International Journal of Drug Policy 71 (2019) 118–124

Contents lists available at ScienceDirect

International Journal of Drug Policy

journal homepage: www.elsevier.com/locate/drugpo

Research Paper

"They're making it so hard for people to get help:" Motivations for non-prescribed buprenorphine use in a time of treatment expansion

Katherine McLean[a,*], Philip R. Kavanaugh[b]

[a] Administration of Justice, Penn State Greater Allegheny, 4000 University Drive, McKeesport, PA, 15131, United States
[b] School of Public Affairs, Penn State Harrisburg, 777 W. Harrisburg Pike, Middletown, PA, 17057, United States

ARTICLE INFO

Keywords:
Treatment
Buprenorphine
Heroin
Diversion
Qualitative

ABSTRACT

Background: Buprenorphine maintenance therapy (BMT) has been widely recognized as one of the most effective treatments for opioid use disorders (OUD). In the midst of the U.S. opioid overdose crisis, local, state, and federal authorities have attempted to increase the availability of BMT, yet few individuals meeting the criteria for OUD utilize BMT. Moreover, recent research suggests that a significant proportion of individuals who use opioids seek out buprenorphine on the illicit market to self-govern and manage withdrawal sickness.

Methods: This paper presents data from a geographic sub-sample within a multi-site study of buprenorphine diversion in Pennsylvania. We endeavor to bolster a slim qualitative literature on the use of non-prescribed buprenorphine through in-depth interviews with 20 individuals who reported buying or receiving buprenorphine outside of medically-sanctioned contexts. Interviews characterized participants' reasons for both using non-prescribed buprenorphine and eschewing formal treatment, in a state (Pennsylvania) afflicted with high rates of heroin use and overdose deaths. Transcripts were initially coded for broad interview topics, while latent themes relating to buprenorphine diversion and extra-medical use also emerged.

Results: Analyses revealed complex motivations underlying participants' extra-medical use of buprenorphine. Where some expressed a desire for treatment autonomy and treatment medications that could not be achieved or obtained within BMT, individuals also indicated a persistent lack of treatment availability and access due to diverse barriers.

Conclusion: This study shows how issues related to availability, accessibility, and acceptability many explain low rates of BMT utilization, even within a place and time defined by medication-assisted treatment expansion. Beyond offering broad rhetorical and financial support for MAT, our findings suggest that governmental actors should continue to pursue policies that expand the spatial distribution of BMT. It also underscores the need to look beyond current models of buprenorphine maintenance and to consider modes of buprenorphine delivery beyond long-term maintenance.

Introduction

In the midst of a well-documented national crisis in opioid overdose, utilization of an extensively-evidenced tool of overdose risk reduction – buprenorphine maintenance therapy (BMT) – remains curiously low (Centers for Disease Control & Prevention, 2018). Alongside methadone maintenance therapy (MMT), BMT has been recognized as the "gold standard" of treatment for opioid use disorders (OUD), with enrollment associated with reduced illicit opioid use, reduced criminal involvement, and perhaps most salient, reduced mortality (Fudala et al., 2003; Mattick, Breen, Kimber, & Davoli, 2014; Schwartz et al., 2013; U.S. Department of Health and Human Services (HHS), Office of the Surgeon General, 2018). Yet, just 3 percent of the estimated 2,144,000 individuals meeting the criteria for opioid use disorders participated in BMT in 2016 – 61,486, according to the National Survey of Substance Abuse Treatment Survey (N-SSATS) (Substance Abuse and Mental Health Services Administration, 2017; United States Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. Center for Behavioral Health Statistics and Quality, 2016). The 2016 N-SSATS further revealed just over a quarter (27%) of treatment facilities offer any buprenorphine services, while the most recent Treatment Episode Data Set (2013) results showed that only 27.6% of primary heroin admissions had treatment plans including medication-assisted opioid treatment with buprenorphine or methadone (Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2017). Curiously,

* Corresponding author.
E-mail addresses: kjm47@psu.edu (K. McLean), prk114@psu.edu (P.R. Kavanaugh).

https://doi.org/10.1016/j.drugpo.2019.06.019

the latter proportion declined steadily from 2002 to 2012, as opioid-related deaths began their historic rise (Centers for Disease Control & Prevention, 2018).

