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The relationship between treatment accessibility and preference amongst out-of-treatment individuals who engage in non-medical prescription opioid use

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ABSTRACT

Background: Relatively little is known regarding the perception of medication-assisted treatments (MATs) and other treatment options amongst individuals that engage in non-medical prescription opioid use. This study surveyed out-of-treatment individuals that misuse opioids to better understand how perceived access to treatment shapes treatment preference.

Methods: Participants (n = 357) were out-of-treatment adults registered as workers on the Amazon Mechanical Turk platform who reported current non-medical prescription opioid use. Participants were surveyed regarding demographics, insurance status, attitudes toward opioid use disorder (OUD) treatments, and self-reported symptoms of OUD.

Results: Participants who were male, did not have health insurance, and knew that counseling-type services were locally available were most likely to first attempt counseling/detox treatments ($\chi 2(6) = 30.19$, $p < 0.001$). Participants who met criteria for severe OUD, used heroin in the last 30 days, knew their insurance covered MAT, and knew of locally available MAT providers were most likely to first attempt MAT ($\chi 2(4) = 26.85$, $p < 0.001$). Participants with insurance and who knew of locally available physicians were most likely to attempt physician visits without the expressed purpose of MAT ($\chi 2(3) = 24.75$, $p < 0.001$).

Conclusion: Out-of-treatment opioid users were particularly interested in counseling-based services and medical care that could be attained from a primary-care physician. Results suggest that insurance coverage and perceived access to OUD treatment modalities influences where out-of-treatment opioid users might first seek treatment; understanding the factors that shape treatment preference is critical in designing early interventions to effectively reach this population.

1. Introduction

More than 12 million Americans misused prescription opioids in 2015 (Center for Behavioral Health Statistics and Quality, 2016). Misuse of prescription opioids has led to increased prevalence of opioid use disorder (OUD) (Dart et al., 2015; Jones, 2017) and opioid-related deaths (National Center for Health Statistics, 2015; Compton et al., 2016; Braden et al., 2017). In response to the opioid epidemic, scientific and medical communities have advocated for increased availability of evidence-based, pharmacotherapeutic approaches that have been empirically shown to mitigate the incidence of opioid related death and disease transmission (Volkow et al., 2014; Blum et al., 2016). Pharmacotherapeutic options for OUD treatment, often referred to as medication-assisted treatments (MATs), include opioid agonist/partial agonist maintenance treatments to manage opioid withdrawal and cravings such as buprenorphine (Ling et al., 1998) and methadone (Sees et al., 2000), or opioid antagonist treatment to decrease relapse potential such as oral or extended-release (XR) injectable naltrexone (Krupitsky et al., 2011). MATs are often, but not always, layered with other treatment options such as counseling and 12-step programs. Alternatively, many treatment-seeking individuals with OUD elect not to utilize MATs, relying solely on “abstinence-based” approaches or non-specific forms of substance use treatment (e.g., counseling).

The factors impacting individual preferences for various OUD treatment options are not fully understood. Initiation of MAT might depend on the point of first contact, as individuals with OUD are most often inducted onto MAT in outpatient settings (Polydorou et al., 2016; Sullivan et al., 2017). However, there have been conflicting reports regarding patient preference for MAT, as one study noted that 63% of patients in a residential setting prefer sustained MAT (particularly XR

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naltrexone) (Bailey et al., 2013), while another study reported that more than half of OUD patients undergoing detoxification prefer continued residential, drug-free counseling, or 12-step based recovery over agonist maintenance (Stein et al., 2015b).

Non-MAT based OUD treatment options are frequently provided as part of a general substance use disorder treatment center that is not solely focused on OUD treatment; this treatment path usually includes some combination of residential treatment (including detoxification), individual counseling, and/or 12-step groups (Zijlstra et al., 2009). Non-MAT approaches have had varying degrees of success for OUD treatment. For example, a large clinical trial examining buprenorphine in persons with prescription OUD found that individualized manual-based counseling had no additional effect on treatment outcome relative to standard medical management (Weiss et al., 2011). Alternatively, a study with young adults reported that patients meeting criteria for opioid dependence provided fewer positive urine drug screens following 12-step based residential treatment compared to those without opioid dependence (Schuman-Olivier et al., 2014). Finally, a retrospective study of physicians with OUD reported that a combination of residential treatment, intensive outpatient (IOP), counseling, and long-term 12-step participation without agonist therapy promoted extended (> 4 year) opioid abstinence in 77% of participants (Merlo et al., 2016).

