157 (2024) 209216

Contents lists available at ScienceDirect

Journal of Substance Use and Addiction Treatment

journal homepage: www.journals.elsevier.com/journal-of-substance-use-and-addiction-treatment

Access challenges to opioid use disorder treatment among individuals experiencing homelessness: Voices from the streets

Michael Hsu [a,*], Olivia S. Jung [c], Li Ting Kwan [d], Oluwole Jegede [e], Bianca Martin [f], Aniket Malhotra [b], Joji Suzuki [f]

[a] Department of Psychiatry, Greater Los Angeles VA Medical Center, Los Angeles, CA, USA
[b] Department of Psychiatry, Emory University School of Medicine, Atlanta, GA, USA
[c] Department of Health Policy and Management, Fielding School of Public Health, University of California, Los Angeles, California, USA
[d] Vagelos College of Physicians and Surgeons, Columbia University, New York, NY, USA
[e] Department of Psychiatry, Yale School of Medicine, New Haven, CT, USA
[f] Division of Addiction Psychiatry, Brigham and Women's Hospital, Boston, MA, USA

ARTICLE INFO

Keywords:
Medications for opioid use disorder
Buprenorphine
Health equity
Treatment access
Opioid use disorder

ABSTRACT

Background: Achieving equitable access to medications for opioid use disorder (MOUD) such as buprenorphine is a pressing issue. Evidence suggests disparities in MOUD access based on race and socioeconomic status, further exacerbated by the COVID-19 pandemic. However, the drivers behind this access gap remain poorly understood. This study explores barriers to treatment access among individuals with opioid use disorder (OUD) experiencing homelessness.

Methods: We interviewed 28 individuals in and around the Boston Public Health Commission (BPHC) Engagement Center, an area known for its high density of active substance use and homelessness. We asked about people's experiences, perceptions, and attitudes toward OUD treatment. We conducted a thematic analysis of our interview data.

Results: Fifty-four percent of participants sampled were not prescribed MOUD. None of the participants reported having an active prescription of sublingual buprenorphine or buprenorphine/naloxone. White participants were more likely to have been prescribed buprenorphine in the past compared to participants of other races even in this socioeconomically homogeneous sample. Themes that emerged in our data included challenges to accessing MOUD due to reduced services during the COVID-19 pandemic, lost or stolen medications, fewer inpatient withdrawal management beds for women, transportation challenges, fear of adverse effects of MOUD, the perception that taking MOUD replaces one addiction for another, and community disapproval of MOUD. Participants also reported stigma and discrimination based on race, gender, and socioeconomic status.

Conclusion: Systems and individual-level factors contribute to the MOUD treatment gap across race and socioeconomic status. The COVID-19 pandemic posed additional access challenges. This study provides important, actionable insights about the barriers faced by a particularly vulnerable population of individuals with OUD experiencing homelessness.

1. Introduction

Deaths by opioid overdose have risen dramatically in the past decade with the emerging use of non-prescribed High Potency Synthetic Opioids (HPSO) like fentanyl. In many areas of the United States, the rise in opioid overdose deaths has especially affected Black, Indigenous and People of Color (BIPOC), with such disparities worsening during the COVID-19 pandemic (Alexander et al., 2021; Friedman et al., 2021; Friedman & Hansen, 2022; Larochelle et al., 2021). Non-Hispanic Black people were four times more likely to die by overdose than White people among adults aged 55 or older in the last few years (Mason et al., 2022). BIPOC individuals also have poorer treatment outcomes and engagement with opioid use disorder (OUD) treatment (Chunara et al., 2021; Hollander et al., 2021; Lagisetty et al., 2019; Parlier-Ahmad et al., 2022). Low socioeconomic status (Altekruse et al., 2020; Kariisa et al., 2022) and housing instability (Woolf & Schoomaker, 2019) were

* Corresponding author at: 11301 Wilshire Blvd., Bldg 210A, Los Angeles, CA 90073, USA.
E-mail address: michael.hsu@va.gov (M. Hsu).

https://doi.org/10.1016/j.josat.2023.209216
Received 7 March 2023; Received in revised form 25 July 2023; Accepted 13 November 2023
Available online 18 November 2023

additional risk factors for opioid overdose.

Differential access to life-saving medications for opioid use disorder (MOUD) and other structural vulnerabilities in the substance use treatment process likely contribute to poor outcomes for minoritized populations and individuals with lower socioeconomic status (SES). The onset of the COVID-19 pandemic reduced utilization of OUD treatments, likely due to health care infrastructure and capacity issues, with BIPOC individuals especially affected due to lower pre-pandemic treatment access compared to White individuals (Alexander et al., 2021). One study looking at national buprenorphine prescribing rates showed that Black patients were less likely to be prescribed buprenorphine at office visits compared to White patients (Lagisetty et al., 2019). Black and non-White Hispanic patients were also less likely to be prescribed MOUDs and less likely to adhere to MOUDs compared to White counterparts (Schiff et al., 2020). These disparities were further exacerbated by the COVID-19 pandemic (Nguyen et al., 2022). Furthermore, buprenorphine treatment rates in New York City increased between 2004 and 2013 in regions with higher income and lower percentage of Black and Hispanic residents compared to areas of lower income and a higher percentage of Black and Hispanic residents (Hansen et al., 2016). Literature also shows that unhoused individuals and those with lower SES have poorer SUD treatment outcomes than those with stable housing and higher SES (Saloner & Lê Cook, 2013). Engagement in mental health and substance use treatment services declined among Black and non-White Hispanic individuals in Massachusetts during and after the COVID-19 pandemic (Yang et al., 2020).

Factors underlying access challenges to opioid use disorder treatment among marginalized populations remain understudied. One qualitative study of ten individuals not in active treatment in the Netherlands revealed six themes related to health care accessibility: stigmatization, personal factors, consequences of use, knowledge deficits, social support, and treatment factors (Caris & Beckers, 2022). Another qualitative study examining access challenges to OUD treatment after inpatient-managed withdrawal described barriers around continuity of care, a limited number of inpatient withdrawal and residential treatment beds, unstable housing, and lack of options when choosing a treatment pathway (David et al., 2022). Our study explores access challenges in the context of the COVID-19 pandemic among individuals with OUD who are experiencing homelessness.

2. Materials and methods

2.1. Study design

To explore how individuals with OUD who are experiencing homelessness feel about substance use treatment and MOUD, we conducted a qualitative field study comprising semi-structured interviews. We developed the interview guide based on a review of literature on MOUD and patient experiences with MOUD (Caris & Beckers, 2022; Gryczynski et al., 2013; Peterson et al., 2010; Schiff et al., 2022), as well as the clinical expertise and community outreach experiences of our research team. Our research team comprised addiction psychiatrists, health services researchers, and outreach volunteers with extensive experience related to addressing substance use among individuals experiencing homelessness.