While the mismatch between OUD treatment need and access has been extensively documented, the persistently marginal status of BMT within the larger treatment universe is more puzzling against recent efforts to specifically expand access (Farabee, Leukefeld, & Hays, 1998; Friedmann, Lemon, Stein, & D'Aunno, 2003; Metsch & McCoy, 1999; Wenger & Rosenbaum, 1994; Zule, Desmond, & Vogtsberger, 1997). Indeed, buprenorphine maintenance itself was intended to represent a more flexible and scale-able form of medication-assisted treatment (MAT), ever since the Drug Addiction Treatment Act (DATA-2000) permitted physicians to obtain waivers to prescribe buprenorphine from office-based settings in 2000. Where DATA-2000 limited physicians to a patient roster of 30 in the first year, and 100 thereafter, a 2016 amendment invited interested providers to treat up to 275 individuals (after authorization). Perhaps more importantly, the 2016 Comprehensive Addiction and Recovery Act allowed nurse practitioners and physician assistants to apply for a buprenorphine prescription waiver, pending 24 h of training (American Society for Addiction Medicine, n.d.). Such changes to federal buprenorphine policy occurred alongside a movement to increase health care and treatment access more generally. The 2010 Affordable Care Act not only expanded eligibility for public health insurance (Medicaid) coverage, but also defined substance abuse treatment as an "essential benefit" of insurance plans (Patient Protection & Affordable Care Act, 2010).

Despite a sustained, multi-pronged national effort to increase BMT availability, these policy prescriptions have not translated into sweeping increases in BMT enrollment. Constituting one axis of explanation, recent research has documented important disconnects between national buprenorphine policy and local BMT access. The geographic distribution of BMT prescribers is highly uneven; as of 2016, nearly half of U.S. counties still lacked a single waivered physician (Rosenblatt, Andrilla, Catlin, & Larson, 2015; Stein et al., 2016; Wen, Hockenberry, & Pollack, 2018). Local supply of buprenorphine prescribers may additionally be constrained by state-level decisions to opt-out of Medicaid expansion following from the Affordable Care Act (Knudsen, Lofwall, Havens, & Walsh, 2015). Moreover, several studies have shown that most waivered physicians are currently prescribing at levels far below legal capacity (Sigmon, 2015; Stein et al., 2016; Thomas et al., 2017).

A different approach to the availability-enrollment gap considers user demand and individual characteristics. Interest in medication-assisted treatment (MAT) may be shaped its perceived affordability, as well as individuals' specific opioid use history (Huhn, Tompkins, & Dunn, 2017). Even amidst BMT expansion, those who have sought treatment in the past may dread the possibility of being waitlisted, and the numerous bureaucratic hassles posed by intake (Peterson et al., 2010; Redko, Rapp, & Carlson, 2006). Finally, the persistent stigmatization of maintenance therapy – among both opioid users themselves and in U.S. society generally – may deter treatment entry (Allen & Harocopos, 2016). Reluctance to formally enter BMT should not, however, be conflated with disinterest in buprenorphine or buprenorphine-assisted detoxification. Rather, individuals may prefer to access buprenorphine through informal channels, for a host of reasons explored in the current study.

Qualitative research on non-prescribed buprenorphine use

While non-prescribed buprenorphine use has been well-characterized by quantitative survey research, qualitative data on this phenomenon, particularly within the U.S. domestic context, is sparse (for quantitative studies, see, for example, (Daniulaityte, Falck, & Carlson, 2012; Fox, Chamberlain, Sohler, Frost, & Cunningham, 2015; Genberg et al., 2013; Lofwall & Havens, 2012; Schulte et al., 2016). In one qualitative study on diverted buprenorphine selling in New York City, Furst (2014) conducted interviews with fourteen opioid retail pill sellers recruited from a therapeutic community treatment facility who diverted Suboxone to casual, recreational drug users referred to by study participants as "weekend warriors" through a variety of channels. All participants reported selling and bartering buprenorphine principally to support their own drug dependency as well as to avoid withdrawal (Furst, 2013, 2014).

Two other U.S. studies have used in-depth interviews to determine how and why individuals use buprenorphine outside formal treatment settings (Allen & Harocopos, 2016; Daniulaityte et al., 2012). Both Daniulaityte et al. (2012) and Allen and Harocopos (2016) considered non-prescribed buprenorphine use among urban samples of individuals who misused pharmaceutical opioids. Where Daniulaityte et al. (2012) found that a substantial proportion (50%) of their study participants sought buprenorphine to "get high," the latter found little evidence of recreational buprenorphine use, instead concluding that respondents generally sought buprenorphine to manage withdrawal, better manage continuing opioid misuse, or attempt self-detoxification (also see Furst, 2013). Working in New York City, Allen and Harocopos (2016) further identified negative attitudes, perceived stigma, and misinformation regarding buprenorphine as barriers to formal BMT enrollment.

