors included age, gender, race/ethnicity, employment (part- or full-time vs. unemployed), and years of education. Regarding previous opioid treatment, we asked if participants had ever been in opioid detoxification in the past, or had ever received methadone or been prescribed buprenorphine. Participants were classified as recent cocaine users if they reported any use during the past 30 days. Participants also reported frequency and usual quantity of alcohol use during the past 30 days; hazardous drinking was defined as >7 drinks/week for females or >14 drinks/week for males (National Institute on Alcohol Abuse and Alcoholism, 2005). Participants were asked they were receiving professional treatment for depression or for anxiety, and if they were, what type they were receiving (counseling, medication, both counseling and medication). We asked "Which is the benzo you use most often?" Responses included Klonopin, Librium, Xanax, Valium, and 'I don't know.' We also asked, "Where were you most likely to get the benzos that you used in the last 30 days?" Responses included: "bought them from someone else such as a dealer or on the street," "bought or borrowed from a friend," and "prescribed to you by a physician." We asked participants: "Benzos can be used in lots of ways. Please indicate how often in the last month you have used benzos for the following reasons." The list of reasons was derived from previous literature (Chen et al., 2011; Fatseas et al., 2009; Gelkopf et al., 1999; Lintzeris & Nielsen, 2010) and included "To help you sleep," "Because they make you high," "To help manage your pain," "To help manage your anxiety," "To help manage your depression," "To balance the effects of opiates," "To balance the effects of alcohol," "To balance the effects of cocaine," "To help you drink less alcohol," "To increase the high of opiates," "To decrease the effects of opiate withdrawal," or "Other reasons (please list)." The response options included 1 = never/almost never, 2 = sometimes, 3 = often, and 4 = always/almost always. We then asked, "What is the most common reason that you use benzos?" Depressive and anxiety symptoms were measured using the Patient Health Questionnaire (PHQ)-4 (Lowe et al., 2010). Scores potentially range from 0–6 on the PHQ-2 Depression and PHQ-2 Anxiety Indices; persons screening positive for depression or anxiety have scores of 3 or higher on each, respectively. BZD use severity was measured using the Severity of Dependence Scale (Gossop et al., 1995). This 5-item scale (each with a potential range 0–3) had high internal consistency reliability (alpha = .89). A score of ≥7 is considered the cut-off for dependence (Gossop et al., 1995).

2.3. Analytical methods

We present descriptive statistics to summarize the characteristics of the sample. T-tests for differences in means and χ^2-tests for differences in frequencies were used to compare males and females with respect to background characteristics, substance use behaviors, mood, and most common reason for BZD use. Because of non-normal distributions and small expected cell sizes, we used the nonparametric Kruskal–Wallis one-way ANOVA on ranks and Fisher's exact test to compare benzodiazepine dependence severity, anxiety and depression by most common reason for BZD use.

3. Results

Participants averaged 32.0 (±8.8) years of age, 63.6% were male, 88.6% were non-Latino Caucasian, and mean educational attainment was 12.0 (±1.8) years (Table 1). Eighty-two (46.6%) had seen a primary care physician in the past year, 68.8% reported a prior detox, and most (85.2%) were detoxing from heroin. On average they reported 13.3 (± 11.2) days of BZD use during the past month, the mean BZD severity dependence score was 3.8 (±4.7), and 44 (25.0%) met screening criteria for BZD dependence. Over two-thirds (71.6%) reported injection drug use, 45.5% reported cocaine use, 39.8% met NIAAA criteria for hazardous drinking, and 80.1% and 75.0% met screening criteria for depression and anxiety, respectively, on the PHQ-4. About 39.2% had a history of methadone maintenance treatment and 46.6% of buprenorphine treatment.

Alprazolam (52.3%), clonazepam (30.1%), and diazepam (10.8%) were the most commonly reported benzodiazepines (Table 1). Nearly half (48.3%) of respondents reported purchasing on the street, 28.4% reported buying or borrowing from friends, and 23.3% said a prescription from a physician was their most likely source of BZDs. "To help manage anxiety" was the most frequently cited (42.6%) primary reason for BZD use; 24.4% stated they used BZDs to get or enhance a high, 11.4% said they used BZDs to help them sleep, and 10.2% said they used BZDs to help manage opioid