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Brief article

Smoking cessation treatment among office-based buprenorphine treatment patients

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ABSTRACT

Opioid-dependent patients smoke at high rates, and office-based buprenorphine treatment provides an opportunity to offer cessation treatment. We examined tobacco use and smoking cessation treatment patterns among office-based buprenorphine treatment patients. We reviewed records of 319 patients treated with buprenorphine from 2005 to 2010. We examined smoking status, cessation medication prescriptions, and factors associated with receipt of cessation prescriptions. Mean age was 43.9 years; most were men (74.2%) and Hispanic (70.9%). At buprenorphine initiation, 21.9% had no documentation of smoking status, while 67.4% were current, 10% former, and 0.9% never smokers. Of current smokers, 16.8% received smoking cessation prescriptions. Patients retained (vs. not retained) in buprenorphine treatment were more likely to receive smoking cessation medications (26.3% vs. 11.2%, $p < 0.005$). We observed a high tobacco use prevalence among buprenorphine patients, and limited provision of cessation treatment. This is a missed opportunity to impact the high tobacco use burden in opioid-dependent persons.

1. Introduction

Opioid-dependent patients have a higher tobacco use prevalence than the general population. In methadone-maintained patients, tobacco use ranges from 77% to 92% (Clemmey, Brooner, Chutuape, Kidorf, & Stitzer, 1997; Nahvi, Richter, Li, Modali, & Arnsten, 2006; Richter, Gibson, Ahluwalia, & Schmelzle, 2001). Research evaluating tobacco use prevalence in buprenorphine-treated patients is sparse, but available estimates range from 66% to 93% (Chisolm et al., 2013; Harrell, Montoya, Preston, Juliano, & Gorelick, 2011; Pajusco et al., 2012), on par with estimates among patients in outpatient substance abuse treatment settings (Guydish et al., 2011). This is in marked contrast to the 19% prevalence in US population-based surveys (Centers for Disease Control and Prevention, 2012), and has corresponding health consequences, with death rates of opioid-dependent smokers 4 times that of non-smokers (Hser, McCarthy, & Anglin, 1994; Hurt et al., 1996).

Despite the high tobacco burden in opioid-dependent patients, there is limited smoking cessation treatment provision in substance abuse treatment programs (Friedmann, Jiang, & Richter, 2008; Hunt, Cupertino, Garrett, Friedmann, & Richter, 2012; Knudsen, Studts, Boyd, & Roman, 2010). Evidence-based guidelines recommend that primary care providers systematically assess and treat tobacco use (Fiore et al., 2008). Buprenorphine treatment is offered in the setting of primary care treatment, and buprenorphine treatment patients are more likely than methadone patients to be employed (Sullivan, Chawarski, O'Connor, Schottenfeld, & Fiellin, 2005), potentially eliminating important barriers in access to smoking cessation treatment. Office-based buprenorphine treatment in primary care settings can thus increase provision of smoking cessation treatment among opioid-dependent patients, however, this has not been described.

The goal of this study is to describe tobacco use and cessation treatment patterns in patients receiving office-based buprenorphine treatment, and to explore factors associated with smoking cessation treatment. This will help to guide development of interventions to address tobacco use for opioid-dependent persons receiving office-based buprenorphine treatment.

2. Materials and methods

2.1. Overview

We conducted a retrospective chart review of all patients who initiated buprenorphine treatment in an urban community health center to examine their smoking patterns and smoking cessation treatment.

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2.2. Setting

We reviewed records of all patients receiving buprenorphine treatment in a community health center, 2005–2010, immediately after a buprenorphine treatment program was established. The buprenorphine treatment program has been previously described (Cunningham et al., 2008), and is located in a neighborhood in the Bronx, NY with 57% Hispanic and 39% Black residents, a 20% prevalence of tobacco use, and high rates of premature death (Olson, Van Wye, Kerker, Thorpe, & Frieden, 2006). Briefly, 6 general internists work closely with a clinical pharmacist to provide buprenorphine maintenance treatment in the context of general primary care. Buprenorphine treatment typically consists of monthly visits with a primary care physician, in which patients address general health issues, and receive buprenorphine prescriptions, urine toxicology tests, and counseling. Social workers are also available to all health center patients, and can provide referral to intensive substance abuse treatment if necessary.

To receive buprenorphine treatment at the health center, patients had to be 18 years or older, opioid dependent per Diagnostic and Statistical Manual IV criteria, and insured by a health plan accepted at the health center or willing to pay for treatment on a sliding scale. Individuals were excluded from buprenorphine treatment if they were: 1) hypersensitive to buprenorphine or naloxone, 2) pregnant, 3) alcohol or benzodiazepine dependent, 4) with transaminase levels greater than 5 times normal, 5) diagnosed with severe, untreated psychiatric illness, or 6) taking more than 60 mg of methadone daily in the past month.