There is a major gap in our knowledge of treatment preference among individuals who are actively engaged in non-medical prescription opioid use, but have yet to initiate treatment for OUD. Practical factors such as treatment affordability, geographic location, and OUD severity, likely affect individual treatment preferences (Peterson et al., 2010; Stein et al., 2015a). Understanding the point of first contact for OUD treatment could help inform targeted efforts to identify persons with OUD in different treatment modalities, and improve efforts to educate OUD users about unfamiliar treatment options. Together, this would help expand treatment access for OUD patients and combat the opioid epidemic. To address these gaps in knowledge, we surveyed individuals who reported current non-medical use of prescription opioids but were not currently in treatment to better understand their perceptions of treatment options and barriers to treatment. This study hypothesized that demographics, perceived treatment accessibility, and opioid use severity would affect preference for various types of OUD treatment, and that perceived access to treatment (e.g., insurance coverage, local availability, and price) would inform which treatment modalities this population would use first to seek help for OUD.

2. Methods

2.1. Participants

The sample was recruited between November 2016 and January 2017. Participants (N = 357) were registered as *workers* on the Amazon Mechanical Turk (AMT) platform. AMT is regularly used in biomedical research studies to target nationally representative samples (Paolacci et al., 2010; Mason and Suri, 2012; Tompkins et al., 2016). Requesters in AMT make human intelligence tasks (HITs) available for *workers;* in turn, *requestors* can then rate *workers* based on completion and data quality. For the current study, ≥ 90% worker approval rating was required to access the study.

Eligibility was reserved for individuals 18 years or older, who were United States residents and endorsed non-medical prescription opioid use in the last 30 days. Non-medical prescription opioid use was defined for participants as "use of prescription opioids more than once in the last 30 days to 'get high' or for purposes other than prescribed". Prescription opioids were operationalized for participants as prescription medications that include: "Opioids (examples include Vicodin, Percocet, oxycodone, Dilaudid, Suboxone, etc.)". Eligibility questions were intermixed with distractor items to obscure the criteria under investigation. Only participants who met eligibility criteria were invited to complete the survey and distractor questions were embedded throughout the survey as a measure of quality control. Participants were also asked whether they had experienced computer problems or had other reasons their data were inaccurate and should not be analyzed. The survey was hosted on Qualtrics (Provo, UT).

Table 1
Demographics (n = 357).

Participant Characteristics	
Male (%)	59.1
Age [Mean yrs, (SD)]	32.6 (8.5)
White/Caucasian (%)	83.5
Income (Median)	$37,500
Setting (%)	
Urban	32.2
Suburban	52.4
Rural	15.4
OUD Category (%)	
None	25.5
Mild	12.6
Moderate	13.0
Severe	48.8
Insurance Coverage (%)	
Provided by employer	42.3
None	22.7
Healthcare Exchange/private pay	11.4
Medicaid	11.2
Source unknown	6.2
Medicare	5.3

SD = Standard Deviation, OUD = Opioid Use Disorder.
OUD category based upon self-reported responses to DSM-5 checklist.

2.2. Measures

Questions included items to characterize the sample (demographics and health insurance) and to assess perception of OUD treatment options and current OUD status (Table 1). Health insurance status was defined as a binary variable (yes/no). For individuals with insurance, the source of insurance (e.g., healthcare exchange, Medicaid/Medicare) was also queried. Participants were asked how much they were willing to pay out of pocket for one month of residential treatment or one month of MAT. As a proxy of opioid use severity, OUD status was defined by the number of self-reported symptoms endorsed on a DSM-5 checklist for OUD (range 0–11); participants were classified as meeting criteria for mild (2–3), moderate (4–5), or severe (6 +) OUD based upon established cut-offs (Table 1). Respondents who did not meet criteria for OUD were retained in the analyses because their endorsement of past 30-day misuse suggested they are at risk of developing OUD and/or seeking treatment in the future.

2.2.1. Perception of OUD Treatments

Participants answered several questions pertaining to the following OUD treatment options: residential treatment (28 days or longer), one-on-one counseling, cognitive behavioral therapy, group counseling, intensive outpatient (IOP), inpatient detox (less than 28 days), outpatient detox, buprenorphine (Suboxone®, Subutex®, Zubsolv®), methadone, naltrexone/Vivitrol® (extended release naltrexone), physician visit, sober living environment (e.g., halfway house), and 12-step group. Some multiple-choice questions permitted a single answer (Table 2), such as *what is the first treatment you would try to help stop abusing opioids?* Additional questions allowed multiple responses, such as *which of these treatment options would help YOU with opioid abuse or addiction (i.e., treatment preference), which treatment options are available in your area, which treatment options are not effective/you would not use,* and *which treatment options does your insurance cover?* Visual analogue scale (VAS) items asked participants to gauge (1) their familiarity with each treatment option (e.g., how familiar are you with each of the