In this paper we seek to expand a still limited qualitative literature on opioid users' motivations for non-prescribed buprenorphine use; it further describes individuals' preferences for extra-medical purchase of buprenorphine within a place (Allegheny County, PA) and cultural moment when support for a public health/harm reduction ethos to affect drug problems has gained bi-partisan traction, characterized by increased funding and governmental support for BMT. Whereas previous qualitative studies considered non-prescribed buprenorphine use before the federal extension of patient limits and eligible prescribers, this study examines why individuals choose to obtain buprenorphine extra-medically in a context ostensibly defined by increased availability of BMT and drug treatment more broadly. In the following section we describe the study location and sample characteristics.

The study site

Allegheny County is a metropolitan county of roughly 1.2 million surrounding the city of Pittsburgh in the southwestern area of the Commonwealth of Pennsylvania. Both Pennsylvania and the surrounding region have been the epicenter of the opioid crisis for the past several years. In 2017 Pennsylvania had the third highest drug-related death rate in the U.S. Medical examiners in Pennsylvania reported 5456 drug-related deaths – a 64 percent increase from 2015 (DEA Philadelphia Division & Pitt Pharmacy, 2018). West Virginia, which has led all U.S. states in drug-related overdose deaths for years, borders Pennsylvania to the southwest – the region of the Commonwealth where drug-related deaths are most concentrated. Allegheny County had the 5th highest drug-related death rate at 60 per 100,000 residents in 2017 (DEA Philadelphia Division & Pitt Pharmacy, 2018).

Following Medicaid expansion in 2015, Allegheny County saw the population of publicly-insured individuals with opioid-related diagnoses more than double (Allegheny Health Choices, 2017). The subsequent year, the county health department and local Medicaid administrator released a joint statement explicitly endorsing the "entitlement" of all individuals with opioid use disorders to medication-assisted treatment (Allegheny County Health Department, 2017). At the state level, 20 million USD investment in MAT was accompanied by a gubernatorial declaration of a public health emergency in January 2018 – a move that was intended to eliminate regulatory impediments to treatment registration (Associated Press, 2018). By documenting individuals' reasons for non-prescribed buprenorphine use in this setting, our aim in this study is to reveal the gaps between treatment availability, accessibility, and acceptability.

Methods

In this paper we present data from a geographic sub-sample of a multi-site study of buprenorphine diversion within two counties (Allegheny and Dauphin) of Pennsylvania. While the larger study seeks to track regional variation in motivations for, and means of, buprenorphine diversion in counties distinguished by differing concentrations of buprenorphine providers, this paper focuses solely on Allegheny County in order to consider the paradox of extra-medical buprenorphine use in a place where formal treatment options seem abundant. At both sites, study participation was open to individuals who self-reported using, selling, or sharing buprenorphine through extra-medical channels in the past-year; however, this paper reports only on non-prescribed buprenorphine buying/use among Allegheny County participants, all of whom affirmed this behavior in the past-year.

Between May and June 2018, in-depth interviews were conducted with 20 non-medical buprenorphine users residing in Allegheny County. Persons were recruited via a popular classified's website (Craigslist.org), where an advertisement was posted within a forum devoted to short-term labor "gigs." As noted above, eligibility was limited to adults aged 18 or over who self-reported buying or receiving buprenorphine for personal use from non-medical/non-treatment sources in the past year. Interested individuals were provided with the phone number of the first author, who used a brief screening instrument to affirm caller eligibility. Where participants overwhelmingly described buying or receiving the buprenorphine-naloxone film Suboxone, the use or illicit dissemination of any buprenorphine formulation currently approved for the U.S. market qualified individuals for study enrollment.

Individuals meeting study inclusion criteria were asked to identify an appropriate time and public place to meet with the first author for an in-depth interview. Interviews were largely conducted in fast food restaurants or coffee shops, with a handful occurring in libraries and health care facilities, and ranged from 20 to 75 min. While all individuals were provided with an information sheet detailing study aims, design, and procedures, consent was obtained verbally, for the purpose of protecting participant confidentiality within a study that captured information about behaviors that were not only illegal, but also prohibited among those receiving formal treatment. Interviews were semi-structured, and followed a questionnaire that briefly assessed individuals' demographics and substance use history, before moving onto three question batteries concerning treatment history, past-year non-prescribed buprenorphine use, and past-year buprenorphine diversion (as appropriate). Where the interviewer consistently asked all participants about their experiences with formal treatment and informal buprenorphine use, interviewees were allowed to direct the order of topics, and often presented their history of illicit substance use, treatment attempts, and buprenorphine involvement chronologically. Individuals indicating past or present BMT, or other treatment, utilization were asked to evaluate their experiences, while individuals without a history of formal treatment were asked to describe barriers to entry; moreover, all participants currently using non-prescribed buprenorphine were specifically probed about their decision to access the drug through extra-medical channels. At the end of every interview, participants were provided with a 25 USD gift card to a popular chain retail store. This study was approved by the Pennsylvania State University Institutional Review Board in March 2018.