The interview guide (Appendix A) included open- and close-ended questions that probed the challenges that participants had experienced in accessing substance use treatment, experiences with taking MOUD, reasons for not utilizing substance use treatment, experiences with specific addiction treatment settings, experiences of racism or discrimination in treatment, beliefs on how religion may impact the decision to receive substance use treatment, COVID-19 specific limitations to accessing substance use treatment, feelings around taking MOUD, and family and community disapproval of taking MOUD. We also asked about participants' sociodemographic background, substance use history, and clinical diagnosis. We iteratively updated our interview guide during data collection to account for themes that emerged during initial interviews. The Mass General Brigham Institutional Review Board approved this study.

2.2. Participants, recruitment, and data collection

We recruited and interviewed individuals from in and around the Boston Public Health Commission Engagement Center ("the Center") between February and May 2022. The Center is located in an area with high-density active injectable substance use, housing instability, and opioid overdose deaths (Ramos & Allen, 2016). We approached 91 individuals on the streets provided a description of the study, including the study purpose, remuneration, and procedures to uphold confidentiality, and asked if they would be interested and consent to participating. 33 individuals consented and we administered the screening questions to those individuals to determine their eligibility to participate. The eligibility criteria included the age of 18–65, experience of homelessness in the past year, and a history of OUD. The study excluded individuals younger than 18 and older than 65 with stable housing, without a history of OUD, and deemed as unfit to participate (e.g. inebriated, sedated, etc.). Twenty-eight individuals of the 33 who consented met the criteria for inclusion in our study. Two participants had to stop the interview due to unforeseen circumstances. We included data from these two participants in our analysis as we had gone through more than half of the interview guide before having to stop the interview.

We used the purposive sampling approach to oversample racially minoritized individuals given the historic oversampling of non-Hispanic White individuals in prior qualitative research about OUD treatment access (Atwood et al., 2016; Howard, 2016; Howard et al., 2018; Ostrach & Leiner, 2019; Schiff et al., 2022; Silverstein et al., 2019). To do so, the research team visually identified individuals of minoritized races which was then confirmed through participant self-report, just before assessing their willingness to participate in the study. We continued interviews until we reached thematic saturation, such that additional interviews did not reveal new information (Glaser & Strauss, 1967).

The first three authors (MH, OJ, LK) conducted all interviews, with at least two present at every interview. The authors conducted the interviews in a private room inside the Center or in a secluded area outside where just the researchers and the interviewee were present. Interviews lasted 10 to 30 min. At the end of each interview, participants received either a duffel bag or hoodie as compensation for their input and time. The study completed all interviews in person, audio-recorded, de-identified, and transcribed verbatim by an outside transcription service. We also took field notes during the interviews, which supplemented the transcribed interview data and facilitated interpretation of data and identification of themes.

2.3. Data analysis

We conducted a thematic analysis, which involved identifying and examining codes that describe important themes in the data (Corbin & Strauss, 2008). Our analysis involved deductive as well as inductive approaches. The deductive approach entailed using a framework on access to healthcare services (Berg, 2001; Miles & Huberman, 1994; Penchansky & Thomas, 1981) to organize our data. In this framework, Penchansky and Thomas describe five dimensions of access ("5As"): availability, accessibility, accommodation, affordability, and acceptability. Availability is defined as the extent to which a provider or health system has the resources to meet the needs of patients. Accessibility assesses how easy it is for patients to physically reach clinical services. Accommodation is the ability of the provider or health system to provide services in a way that meets patients' preferences and constraints. Hours of operation and the ability to receive services without prior appointments are prime examples. Affordability is described as having the financial means to use the services. Acceptability refers to patients' comfort with the immutable aspects of the health service or provider.

We first coded the data as one of the 5As. All but one dimension pertaining to affordability was relevant for our data.

Next, the inductive approach entailed reviewing and open coding the organized segments from the transcripts using Dedoose, a qualitative analytic software (SocioCultural Research Consultants, LLC, Los Angeles, CA). We searched for specific patterns and emerging themes associated with respondents' beliefs, attitudes, and experiences related to the availability, accessibility, accommodation, and acceptability of MOUD and substance use treatments. We used constant comparison techniques to compare each transcript with previously coded text to ascertain whether new text segments conveyed similar versus novel concepts. The first two authors (MH, OJ) coded all the data and shared the codes and coded data segments with the research team. The team met regularly throughout the analytic process to review the emerging codes and themes, discuss apparent patterns, and resolve any discrepancies. Below, we describe our findings with illustrative quotes with labels for participants' age, gender identification, and race/ethnicity.

We used descriptive statistics to summarize quantitative data. The study compared demographics and clinical characteristics for White and non-White participants by using a chi-square test for categorical variables and a two-tailed Student *t*-test for continuous variables. We performed all analysis using Stata Statistical Software: Release 17 (StataCorp LLC).

3. Results

3.1. Study sample

Participants in the study ($N = 28$) had a mean age of 44 years (SD = 11). Other participant characteristics are shown in Table 1. About two-thirds of the sample population identified as male. 36 % were White, 21 % were non-White/non-Black Hispanic, 36 % were Black, and 7 % were American Indian.

3.1.1. Clinical characteristics

Less than half of the sample (46 %) reported active MOUD use; 36 % reported being on methadone but only one individual each was on extended-release buprenorphine, oral naltrexone, and extended-release naltrexone. None of the participants reported being on sublingual buprenorphine or buprenorphine/naloxone. We also noted differences in the extent to which respondents were prescribed buprenorphine in the past by their race/ethnicity. Grouping the sample into White and non-White (10 and 18, respectively), non-White participants were less likely than White participants to have been previously prescribed buprenorphine (11 % vs 60 %, respectively, $P = .01$) or sublingual buprenorphine/naloxone (78 % vs 100 % respectively, $P = .27$).

In terms of co-occurring disorders, most participants reported a diagnosis of major depressive disorder (64 %). In the past six months, they reported use of tobacco (86 %), cocaine (79 %), and cannabis (61 %).

3.2. Overview of qualitative themes

Across the four dimensions of access (Penchansky & Thomas, 1981), nine key themes emerged. Table 2 shows the overview of the themes and their description by the access dimension. The themes under the availability dimension included reduced services due to the COVID-19 pandemic and fewer inpatient withdrawal management beds for women. One theme under the accessibility dimension pertained to transportation challenges. The themes under the accommodation dimension included cumbersome treatment scheduling and lost or stolen medications. The themes under the acceptability dimension were fear of adverse effects of MOUD, perception that taking MOUD means replacing one addiction for another, community disapproval of MOUD, and negative experiences at treatment clinics.

Table 1
Study sample characteristics ($N = 28$).

Characteristic	N (%)
Age, mean years (SD)	44 (11)
Gender	
Female	9 (32)
Male	18 (64)
Transgender	1 (4)
Race/ethnicity	
American Indian	2 (7)
Black	10 (36)
Non-white/non-Black Hispanic	6 (21)
White	10 (36)
Current MOUD use	
Not in active MOUD treatment	15 (54)
Buprenorphine	0 (0)
Buprenorphine/naltrexone	0 (0)
Buprenorphine, extended-release	1 (4)
Methadone	10 (36)
Naltrexone, oral	1 (4)
Naltrexone, intramuscular	1 (4)
MOUD ever been on	
Buprenorphine	8 (29)
Buprenorphine/naloxone	24 (86)
Buprenorphine, extended-release	1 (4)
Methadone	26 (93)
Naltrexone, oral	4 (14)
Naltrexone, intramuscular	5 (18)
Psychiatric diagnosis	
Attention-deficit/hyperactivity disorder	15 (54)
Bipolar disorder	10 (36)
Generalized anxiety disorder	13 (46)
Major depressive disorder	18 (64)
Post-traumatic stress disorder	17 (61)
Schizophrenia	4 (14)
Drugs used in the past six months	
Alcohol	12 (43)
Benzodiazepines	9 (32)
Cannabis	17 (61)
Cocaine	22 (79)
Hallucinogens	3 (11)
Methamphetamine	12 (43)
Tobacco	24 (86)

MOUD: medications for opioid use disorder.
SD: standard deviation.