Smoking status was assessed on a standard form as part of the health center initial or annual history and physical exam or during a detailed substance use history review conducted prior to buprenorphine initiation. Smoking cessation treatment was offered to buprenorphine patients on an ad-hoc basis during routine clinical care. There were no specific clinical protocols in the buprenorphine treatment program regarding smoking assessment or cessation treatment.

2.3. Study sample

Patients who initiated buprenorphine treatment at the community health center between December 2005 and June 2010 were identified from medical records and included in this analysis. The affiliated IRB deemed this study exempt.

2.4. Data collection

We extracted data on smoking status, buprenorphine and smoking cessation medication prescriptions, visits, urine toxicology tests, and socio-demographic characteristics from medical records.

Smoking status was determined by a clinician who reviewed the standardized buprenorphine treatment intake form, the health center's standardized initial/annual exam forms, free text written notes, and problem and medication lists. We obtained data about smoking status at the time of buprenorphine initiation (+/− 1 month). Smoking status was categorized as current smoker, former smoker, never smoker, or unknown smoking status. Current smokers were those whose medical records included: 1) diagnosis of smoker or nicotine dependence on the problem list; 2) "current smoker" box checked on standardized clinical forms; 3) free text in medical notes indicating current smoking (e.g., description of the number of cigarettes smoked per day); or 4) prescriptions for smoking cessation medications. Former smokers were those with 1) a diagnosis of nicotine dependence in remission on the problem list; 2) "former smoker" box checked on standardized clinical forms; or 3) free text in medical notes indicating the patient quit smoking (e.g., a description of a specific time period since the patient quit smoking). Never smokers were those with none of the criteria for current or former smokers, and with never smoking indicated in the standardized clinical forms or free text in medical notes. Unknown smoking status was assigned if these data did not specifically indicate whether a patient was a current, former or non-smoker.

To estimate treatment effects, we reassessed smoking status in patients prescribed with smoking cessation treatment in all clinical notes over the 6 months following the date of prescription of smoking cessation medication. Smoking status was categorized as abstinent (i.e., documentation of self-reported abstinence without subsequent mention of smoking), relapsed (i.e., documentation of smoking resumption following initial abstinence), continued smoking (i.e., documentation of continued smoking without cessation), or not recorded. If smoking status was documented following cessation medication prescription, but not documented in subsequent visits, the last observation was carried forward. Although this approach may not capture relapse following initial cessation or delayed tobacco cessation, similar methods have been used in prior studies (Nahvi, Wu, Richter, Bernstein, & Arnsten, 2013).

Prescriptions for buprenorphine, buprenorphine/naloxone and all FDA-approved smoking cessation medications were extracted from the medical center's electronic prescription database. The date of the first buprenorphine prescription was used as the date of buprenorphine treatment initiation. Smoking cessation medications included prescriptions for: varenicline, bupropion (for smoking cessation), and nicotine replacement therapy (patch, gum, inhalers, lozenges, and nasal spray). We included smoking cessation medications prescribed from 6 months prior to 6 months after the date of buprenorphine treatment initiation.

Urine toxicology test results were extracted from medical records, including those to assess opiates, methadone, oxycodone, benzodiazepines, cocaine, cannabinoids, and amphetamines. We determined baseline drug use from the urine toxicology test closest to the date in which buprenorphine treatment was initiated, including up to 90 days prior to and 7 days after treatment initiation.

Treatment retention was determined by extracting buprenorphine prescription and visit data during the 210 days after initiating buprenorphine treatment. We categorized treatment retention as follows: 1 month retention includes patients with either a medical visit or active buprenorphine prescription between day 30–60, 3-month retention includes patients retained at 1 month plus a visit or prescription between day 90–120, and 6-month retention includes patients retained at 1 and 3 months plus a visit or medication between day 180–210.

Socio-demographic characteristics were extracted from the medical center's administrative database, and included: age, gender, race/ethnicity, primary language, and insurance status.

2.5. Analyses

We describe patients' socio-demographic, smoking, and buprenorphine treatment characteristics using simple frequencies. In exploratory analyses, we examined socio-demographic and clinical factors associated with receipt of smoking cessation medications using chi-square tests. These included age, gender, race/ethnicity, primary language (English vs. Spanish), insurance status (public vs. private vs. none), and baseline toxicology tests indicating cocaine or benzodiazepine use. Analyses were conducted in STATA v.11 (College Station, TX).

3. Results

Of the 319 patients who initiated buprenorphine treatment, the mean age was 43.9 years, and the majority were male (74.2%), Hispanic (70.9%), and had public insurance (56.5%) [Table 1]. At buprenorphine initiation, 61.8% had toxicology tests positive for opiates, methadone or oxycodone; 24.3% for cocaine; 24.3% for marijuana, and 9.8% for