Interviews were digitally-recorded and transcribed verbatim into NVivo 12 for Mac by the first author. Transcripts were initially coded for broad interview topics (e.g., formal treatment experiences, means of obtaining non-prescribed buprenorphine) and subsequently read for latent and nested themes surrounding buprenorphine diversion or extra-medical use, with view to identifying pathways of, and motivations for, diverting and obtaining diverted buprenorphine. As it became clear that many participants framed their use of non-prescribed buprenorphine in terms of difficulties or dissatisfaction with formal BMT treatment, a final two rounds of analysis specifically sought to chart the relationship between participants' extra-medical consumption of buprenorphine and treatment (or treatment seeking) history, ultimately revealing three primary barriers to successful treatment entry or retention. All participant names presented in the results that follow are pseudonyms.

Results

Participant characteristics

Roughly reflecting local demographics around opioid use in Allegheny County, the study sample was predominantly male (75%, n = 15), and white (85%, n = 17); two individuals (10%) identified as African-American, and a single participant (5%) indicated Asian ethnicity. Only two participants (10%) were under the age of 30, while 50% (n = 10) were between ages 30 and 39, and 40% (n = 8) were over forty years. All but one participant (95%, n = 19) reported previous treatment attempts, with 75% (n = 15) further indicating past use of medication-assisted treatment with methadone or buprenorphine. Yet, only two individuals (10%) were currently receiving BMT at the time of interview. While other prescription or illicit opioid use (e.g., heroin, fentanyl, oxycodone, hydrocodone) was not a condition for study enrollment, all participants (100%, n = 20) reported mis/use of other opioids in the last 12 months, with 90% (n = 18) affirming past-year heroin use specifically. Levels of past-year poly-substance use were additionally high; 75% (n = 15) of respondents indicated powder or crack cocaine use, while 65% (n = 13) and 45% (n = 9) reported marijuana and methamphetamine use, respectively. Though not the focus of this paper, 50% (n = 10) of participants had also sold or shared buprenorphine within the previous 12 months, and all but three (85%, n = 17) had done so at some point prior to the previous 12 months.

General motivations for non-prescribed buprenorphine use

Two primary motivations for the extra-medical use of buprenorphine emerged from the data: opioid withdrawal management and self-detoxification. Nearly all participants indicated that they had purchased or sought out buprenorphine in the past-year when they couldn't obtain, or didn't want to use, heroin or other opioids. Facing the onset of disruptive withdrawal symptoms, they chose to instead administer buprenorphine – an option often framed as an imperfect solution, as it would prevent the use of heroin for at least another 24 h. For individuals reporting regular heroin use, withdrawal was often characterized as a recurring, sometimes daily threat, conditioned by both financial precarity and unpredictable illicit markets. Consequently, it was seen as prudent to accumulate at least a small stockpile of buprenorphine as a "safety net" (Allen & Harocopos, 2016):

> "It's just certain days I wake up…you wake up, you're not feeling too well, so you need something to get you going. You learn to adjust, cause you're not gonna have the money to go get 'em anyway… You're not gonna sit there sick. So if you ain't got enough money for some stuff, you'll go take a Suboxone." (Wilson, African-American male, 53)
>
> I always had some, either Suboxone or Subutex. Something like that I would always have, at least as a reserve…I might have the same one for 3, 4 months. (Jack, White male, 36)

Where the incessant physical demands associated with opioid dependence encouraged Wilson, Jack, and others to maintain steady reserves of buprenorphine, the constant work implied by (illicit) opioid addiction led a significant minority of participants to attempt self-detoxification with buprenorphine. Participants recounted different personal regimens associated with varied levels of short- and long-term success. Johnny, 43, briefly used a bi-daily strip of Suboxone to

ameliorate acute heroin withdrawal, while other respondents, like Sheryl, laid out more elaborate plans for a progressive buprenorphine taper:

> So I was taking a strip every…every day and a half, every two days. Before I start feeling shitty I would take another strip. So I took a strip for about 6, 7 days…and then after we stopped, we still felt crappy, but it's tolerable. You're tired, you're weak, this that, but you're not, I wanna just, outta a window head first right now. (Johnny, Asian male, 43)
>
> Take like a whole piece one day, then a half a piece the next day, just like very small, like... Like 8 mg one day, 7 mg the next… Or like 8 mg the whole week, then 7 mg the next week, or even 2 weeks. (Sheryl, White female, 30)