3.2.1. Availability

Two themes reflected the limited availability of substance use services. The first theme pertained to reduced substance use services during the COVID-19 pandemic. Several participants reported that getting into inpatient withdrawal management facilities was exceedingly difficult during the pandemic due to a decreased availability of beds. Consequently, individuals either could not find a bed or faced intolerable wait times while in opioid withdrawal before admission. One participant said,

> "Every place is full. You want to go get help? Every place is full. You got to sit there and wait, wait all day. When you're sick, you don't want to wait all day. You want to go. When you make a decision, you want to go."
>
> (Participant 67, 43 yo, Female, Hispanic)

Another participant lamented that in-person outpatient services were replaced by virtual services, which were difficult to engage with.

> Due to the COVID-19 pandemic, the number of beds has been greatly reduced. A lot of it is virtual and things are not as readily available as before. It was hard to get into the shelters, too. I couldn't get a bed. I had to resort to the street.
>
> (Participant 65, 52 yo, Male, White)

One participant also expressed not only a decreased supply of inpatient withdrawal management beds, but an additional fear of going to

Table 2
Qualitative themes around accessing substance use treatment.

Access dimension	Theme	Description
Availability	Reduced services due to the COVID-19 pandemic	Reduced number of beds in residential and inpatient managed withdrawal centers, fear of entering facilities because of possible infection, lack of in-person services
	Fewer treatment beds for women	Limited treatment beds for females (vs. males) before the pandemic and exacerbated by it
Accessibility	Transportation challenges	Living far away, unable to get a ride to methadone clinic or inpatient managed withdrawal centers
Accommodation	Cumbersome treatment schedule	The required daily engagement with methadone clinic/ treatment plan perceived as challenging/cumbersome
	Lost or stolen medications	Challenges refilling lost or stolen medications, lack of secure storage for medications
Acceptability	Fear of adverse effects of MOUD	Fear of precipitated withdrawal from buprenorphine, being around people in treatment, overdosing on MOUDs, other potential adverse health effects
	Perception that taking MOUD means replacing one addiction for another	Beliefs that buprenorphine is an addictive substance
	Community disapproval of MOUD	Family and community (e.g., religious groups) disapproval
	Negative experiences at treatment clinics	Discrimination based on race or gender, neglect

the hospital due to a risk of possible infection. The additional fear and anxiety likely fueled further substance use.

> It was just because a lot of the detox places closed down during the pandemic. I wish they didn't, so more people could get treatment. And when the hospitals became affected zones, you couldn't be near hospitals. The fear and stress during the pandemic, and the isolation, made me use more.
>
> (Participant 40, 36 yo, Male, White)

The second theme pertained to fewer inpatient withdrawal management beds for women. Several female participants reported that prior to the COVID-19 pandemic, the availability of female-specific beds was already less than that of male beds.

> I've had difficulty getting into a detox. There are no beds. There are more beds for males than for females. It's been this way since I've been going to detox, for 20 years.
>
> (Participant 68, 45 yo, Female, White)

> It's hard to get into detox, especially for us women. There are more beds for men than there are for women. I don't think it's fair at all. Because there are women out here that really, really want help and we can't get it. Like today, I wanted to go to [a medical respite facility for people experiencing homelessness] for detox. But they took two guys over me. We all got in at the same time and they went in, but I couldn't.
>
> (Participant 38, 52 yo, Female, Hispanic)

However, as the COVID-19 pandemic reduced the supply of inpatient withdrawal management beds across the board, the dip in bed availability for women made entry especially challenging.

> I've called detox places and I can't even get beds anymore during the pandemic. Males get beds easier.
>
> (Participant 66, 36 yo, Female, White)

3.2.2. Accessibility

Several participants reported geographic barriers to accessing substance use treatment. Specifically, 8 out of the 28 participants reported facing significant challenges with transportation or living too far from an available clinic that dispenses MOUD.

> The methadone clinic was too far away. It was a long distance that I had to travel and it was hard to get there. They offered resources but it was a real big process to go through and it was hard.
>
> (Participant 87, 38 yo, Male, Black)

Several participants stated being unable to access public transportation due to financial distress stemming from a lack of employment and housing instability. One said,

> It was hard to get to the clinic. I'd have to buy a bus pass but I don't have money. Without a job and being homeless, it's hard being without any money. I stay in Dorchester or way out in Brockton. So getting transportation from there was hard.
>
> (Participant 37, 55 yo, Male, Black)

A couple of participants noted challenges accessing medically supervised inpatient withdrawal management centers due to geographic and transportation barriers. One participant said,

> Sometimes it's hard to get into detox because if you don't have a ride, you can't get there.
>
> (Participant 37, 55 yo, Male, Black)

3.2.3. Accommodation

Two themes emerged under the accommodation dimension. The first theme pertained to the cumbersome treatment schedule. According to federal opioid treatment standards, facilities must administer methadone daily to patients, under supervision, during the initial treatment phase. Many individuals in our study sample felt that the daily schedule and limited opening hours of the methadone clinic made it challenging to engage with especially if they had other important responsibilities such as employment or childcare.

> Taking methadone sucked. I had to revolve my life around it. I had to make sure I got up every morning to go. I have a newborn child. It's hard.
>
> (Participant 68, 45 yo, Female, White)

Enrolling in a methadone clinic also made it challenging to make any out-of-town plans, which for some, was a barrier.

> I didn't like having to go to the methadone clinic every day. It kind of hinders everything. You can't leave. You can't go out for the weekend and stay away for the weekend. You have to stay in the town you're in. I didn't like it. You have to be in one place for quite a while.
>
> (Participant 81, 29 yo, Male, White)

The second theme that emerged under accommodation is lost or stolen medications. Individuals experiencing homelessness or those living in emergency housing shelters may face great difficulty when it comes to their personal safety and securing their personal belongings. Consequently, it is not uncommon that individuals either lose or have their medications stolen. Providers may or may not be accommodating about medication refills for lost or stolen medications for OUD, which may lead to punitive measures or abrupt treatment discontinuation.

For example, one participant shared about how, when his methadone was stolen from him, he was required to revert to daily methadone clinic visits as opposed to twice a month:

> Well, the messed up part is having to come in every day. I tried to do take-home methadone but the bottles got stolen from me. When I tried to explain what happened at the clinic, they didn't want to hear it. So now I have to go in every day instead of twice a month. That take home is an incentive, because you don't have to come in every day. Every day I get here before 11 o'clock, and get out around one o'clock. So it can be somewhat of a bitch doing that, coming in.
>
> (Participant 17, 64 yo, Male, Black)

Another participant shared with us about the difficulties he had getting refills for buprenorphine/naloxone after his medications were stolen. His response highlights the assumptions providers might have when encountering individuals experiencing homelessness who have lost their medications and how it may discourage or even disrupt continuation of treatment.

> At the emergency room, the staff there treat you like an addict. That stigma is definitely there. I don't like it. I think it is depressing. It causes anxiety. They make you feel like you're not worthy of being in the emergency room. They'll give you Suboxone but they say don't come back again tomorrow for it. And it's like, well, someone stole my meds. What am I supposed to do?
>
> (Participant 83, 38 yo, Male, White, YES active tx, YES hx of buprenorphine)

3.2.4. Acceptability

Four themes emerged under the acceptability dimension. One theme pertained to the fear of adverse effects of MOUD. While many known side effects of opioid agonist treatment exist such as constipation, drowsiness, and nausea, the fears that participants expressed related to other aspects of the medication use. Specifically, expressed fears included fear of precipitated withdrawal from buprenorphine, fear of being around people in treatment, and fear of possible overdose from MOUDs.

Buprenorphine induction can lead to precipitated withdrawal if taken too early after the last use of an opioid agonist such as heroin or fentanyl. Mitigation of precipitated withdrawal is especially challenging with the emergence of fentanyl given its prolonged half-life. For some individuals, the experience of withdrawal was so severe that it deterred them from wanting to try buprenorphine again.

> I took a Suboxone film and I got the immediate withdrawal one time. I had a vicious detox that happened right after, and it gave me trauma, so I am unable to use the stuff. I can't smell it. I can't be around it. Or I vomit from the trauma. I took it too soon after I used.
>
> (Participant 40, 36 yo, Male, White)

> It was a bad experience. I took it at the wrong time. I took it too early. After that I never went back to it again.
>
> (Participant 52, 55 yo, Male, Black)

Participants also expressed the fear of being around those in treatment. It is possible that this fear stemmed in part from social anxiety and engaging in community-based treatments. One participant said,

> I have been using for so long that I am scared to deal with life on life's terms. I think I'm weird, or something's wrong with me. I'm not very good at people interactions. I just like to look forward to being alone. The change or unknown, and having to be around people in treatment, is scary.
>
> (Participant 90, 36 yo, Female, American Indian)

In addition, participants reported being fearful of MOUDs after hearing about people who overdosed while taking them. One said,

> I'm scared that I'm going to end up overdosing on the Suboxone, on the methadone, and the heroin, and the crack, and cocaine, everything. Sometimes I just feel that, "Oh my God, is this too much?" I heard about some people who had overdosed.
>
> (Participant 38, 52 yo, Female, Hispanic)

Other individuals were fearful of taking methadone after hearing about specific adverse effects such as stunted growth, teeth rotting, weakening of bones, and impotence.

> When you take methadone for many, many years, you can lose your teeth. I got a friend, he can't walk from the bones because methadone broke his bones. I have another friend in Puerto Rico, he can't go to work because he can't walk anymore. When he tries to walk, he falls over. It's because of methadone. It got many consequences, after you use it for many years. I also heard about another guy who is impotent when he uses methadone. He can't produce sperm, the penis doesn't get hard.
>
> (Participant 78, 38 yo, Male, Hispanic)

Other participants expressed concerns about MOUD's potentially adverse effects on mental health.

> I'm worried about my bipolar and stuff like that. I don't know how I would react to meds, how meds could affect my mental illness.
>
> (Participant 7, 32 yo, Female, Black)

> Pills aren't good for anyone and they can mess up your mind. Maybe it can help people but if it's the wrong stuff then they can take your mind elsewhere. It'll continue to bring us back out into this mess.
>
> (Participant 37, 55 yo, Male, Black)

Interestingly, we noted a difference in these beliefs by respondents' race and ethnicity. We found that while none of the respondents who self-identified as White reported being afraid of taking MOUD, more than a third of the non-White respondents ($N = 6/17$, 35 %) did. Similarly, 35 % of the non-White respondents ($N = 6/17$) expressed beliefs that MOUD has bad side effects, compared to only 11 % of White respondents ($N = 1/9$).

The second theme under the acceptability dimension pertained to the belief that taking MOUDs replaces one addiction for another. Some participants expressed that underlying this belief was that MOUDs are opioid agonists, just as illicit substances are, require long-term or lifelong treatment, and are associated with illegal activity. Some of these beliefs seemed to concern opioid agonist treatment such as methadone or buprenorphine products, more so than the opioid antagonist naltrexone. One participant also perceived that buprenorphine or methadone was addictive.

> Suboxone, that stuff is addictive too. People get addicted to Suboxone. It's supposed to stop your addiction or you getting high from dope, but people have addictions. It's just another addiction.
>
> (Participant 7, 32 yo, Female, Black)

Participants also feared having to be on MOUD for life. To this end, one participant mentioned that he would have appreciated a discussion about the long-term use of MOUDs with clinicians, before starting treatment.

> If they [providers] know that this treatment is something that you're going to have to take for life, they are supposed to tell you that. But they don't tell you that this is for life. Sometimes you go up more [in dosage] and when you want to quit, you can't because you got this methadone in your system and when you try to quit, you get sick. So I

think they should tell people that, and not just go up and up like Vivitrol. I've never used it, but people told me that it's the best.

(Participant 32, 29 yo, Male, Hispanic)

Another participant also felt that buprenorphine/naloxone was associated with illegal activity. Consequently, it was difficult to think about taking buprenorphine/naloxone as truly engaging in recovery.

I don't think Suboxone is effective because when I want to use, I take that shit and sell it in the streets to get my heroin. Every addict knows how to do this process. I think it has too much illegal activity along with it. I think that people will say that they're taking it and never have touched it. I think that it's just another substance added to the street to criminalize people. I mean, people are out here selling their fucking scripts. It's just another drug to people. It's a drug, another drug, and people are addicted just to Suboxone. These things can become dangerous. You can overdose if you don't use it properly or use a proper amount. Some people have that reaction if they don't give it enough time, they go into withdrawal. I know a lot of people out here using Suboxone just to get scripts and earn a little money. They use it so they're not dope sick, if they have a crack habit. I think treatment centers could be more supervised and more carefully run, it's like people are picking up drugs from their dealer. I think people should fight more for it to show their commitment, because these drugs are expensive and there are people that really will fight to have them and they're not getting it because of financial circumstances or whatever.

(Participant 90, 36 yo, Female, American Indian)

Thus, some participants felt that an advantage that methadone has over buprenorphine was the supervised administration of the medication, despite perceptions that treatment schedule for methadone could also be burdensome.

People I know will sell their Suboxone and then not have anything and be sick. People on methadone, you go in, you take it, you come out, and you can actually go two days not going to the clinic and you won't be sick. Suboxone, you got to stay on top of that. And you got to have a script of it every week and someone could take that. Or you could just say, I'm just going to sell two bottles and buy some dope. With methadone, you can't do that.