While participants such as Johnny reported attaining sustained abstinence from opioids after a buprenorphine-assisted detox, some individuals described recurrent efforts to draw down or "pause" a heroin habit using buprenorphine, without necessarily aiming at permanent cessation. Somewhere between withdrawal management and self-detoxication, this pattern of use was often oriented around jobs, and might be characterized as a unique reason for extra-medical buprenorphine use. Before losing his job in a medical practice, Franklin, 31, relied upon Suboxone during the work week, while continuing to use prescription opioids outside the office. Other individuals, like Lev, 25, used buprenorphine to mitigate sickness resulting from periodic heroin "breaks":

> I was able to maintain myself at work, not be high, nodding off. I was able to snort a line in the morning, be good for pretty much the whole day, and have motivation, energy, it uplifts your mood without being…scratching, nodding out. (Franklin, White male, 31)
>
> I have in the past just to get me through the sickness. Of dope and just wanting to stop. Take a break and just still wanna be able to function and go to work. (Lev, White male, 25)

Franklin (quoted above) was the only participant who reported the past use of buprenorphine to "get high," characterizing the effects of the drug as mildly euphoric when insufflated. The majority of other participants evaluated the physical experience of buprenorphine in neutral or negative terms.

Specific reasons for accessing buprenorphine without a prescription

As noted in the sample description above, only two individuals were enrolled in buprenorphine maintenance treatment at the time of their interview. Yet, nearly every participant had sought or received BMT in the past, turning to illicit means of buprenorphine access only after failing in their efforts to get, or stay, in treatment. Indeed, even current BMT participants reported past-year extra-medical use before entering their present program. When asked to contextualize their choice of informal/illicit over formal/medical channels for acquiring buprenorphine, participants described difficulties with finding local providers, the time and cost burdens of travelling to clinics and paying for the drug, and reconciling the terms of their treatment with competing obligations and personal expectations. Such barriers to BMT entry and retention are described in further detail below, broadly thematized as issues of availability, access, and acceptability.

Availability

As in the US context more broadly, interviews revealed geographic inconsistency in the availability of BMT within Allegheny County. Even as a handful of participants observed an increase in both new buprenorphine clinics and clinic capacity in the past year, others bemoaned the continued dearth of open programs in their neighborhoods, towns, and adjacent areas. Significantly, participants who reported a lack of BMT availability lived in the periphery of Allegheny County, outside of the city of Pittsburgh. Interestingly, some participants who had struggled to find a provider or fill their prescription in their community of residence also spoke the ways in which an area's socioeconomic status shapes buprenorphine availability. Chris, a 42-year-old white male, joked that buprenorphine clinics had been "popping up like candy stores" in his deindustrialized city; however, it was near impossible to consistently procure prescribed buprenorphine from the only local pharmacy that stocked Suboxone. This effective shortage reflected not only the general decline of area businesses, but the problem of wholesale buprenorphine purchasing limitations imposed on pharmacies, in a place with increasing numbers of Suboxone prescriptions. Nick, 35, simply contrasted the convenience of buying on his block, as opposed to finding a faraway clinic.

> I go out to richer areas…they never run out of Suboxone there, because they're not afraid somebody's gonna rob them. Places like this? They might get 90 a day. You know, and then you got 10 people coming to the clinic fighting over it. (Chris, White male, 42)
>
> I guess one of my problems is finding a clinic near where I live… haven't really thought about it I guess…it's just easier for me to go up the street there… (Nick, White male, 35)

Where the location of area programs often deterred treatment entry, or undermined treatment retention, some individuals also discussed temporal barriers to treatment entry, namely long wait lists at their neighborhood clinics. Sheryl (quoted previously) lived in a bustling Pittsburgh suburb, while Tina, 39, resided in a relatively rural exurb; both, however, identified time to treatment entry as a reason for buying buprenorphine "on the street" – a purchase that required no mandatory waiting period, insurance authorization, or doctor consultation.

> Well, I would just call, call, call all these places. And no one would either take my insurance or they would make you wait, cause they were full. So you're just going to keep on using if you can't get in right away. So…then I just gave up on that. (Sheryl, White female, 30)
>
> I could've gotten it in a day as opposed to a couple weeks. (Tina, White female, 39)

Accessibility

For the above individuals, BMT, or prescribed buprenorphine itself, was not adequately available in the places they lived, at the time they desired it. Other individuals describing past attempts at BMT were able to identify conveniently-located clinics with open spots, but struggled in getting to and paying for treatment. With only a small number owning private vehicles, participants were overwhelmingly reliant upon a public bus system whose spotty coverage and sporadic scheduling rendered their chosen treatment program inaccessible. Both Johnny (quoted earlier) and Jenna reported relative ease in entering BMT, but ultimately balked at the many hours of mass transit travel required.

> I was going to…[clinic name] on the South Side. They were giving me Suboxone's, but I had to go there every day from 8:00 in the morning to 3:30 in the afternoon, every single day. Oh my God. Getting up at 5:00 in the morning to be down at the South Side by 8. That shit got old real quick… (Johnny, Asian male, 43)
>
> I was going to the Bridgeville location, and it just didn't work for me. It was too far and those therapy sessions really irritated me. (Jenna, African-American female, 37)

Giving up on treatment shortly after receiving her second Suboxone prescription, Jenna retained seven strips for personal use, and sold the remaining seven to an acquaintance who was "trying to get clean," but lacked insurance. Financial barriers to BMT enrollment, usually resulting from lapsed insurance coverage, were common among interview participants. While individuals' primary occupation and employment

status were not systematically solicited in interviews, many described a volatile work history that implied regular disruptions to insurance status. In the absence of health coverage, participants cited initial doctor or clinic "consultation" fees of up to 500 USD, with a 30-day supply of Suboxone strips or Zubsolv tablets costing an additional 300 to 500 USD at the pharmacy. By contrast, Suboxone acquired from friends or dealers ranged from 5 to 20 USD per strip, with an average of 10 USD; buprenorphine-only pills, such as Subutex, could be purchased at a slight premium, for 15 to 20 USD. Such prices were perceived as competitive even among interviewees reporting Medicaid coverage, whose access to BMT was further complicated by regulations mandating insurance "pre-authorization" before treatment entry.

> I couldn't afford a doctor beforehand, and then I found a doctor who was affordable, and I had insurance, and getting funded was a process. (Jeff, White male, 33)
>
> I had to buy them that way, 'cause I didn't have health insurance at the time, so… I go to a pharmacy right now with no health insurance, it costs more to buy the tablet there with a prescription than it does to buy one on the street with no prescription. (Lincoln, White male, 29)

Acceptability

Even among individuals who reported a steady income, health insurance, and geographic proximity to buprenorphine providers, the bureaucratic requirements surrounding treatment entry and participation could still be perceived as unacceptable obstacles to formal BMT. Indeed, Lincoln, quoted above, saw the logistical and regulatory nuisances of BMT as shaping a robust market in illicit buprenorphine from which he personally profited. The only study participant who reported past enrollment in BMT for the explicit purpose of buprenorphine diversion, Lincoln continued to purchase the drug in bulk, "on the street," with the intention of re-selling at a markup, only occasionally using the drug to ameliorate heroin withdrawal. Lincoln spoke with deep expertise about the baroque legal and insurance regulations governing buprenorphine prescription, and specifically about his ability to access (and subsequently divert) a less common form of buprenorphine in Pennsylvania – "stop sign"-shaped tablets containing both buprenorphine and naloxone, as opposed to the near-ubiquitous buprenorphine-naloxone (Suboxone) sublingual films, or "strips." In his own view, Lincoln provided an invaluable service to a hidden population of working individuals who could simply not tolerate the demands of formal BMT entry and participation:

> Usually it's the people who have jobs, they are doing good, and have been clean for awhile…they don't have time to go to welfare and to the doctor's appointments. They'll pay someone $10 to do that instead. (Lincoln, White male, 29)

Where multiple individuals identified the laborious process of program enrollment and insurance authorization as a primary barrier to treatment, many also discussed clinics' time-consuming, and stressful, therapeutic requirements as a reason for buying buprenorphine on the street. Besides Johnny and Jenna (quoted in the previous section), Franny, a 35-year-old white female with multiple maintenance treatment attempts, saw the group counseling mandate of her most recent BMT program as preordaining failure:

> You had to…go in 4 days a week and it was 2 -h session, in a group setting, which I did not like at all. At all. I have anxiety. I'd go to the bathroom and have panic attacks, then you're not allowed to be on anxiety medicine… (Franny, White female, 35)

Restrictions on the simultaneous prescription of buprenorphine and benzodiazepines – enforced both by individual prescribers and insurance providers – were also characterized as unacceptable by three other interviewees. Two such participants prioritized formal medical access to their anxiety medication, knowing buprenorphine is easily available on the street. While understanding the interactions between opioids and benzodiazepines, Robby, 33, complained about his inability to continue his clonazepam prescription while receiving BMT, a situation that struck him as counterproductive to his long-term recovery, and kept him out of treatment.