(Participant 25, 39 yo, Female, White)

The third theme under the acceptability dimension pertained to community disapproval of taking MOUD. The two most expressed reasons for not taking MOUD related to the community were perceptions that taking MOUD was at odds with personal religious beliefs and stigma that their family had toward these medications.

Some individuals expressed that their religious beliefs were directly at odds with taking MOUD. One participant who identified his Muslim faith said,

I'm Muslim. It's strongly forbidden even to smoke cigarettes. So to do the drug thing, that's even more so. It isn't that they're strongly against anything, like medications to take for opioid disorder. But anything that's going to cause you to get a habit, in exchange for another habit, that's forbidden.

(Participant 17, 64 yo, Male, Black)

For others, their religion did not forbid taking MOUD, but it was seen as a weakness or a lack of trust in their higher power.

I trust in God. Why would I want to use any other drugs if God can help me? Only God can help me, and then I can help myself.

(Participant 37, 55 yo, Male, Black)

Disapproval from family members also posed a deterrent for some. The stigma around opioid agonist treatment seemed to have formed unfavorable opinions about MOUD among family members.

My family is just not in my life right now. Even when I was not using and taking other medications, they would tell me that it was still a narcotic. They're pretty nasty with me. They think they know it all because they're older than me. While they drink every day, it's not okay for me to take medication every day. It makes no sense.

(Participant 83, 38 yo, Male, White)

The fourth theme under the acceptability dimension pertained to negative experiences concerning neglect and discrimination at treatment clinics. Participants expressed feeling that they were differentially treated based on race and/or gender, in terms of being given substance use resources in inpatient withdrawal management centers, dosed in methadone clinics, and admitted to medically supervised withdrawal management.

There's racism every day. When you're Black or Hispanic, they don't want to treat you. They give you the run-around. Go over here, go over here, but if you're white you get more treatment than anybody. It aggravates me. When you walk into a detox or a treatment facility and you say, "I need help for this addiction" and they'd be like, "we don't have those services here." But if you're white and you're right behind me, everybody be like, "Come on in, we can help you." The color of my skin dictates everything: job employment, resources in detox, any help that I want. They think all Black people, or Hispanic people are addicts. We're no different than the next person.

(Participant 89, 37 yo, Male, Black)

At the methadone clinic, they pick who they want to give shit to, who they want to help. If I come in there kind of fucked up, they won't touch me. But the white people, they come in there fucked up, I mean, literally fucked up, they dose them. I've seen it on other people too. A lot of people be saying it, that the same thing happened to them. So I've seen it a couple of times and other people of color have told me the same thing.

(Participant 17, 64 yo, Male, Black)

Several individuals also noted discrimination against cisgender females when receiving substance use treatment.

And they treat us women differently. This is just my thought but it's like we shouldn't be out here because we're women. One doctor in the emergency room said, "You should be at home taking care of kids and not on the streets." That wasn't a good feeling. I wasn't there because of my using, I was there because my bones were hurting. I had an infection in the bone.

(Participant 38, 52 yo, Female, Hispanic)

One individual shared about the lived discriminatory experiences that she faced as a transgender woman.

I've experienced discrimination because I'm a transgender woman. They think we are freaks and we don't live a normal life. It's happened in many ways.

(Participant 24, 58 yo, Trans, Hispanic)

Individuals also reported feeling neglected in various clinical settings, including the emergency room and the methadone clinic. They discussed long wait times and feeling stigmatized because of their addiction.

In the emergency room, they let me stay sick for hours. I felt neglected. I said I would leave and they said, "go ahead." They didn't seem to care. They didn't want to help.

(Participant 40, 36 yo, Male, White)

> At the emergency room, the staff there treat you like an addict. That stigma is definitely there. I don't like it. I think it is depressing. It causes anxiety. They make you feel like you're not worthy of being in the emergency room. They'll give you Suboxone but they say don't come back again tomorrow for it. And it's like, well, someone stole my meds. What am I supposed to do?
>
> (Participant 83, 38 yo, Male, White)

> At the methadone clinic, there was very minimal talk. It was just like come and go. It was not personalized at all. It made me feel anxious that it wasn't working. I wanted to get better and get things moving, like getting pills and medication. But they just had me wait forever. It just made me want to leave.
>
> (Participant 40, 36 yo, Male, White)

4. Discussion

Our study examines access challenges to OUD treatment that are encountered by individuals experiencing homelessness in the context of the COVID-19 pandemic. We recruited individuals on the streets of Boston, which allowed for greater reach among those not in active substance use treatment. Surprisingly none of the participants reported being prescribed sublingual buprenorphine or buprenorphine/naloxone, which are widely considered first-line treatment for OUD (American Society of Addiction Medicine, 2015; Bruneau et al., 2018). Our study highlights a few access challenges with potential clinical and policy implications. First, participants faced an inability to access existing treatment services due to a shortage of treatment beds, transportation issues, or lack of accommodating treatment regimens. Second, they had apprehension about taking MOUD due to potential adverse effects, such as fear of overdose, precipitated withdrawal from buprenorphine, or beliefs that it may be replacing one addiction for another. Third, racial disparities likely led to further inequality in access to treatment.

4.1. Inability to access existing treatment services

Participants in our study highlighted shortages in inpatient managed withdrawal beds especially among women, further exacerbated by the COVID-19 pandemic. A recent qualitative study also performed in Boston among patients in an inpatient managed withdrawal center similarly suggested that capacity issues with inpatient managed withdrawal and residential treatment centers served as barriers to access (David et al., 2022). Another study found that areas with a higher proportion of Black or Hispanic residents had significantly lower odds of offering hospital-based programs for OUD (Chang et al., 2022). Although differential access across genders was not discussed in prior studies, this is a theme that emerged from our study and would benefit from further research and programmatic change to ensure availability of inpatient managed withdrawal beds, especially among women. Policies should implement measures that ensure adequate substance use treatment capacity even during unprecedented events such as the COVID-19 pandemic.

Participants also brought up transportation challenges, stating that either the nearest substance use treatment clinic was too far or that they could not afford public transportation to their methadone clinics or inpatient withdrawal management. Transportation has been shown in several other studies to be a major barrier to accessing care among individuals experiencing homelessness associated with a lower density of buprenorphine prescribers in lower-income areas (Chatterjee et al., 2018). Institutions and policymakers should continue to disseminate resources, such as vouchers, to facilitate transportation to substance use treatment services. Policymakers should also consider expanding access to broadband and other telehealth supportive technologies (Clark et al., 2021; Hsu et al., 2020, 2022) and other creative ways such as subsidies and incentives to support buprenorphine prescribing in lower income areas (Hansen et al., 2016). While the regimented daily schedule of methadone dispensing may be a welcomed structure for some, many participants felt this rigidity precluded engagement in treatment. Employment, travel, and childcare are difficult to carry on while in treatment yet are important for human flourishing. Prior qualitative studies also reported accommodation challenges with methadone clinics among those experiencing homelessness (Chatterjee et al., 2018) and this was a reason some patients choose buprenorphine over methadone (Checkley et al., 2022). SAMHSA has proposed multiple interventions to broaden access to methadone such as flexibility in take-home medication use, lowered barriers for admission to opioid treatment programs, and telehealth services which may help address the accommodation challenges to some extent (Substance Abuse and Mental Health Services Administration, 2023).

Participants also expressed lost and stolen medications as an access challenge. Individuals experiencing housing instability often face great difficulty securing personal belongings whether they are staying on the street or in emergency shelters. Not only does losing or having medications stolen directly disrupt treatment, but also providers may be apprehensive about refilling stolen or lost medications due to concerns around diversion or misuse, which could lead to further treatment disruption. Punitive approaches such as rescinding of take-home medication privileges, warnings or threats, or treatment discontinuation may only worsen outcomes, discourage engagement, and potentially lead to relapse. Local and national policymakers such as SAMHSA should consider provisions for patients to store their medications in safe spaces such as a local pharmacy or locker. Addressing risks of lost or stolen medication may improve buprenorphine prescribing and use.

4.2. Acceptability of MOUD

Acceptability of taking MOUD was a concern highlighted by several themes in our study. Firstly, several participants reported fear of precipitated withdrawal from buprenorphine, which for some was uncomfortable and precluded them from trying buprenorphine again. Experiences of precipitated withdrawal contribute to lack of retention in buprenorphine treatment and dropout from research studies (Teruya et al., 2014). To address this, clinicians should be mindful around the timing of buprenorphine induction while balancing early treatment and mitigation of initial withdrawal symptoms with the potential for precipitated withdrawal. This also highlights the importance of discussing the risks of precipitated withdrawal if buprenorphine is taken too soon after discontinuation of full agonist opioid use. Low-dose buprenorphine induction protocols should be considered to minimize risk of withdrawal (Rozylo et al., 2020).

Secondly, participants feared overdosing on both methadone and buprenorphine. Methadone may be dangerous especially when combined with other substances. However, overdose with buprenorphine is rare given its ceiling effect (Pergolizzi et al., 2010). These fears may be accentuated among individuals experiencing homelessness as overdose rates are higher in this population, especially in the area we sampled, and it is not uncommon to witness overdose or oversedation on the streets or in emergency shelters. Clinicians should provide adequate education of the risks of methadone in polypharmacy and the relatively lower risk of buprenorphine overdose which may quell fears and improve engagement.

Thirdly, participants felt that buprenorphine could be replacing one addiction for another or likened to an illicit drug, an aspect that co-authors had heard anecdotally from patients (outside of this field study). Housing instability may accentuate beliefs that buprenorphine is addictive or likened to an illicit drug as several participants reported witnessing individuals buying or selling buprenorphine or buprenorphine/naloxone on the streets or in emergency shelters. Other unhoused participants felt that their religious beliefs conflict with taking MOUD as it may signify a lack of faith, consistent with findings from a qualitative study conducted among recovery community center participants revealing that individuals with spiritual beliefs may be more likely to

hold negative perceptions of MOUD than those without them (Hoffman et al., 2021). As one participant suggested, clinicians should discuss the expected duration of taking buprenorphine up-front to address concerns about dependence on MOUD.

Studies have shown that negative perceptions of MOUD are not just held among individuals experiencing homelessness. Young adults with OUD who were interviewed about their views on MOUD expressed believing that these medications are a "crutch" which could hinder treatment engagement (Bagley et al., 2023) Family and community stigma around MOUD remain barriers to accessing treatment (Cheetham et al., 2022). Providers may also have stigma toward individuals who utilize MOUD especially if they hold abstinence-only beliefs (Madden et al., 2021). Participants also report drug use stigma in treatment clinics and emergency rooms, consistent with prior studies (Hawk et al., 2022; Muncan et al., 2020). Combating stigma around substance use treatment likely requires a multifaceted approach with collaboration with religious organizations, schools, media and public figures, public health officials, and clinicians. Public health education campaigns should be considered to address fear and stigma with taking MOUD. Community engagement and partnerships with faith-based communities may mitigate stigma, engender trust, and address religious conflicts with MOUD (Bellamy et al., 2021).

4.3. Racial disparities

Historically, individuals from low-income and minoritized populations have had reduced access to OUD treatment and poor treatment outcomes (Chunara et al., 2021; Hollander et al., 2021; Lagisetty et al., 2019; Parlier-Ahmad et al., 2022). Consistent with prior studies, non-White participants in our study were less likely than White participants to have been previously prescribed sublingual buprenorphine. The fact that disparities in accessing buprenorphine persisted even in this relatively socioeconomically homogenous sample suggests that race may be a contributing factor. Several participants cited discrimination based on race and gender in accessing substance use resources among patients in inpatient managed withdrawal, and discrimination based on whether patients appeared too inebriated or not to be dosed in methadone clinics, and who was able to get beds at inpatient withdrawal centers. Racism and discrimination can engender mistrust in the healthcare system and serve as barriers to treatment access (Hall et al., 2022). In our study, we also noted that more non-White respondents reported fear of taking MOUD and believing that MOUD has bad side effects compared to White participants. One prior study interviewing diverse patients in office-based substance use practices found that many Black, Latino and/or patients of lower income experienced office-based settings for buprenorphine as "isolating", expressing difficulty connecting interpersonally with their provider, most of whom were White and/or with higher SES. Meanwhile, White patients and those with higher SES appreciated the "confidentiality" and "medical focus" of office-based practices (Hatcher et al., 2018). Fears that BIPOC patients face may be rooted in several factors including structural vulnerabilities, provider implicit biases, and patient perceptions based on cultural or religious beliefs. Organizations will need to examine system- and individual-level factors that contribute to discrimination and address them accordingly (Matsuzaka & Knapp, 2020).

4.4. Limitations

Our study has several limitations. First, due to a small sample size, we did not have the statistical power to examine the differences in access challenges across patient demographics such as race. Second, our sample was taken from one region of Boston in and around the Boston Public Health Commission Engagement Center. Consequently, findings may not be generalized to other areas of the United States or abroad. However, this study still reveals timely insights about access challenges for those experiencing housing instability, especially given the lack of prior research in this area. Relatedly, a little more than one third of the individuals that we approached agreed to participate. Our findings may not reflect the perspectives of those who chose not to participate. Finally, since our study only assesses patients' perspectives, we likely missed institutional barriers to access such as implicit biases in clinical practice, guidelines, or payer reimbursement. Still, eliciting the voice of marginalized populations to address system factors such as access to treatment remains essential.

5. Conclusion

Acceptability, availability, accessibility, and accommodation of substance use treatment services all play a role in access challenges to substance use treatment among individuals with OUD experiencing housing instability. Disparities in buprenorphine access across race and ethnicity persist even in a socioeconomically homogenous population of individuals experiencing housing instability. Structural and systematic factors likely contribute to inequitable distribution of MOUD services (including inpatient managed withdrawal treatment) and fear of taking MOUD particularly among individuals of color. Future research should explore themes around clinician bias in prescribing buprenorphine. Larger descriptive studies are needed to further characterize regional differences in OUD treatment access and experiences and explore drivers of racial and socioeconomic disparities in substance use treatment access.