> I'd have to go away to treatment, cause I'll be withdrawing from my medication [Klonipin], which, I'd be in treatment longer, so…it's gonna be more expensive for them anyways, cause I'm going to be in treatment a hell of a lot longer for them, they're gonna be paying for my benzo withdrawal, really…which is a lot worse, so it just doesn't make sense. (Robby, White male, 33)

Where Robby, Franny, and others preferred to preserve legal access to their anxiety medications at the expense of buprenorphine treatment, many individuals identified the maintenance medication itself as the problem. For most participants, the only form of buprenorphine practically available to them was Suboxone, a drug they described as both ineffective and unpleasant.

Wilson and Franklin, both out-of-treatment individuals who used heroin, commented on the inconsistency of Suboxone strips in alleviating physical withdrawal symptoms, speculating that this particular buprenorphine product had less "active ingredient." Still others doubted the drug's propriety as a recovery medication, noting that the sickness associated with Suboxone detoxification was worse than that associated with not only heroin, but other, less available buprenorphine medications. Josh, 36, was the only individual in the sample who had treatment experience with a buprenorphine product that lacked naloxone (Subutex); having lost licit access to Subutex, he nevertheless said that he "wouldn't bother" buying Suboxone off the street, preferring to purchase the more expensive Subutex:

> If it wasn't for Subutex, like I would almost, say, rather go through withdrawal from dope than go through… Suboxone, after I went on only an eighth a day and then went into detox…I still felt like shit for like a month afterwards. (Josh, White male, 36)

Nearly half of participants expressed a preference for Subutex, despite being unable to receive it within a formal medical setting (apart from one participant who had been prescribed Subutex during pregnancy, all other individuals who had consumed the drug had obtained it through the illicit market). Described as "cleaner," "stronger," and easier to give up, the superiority of Subutex was sometimes defined solely in terms of the defects of Suboxone. Simon, 34, expressed not only a dislike, but also a mistrust, of Suboxone, stemming from the co-formulation of buprenorphine with naloxone:

> …It's really kind of shitty that they want to give everybody the one with naloxone in it…I feel like I can feel the naloxone kind of, but they say it doesn't…they say you won't get it if you take it properly, but I still think I can feel it. (Simon, White male, 34)

Many individuals expressed the belief that the naloxone, not buprenorphine, contained in Suboxone could cause precipitated withdrawal, even when individuals consumed strips sublingually. Fear of naloxone was voiced by a majority of participants, and further cited as a reason for avoiding a mode of treatment that would involve its daily consumption (through Suboxone). Lisa, 43, had never officially received BMT, and was intensely wary of Suboxone, having sought emergency care after her last self-medication with the drug:

> It was like 4 or 5 in the evening I had my last dope. And then I took at one [Suboxone] in the morning. And it sent me into precipitated withdrawal….I only took a third, and immediately, like in 10 min…I started feeling it, I started sweating, I started feeling really anxious, and restless leg kicked in…And I went to the hospital. (Lisa, White female, 43)

Discussion

The interview data presented here describe individuals' motivations for the non-prescribed use of buprenorphine, and their relationship to BMT availability, practical access, and acceptability, among a sample of persons who use opioids in Allegheny County, Pennsylvania. Participants' stated reasons for the non-prescribed use of buprenorphine – withdrawal management and self-detoxification - largely confirm the findings of one previous qualitative study, as well as several quantitative studies, of buprenorphine diversion (Allen & Harocopos, 2016; Genberg et al., 2013; Schulte et al., 2016; Schuman-Olivier et al., 2010). Unlike Daniulaityte et al. (2012), however, this study found little evidence of recreational buprenorphine use to "get high." This finding may be an artifact of the sample, which was comprised of relatively experienced opioid users, who were accustomed to the stronger intoxicating effects of heroin, fentanyl, and prescription opioids such as oxycodone and hydrocodone. Even as most participants expressed an interest in the utilization of buprenorphine to stop heroin and/or prescription opioid misuse, geographic, temporal, financial, and institutional barriers deterred formal entry into or retention in BMT. According to some participants, the street purchase of buprenorphine was associated with particular advantages that mirrored perceived drawbacks of official BMT participation: immediate and local access, flexibility in consumption, and preferred medication usage. Individuals' objections to formal BMT, framed above as issues of acceptability, were sometimes founded in misconceptions around buprenorphine and the drug Suboxone – a problematic reality that might prevent treatment enrollment even under conditions of ideal availability and access. Combined with a lack of education around buprenorphine, the sporadic and unregulated consumption of the drug within a larger pattern of heroin, prescription opioid, and benzodiazepine use may also increase individuals' overdose risk (Daniulaityte, Carlson, Brigham, Cameron, & Sheth, 2015). Such risk may be particularly acute among individuals who decline formal BMT in order to retain medical access to benzodiazepines for the treatment of anxiety disorders. While supported by a sound medical rationale, the clinical practice of forbidding the co-prescription of buprenorphine and benzodiazepines was perceived by participants as forcing a choice between their mental health and recovery from an OUD.