CRediT authorship contribution statement

Michael Hsu: Conceptualization, Formal analysis, Investigation, Methodology, Writing – original draft. **Olivia S. Jung:** Formal analysis, Investigation, Methodology, Writing – review & editing. **Li Ting Kwan:** Formal analysis, Investigation, Writing – review & editing. **Oluwole Jegede:** Writing – review & editing, Supervision. **Bianca Martin:** Formal analysis, Writing – review & editing. **Aniket Malhotra:** Writing – review & editing. **Joji Suzuki:** Supervision, Methodology, Writing – review & editing.

Declaration of competing interest

No conflicts of interest reported.

Acknowledgements

We thank all the individuals who participated in interviews and graciously shared their time and thoughts. We also thank Boston Public Health Commission Engagement Center staff who allowed us to use the center's space. This study was funded in part by an American Psychiatric Association (APA)/Substance Abuse and Mental Health Association (SAMHSA) Minority Fellowship Program grant (1H79SM080388-01).

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.josat.2023.209216.

References

Alexander, K., Pogorzelska-Maziarz, M., Gerolamo, A., Hassen, N., Kelly, E. L., & Rising, K. L. (2021). The impact of COVID-19 on healthcare delivery for people who use opioids: A scoping review. *Substance Abuse Treatment, Prevention, and Policy, 16* (1), 60. https://doi.org/10.1186/s13011-021-00395-6

Altekruse, S. F., Cosgrove, C. M., Altekruse, W. C., Jenkins, R. A., & Blanco, C. (2020). Socioeconomic risk factors for fatal opioid overdoses in the United States: Findings from the Mortality Disparities in American Communities Study (MDAC). *PLoS One, 15*(1), Article e0227966. https://doi.org/10.1371/journal.pone.0227966

American Society of Addiction Medicine. (2015). National practice guideline for the use of medications in the treatment of addiction involving opioid use. https://www.as