Reflecting the experiences of a small, web-recruited sample in one metropolitan area, the generalizability of these findings may be limited. Nevertheless, this study can provide important insight into low rates of BMT utilization nationwide, in the wake of federal efforts to increase treatment availability; it further identifies persistent perceptual and logistical obstacles to BMT participation in both a county and state ostensibly promoting substitution treatment expansion. Beyond offering broad rhetorical and financial support, this study suggests that governmental actors should continue to pursue policies that expand the spatial distribution of BMT. Where the current gubernatorial administration in Pennsylvania has dedicated over 15 million USD in new funding for medication-assisted treatment expansion (including BMT) since 2016, focusing specifically on the creation of county-specific "Centers for Excellence," policies that incentivize potential office-based prescribers to obtain the necessary waiver might better disperse access to treatment across the state, counties, and cities (Holt, Katirai, & Katirai, 2019). Where the establishment of a model BMT program in a county otherwise lacking in medication-assisted resources is undoubtedly positive, our data suggests that individuals seeking BMT may be unable or unwilling to visit clinics within a distant neighborhood of the same municipality. Moreover, laws that discourage interested and eligible providers, such as one PA bill proposing increased fees for new prescriber certifications, might also be reconsidered (Gutman, 2018).

At the same time, the data presented above also suggest the need to look beyond the current drugs predominantly used in buprenorphine maintenance, and moreover, consider temporary or emergency models of buprenorphine provision. While buprenorphine-only drugs have been shown to have a high potential for abuse compared to formulations that combine buprenorphine and naloxone, participants in this study were vocal about their preference for the former (e.g., Subutex), and their dislike of the latter (e.g., Suboxone) – a preference explicitly identified as an obstacle to entering BMT programs that would almost certainly prescribe Suboxone (Jones et al., 2017). Expanded use of buprenorphine-only formulations in BMT might require increased participant monitoring and therapeutic requirements intended to prevent diversion and misuse - program characteristics also cited as undermining retention by participants in this study. However, access to a drug that is perceived as more effective may prompt participants to both seek and persist in treatment, despite such barriers. Access to buprenorphine-only maintenance medications might be enhanced through modifications not only to public insurance coverage of "buprenorphine mono-therapy," but also state-level prescribing guidelines that presently that recommend mono-therapy only for pregnant women (Commonwealth of Pennsylvania, 2018).

Beyond enlarging the roster of medications commonly used in BMT, policymakers, waivered prescribers, and other treatment providers should consider innovative forms of BMT delivery that acknowledge many opioid users' ambivalence about maintenance therapy or treatment entry more generally. In Pennsylvania, individuals participating in BMT at a certified opioid-treatment program or clinic are required to receive behavioral therapy, while those prescribed buprenorphine from an office-based practice are under no such imperative (Commonwealth of Pennsylvania, 2016). Yet, the latter loophole may soon close, if a recent Pennsylvania House Bill mandating concurrent counseling for all individuals receiving MAT in Pennsylvania is passed (Thomasson, 2018). If drawing on the robust evidence demonstrating MAT effectiveness, such a policy may further deter individuals who are hesitant to commit to the logistical rigors of long-term treatment, or who are discouraged by long waitlists.

Two recent pilot studies have demonstrated a possible solution to both continued problems of inadequate BMT capacity and user reluctance in the form of interim buprenorphine treatment, or the temporary provision of medication, without counseling, to individuals who would otherwise remain in therapeutic limbo. While the long-term effectiveness of interim BMT has yet to be demonstrated, the available data shows promising levels of full treatment transition, as well as reduced rates of illicit opioid use, among program participants (Abrahamsson et al., 2016; Sigmon et al., 2015). Another short-term intervention involving immediate buprenorphine provision mirrors many opioid users' own practices of using the drug expressly for emergency withdrawal management, a pattern affirmed in these data as well. Following a 2015 study of immediate buprenorphine dispensing in an emergency department (ED), a growing, if still inadequate, number of health care systems have identified the potential of ED buprenorphine provision for opioid withdrawal to increase the likelihood of eventual BMT uptake (D'Onofrio et al., 2015). Promoting access to, and education around buprenorphine in a location where opioid-dependent persons access health care, such a method of buprenorphine delivery might ultimately assist individuals in negotiating the diverse barriers to conventional BMT treatment presented in this study.

Funding

This project received funding from Penn State Greater Allegheny. This funding source had no role in study design, data collection, data analysis, or manuscript preparation.

Acknowledgement

This study received funding from Penn State Greater Allegheny.

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