am.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-pocketguide.pdf?sfvrsn=35ee6fc2_0.
Atwood, E. C., Sollender, G., Hsu, E., Arsnow, C., Flanagan, V., Celenza, J., … Holmes, A. V. (2016). A qualitative study of family experience with hospitalization for neonatal abstinence syndrome. *Hospital Pediatrics, 6*(10), 626–632. https://doi.org/10.1542/hpeds.2016-0024
Bagley, S. M., Schoenberger, S. F., dellaBitta, V., Lunze, K., Barron, K., Hadland, S. E., & Park, T. W. (2023). Ambivalence and stigma beliefs about medication treatment among young adults with opioid use disorder: A qualitative exploration of young adults' perspectives. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 72*(1), 105–110. https://doi.org/10.1016/j.jadohealth.2022.08.026
Bellamy, C. D., Costa, M., Wyatt, J., Mathis, M., Sloan, A., Budge, M., … Jordan, A. (2021). A collaborative culturally-centered and community-driven faith-based opioid recovery initiative: The Imani Breakthrough project. *Social Work in Mental Health, 19*(6), 558–567. https://doi.org/10.1080/15332985.2021.1930329
Berg, B. (2001). *Qualitative research methods for social sciences* (4th ed.). Pearson Educational Company http://www.pearson.com/content/one-dot-com/one-dot-com/us/en/higher-education/product.html.
Bruneau, J., Ahamad, K., Goyer, M.-È., Poulin, G., Selby, P., Fischer, B., … Wood, E. (2018). Management of opioid use disorders: A national clinical practice guideline. *CMAJ: Canadian Medical Association Journal, 190*(9), E247–E257. https://doi.org/10.1503/cmaj.170958
Caris, L., & Beckers, T. (2022). Accessibility of substance use treatment: A qualitative study from the non-service users' perspective. *Journal of Substance Abuse Treatment, 141*. https://doi.org/10.1016/j.jsat.2022.108779
Chang, J. E., Franz, B., Cronin, C. E., Lindenfeld, Z., Lai, A. Y., & Pagán, J. A. (2022). Racial/ethnic disparities in the availability of hospital based opioid use disorder treatment. *Journal of Substance Abuse Treatment, 138*, Article 108719. https://doi.org/10.1016/j.jsat.2022.108719
Chatterjee, A., Yu, E. J., & Tishberg, L. (2018). Exploring opioid use disorder, its impact, and treatment among individuals experiencing homelessness as part of a family. *Drug and Alcohol Dependence, 188*, 161–168. https://doi.org/10.1016/j.drugalcdep.2018.04.012
Checkley, L., Steiger, S., & Knight, K. R. (2022). "I wanted something that was more flexible": A qualitative study of patient preferences on choosing buprenorphine over methadone in a large, safety-net hospital opioid treatment program. *Substance Abuse, 43*(1), 767–773. https://doi.org/10.1080/08897077.2021.2010251
Cheetham, A., Picco, L., Barnett, A., Lubman, D. I., & Nielsen, S. (2022). The impact of stigma on people with opioid use disorder, opioid treatment, and policy. *Substance Abuse and Rehabilitation, 13*, 1–12. https://doi.org/10.2147/SAR.S304566
Chunara, R., Zhao, Y., Chen, J., Lawrence, K., Testa, P. A., Nov, O., & Mann, D. M. (2021). Telemedicine and healthcare disparities: A cohort study in a large healthcare system in New York City during COVID-19. *Journal of the American Medical Informatics Association, 28*(1), 33–41. https://doi.org/10.1093/jamia/ocaa217
Clark, S. A., Davis, C., Wightman, R. S., Wunsch, C., Keeler, L. A. J., Reddy, N., & Samuels, E. A. (2021). Using telehealth to improve buprenorphine access during and after COVID-19: A rapid response initiative in Rhode Island. *Journal of Substance Abuse Treatment, 124*, Article 108283. https://doi.org/10.1016/j.jsat.2021.108283
Corbin, J., & Strauss, A. (2008). Basics of qualitative research. In *Techniques and procedures for developing grounded theory* (3rd ed.). SAGE Publications, Inc.. https://doi.org/10.4135/9781452230153
David, A. R., Sian, C. R., Gebel, C. M., Linas, B. P., Samet, J. H., Sprague Martinez, L. S., … Assoumou, S. A. (2022). Barriers to accessing treatment for substance use after inpatient managed withdrawal (Detox): A qualitative study. *Journal of Substance Abuse Treatment, 142*, Article 108870. https://doi.org/10.1016/j.jsat.2022.108870
Friedman, J., Hansen, H., Bluthenthal, R. N., Harawa, N., Jordan, A., & Beletsky, L. (2021). Growing racial/ethnic disparities in overdose mortality before and during the COVID-19 pandemic in California. *Preventive Medicine, 153*, Article 106845. https://doi.org/10.1016/j.ypmed.2021.106845
Friedman, J. R., & Hansen, H. (2022). Evaluation of increases in drug overdose mortality rates in the US by race and ethnicity before and during the COVID-19 pandemic. *JAMA Psychiatry, 79*(4), 379–381. https://doi.org/10.1001/jamapsychiatry.2022.0004
Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Routledge. https://doi.org/10.4324/9780203793206
Gryczynski, J., Jaffe, J. H., Schwartz, R. P., Dušek, K. A., Gugsa, N., Monroe, C. L., … Mitchell, S. G. (2013). Patient perspectives on choosing buprenorphine over methadone in an urban, equal-access system. *The American Journal on Addictions, 22*(3), 285–291. https://doi.org/10.1111/j.1521-0391.2012.12004.x
Hall, O. T., Jordan, A., Teater, J., Dixon-Shambley, K., McKiever, M. E., Baek, M., … Fielin, D. A. (2022). Experiences of racial discrimination in the medical setting and associations with medical mistrust and expectations of care among black patients seeking addiction treatment. *Journal of Substance Abuse Treatment, 133*, Article 108551. https://doi.org/10.1016/j.jsat.2021.108551
Hansen, H., Siegel, C., Wanderling, J., & DiRocco, D. (2016). Buprenorphine and methadone treatment for opioid dependence by income, ethnicity and race of neighborhoods in New York City. *Drug and Alcohol Dependence, 164*, 14–21. https://doi.org/10.1016/j.drugalcdep.2016.03.028
Hatcher, A. E., Mendoza, S., & Hansen, H. (2018). At the expense of a life: Race, class, and the meaning of bupre-norphine in pharmaceuticalized "care". *Substance Use & Misuse, 53*(2), 301–310. https://doi.org/10.1080/10826084. 2017.1385633
Hawk, K., McCormack, R., Edelman, E. J., Coupet, E., Toledo, N., Gauthier, P., … D'Onofrio, G. (2022). Perspectives about emergency department care encounters among adults with opioid use disorder. *JAMA Network Open, 5*(1), Article e2144955. https://doi.org/10.1001/jamanet-workopen.2021.44955
Hoffman, L. A., Vilsaint, C. L., & Kelly, J. F. (2021). Attitudes toward opioid use disorder pharmacotherapy among recovery community center attendees. *Journal of Substance Abuse Treatment, 131*, Article 108464. https://doi.org/10.1016/j.jsat. 2021.108464
Hollander, M. A. G., Chang, C.-C. H., Douaihy, A. B., Hulsey, E., & Donohue, J. M. (2021). Racial inequity in medication treatment for opioid use disorder: Exploring potential facilitators and barriers to use. *Drug and Alcohol Dependence, 227*, Article 108927. https://doi.org/10.1016/j.drugalcdep.2021.108927
Howard, H. (2016). Experiences of opioid-dependent women in their prenatal and postpartum care: Implications for social workers in health care. *Social Work in Health Care, 55*(1), 61–85. https://doi.org/10.1080/00981389.2015.1078427
Howard, M. B., Wachman, E., Levesque, E. M., Schiff, D. M., Kistin, C. J., & Parker, M. G. (2018). The joys and frustrations of breastfeeding and rooming-in among mothers with opioid use disorder: A qualitative study. *Hospital Pediatrics, 8*(12), 761–768. https://doi.org/10.1542/hpeds.2018-0116
Hsu, M., Ahern, D. K., & Suzuki, J. (2020). Digital phenotyping to enhance substance use treatment during the COVID-19 pandemic. *JMIR Mental Health, 7*(10), Article e21814. https://doi.org/10.2196/21814
Hsu, M., Martin, B., Ahmed, S., Torous, J., & Suzuki, J. (2022). Smartphone ownership, smartphone utilization, and interest in using mental health apps to address substance use disorders: Literature review and cross-sectional survey study across two sites. *JMIR Formative Research, 6*(7), Article e38684. https://doi.org/10.2196/38684
Kariisa, M., Davis, N. L., Kumar, S., Seth, P., Mattson, C. L., Chowdhury, F., & Jones, C. M. (2022). Vital signs: Drug overdose deaths, by selected sociodemographic and social determinants of health characteristics — 25 states and the District of Columbia, 2019–2020. *Morbidity and Mortality Weekly Report, 71*(29), 940–947. https://doi.org/10.15585/mmwr.mm7129e2
Lagisetty, P. A., Ross, R., Bohnert, A., Clay, M., & Maust, D. T. (2019). Buprenorphine treatment divide by race/ethnicity and payment. *JAMA Psychiatry, 76*(9), 979–981. https://doi.org/10.1001/jamapsychiatry.2019.0876
Larochelle, M. R., Slavova, S., Root, E. D., Feaster, D. J., Ward, P. J., Selk, S. C., … Samet, J. H. (2021). Disparities in opioid overdose death trends by race/ethnicity, 2018–2019, from the HEALing Communities study. *American Journal of Public Health, 111*(10), 1851–1854. https://doi.org/10.2105/AJPH.2021.306431
Madden, E. F., Prevedel, S., Light, T., & Sulzer, S. H. (2021). Intervention stigma toward medications for opioid use disorder: A systematic review. *Substance Use & Misuse, 56*(14), 2181–2201. https://doi.org/10.1080/10826084.2021. 1975749
Mason, M., Soliman, R., Kim, H. S., & Post, L. A. (2022). Disparities by sex and race and ethnicity in death rates due to opioid overdose among adults 55 years or older, 1999 to 2019. *JAMA Network Open, 5*(1), Article e2142982. https://doi.org/10.1001/jamanetworkopen.2021.42982
Matsuzaka, S., & Knapp, M. (2020). Anti-racism and substance use treatment: Addiction does not discriminate, but do we? *Journal of Ethnicity in Substance Abuse, 19*(4), 567–593. https://doi.org/10.1080/15332640.2018.1548323
Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed., (2nd ed., Vol. 338, p. xiv). Sage Publications, Inc..
Muncan, B., Walters, S. M., Ezell, J., & Ompad, D. C. (2020). "They look at us like junkies": Influences of drug use stigma on the healthcare engagement of people who inject drugs in New York City. *Harm Reduction Journal, 17*, 53. https://doi.org/10.1186/s12954-020-00399-8
Nguyen, T., Ziedan, E., Simon, K., Miles, J., Crystal, S., Samples, H., & Gupta, S. (2022). Racial and ethnic disparities in buprenorphine and extended-release naltrexone filled prescriptions during the COVID-19 pandemic. *JAMA Network Open, 5*(6), Article e2214765. https://doi.org/10.1001/jamanetworkopen.2022.14765
Ostrach, B., & Leiner, C. (2019). "I didn't want to be on Suboxone at first…" – Ambivalence in perinatal substance use treatment. *Journal of Addiction Medicine, 13*(4), 264. https://doi.org/10.1097/ADM.0000000000000491
Parlier-Ahmad, A. B., Pugh, M., & Martin, C. E. (2022). Treatment outcomes among Black adults receiving medication for opioid use disorder. *Journal of Racial and Ethnic Health Disparities, 9*(4), 1557–1567. https://doi.org/10.1007/s40615-021-01095-4
Penchansky, R., & Thomas, J. W. (1981). The concept of access: Definition and relationship to consumer satisfaction. *Medical Care, 19*(2), 127–140. https://doi.org/10.1097/00005650-198102000-00001
Pergolizzi, J., Aloisi, A. M., Dahan, A., Filitz, J., Langford, R., Likar, R., … Weinbroum, A. A. (2010). Current knowledge of buprenorphine and its unique pharmacological profile. *Pain Practice: The Official Journal of World Institute of Pain, 10*(5), 428–450. https://doi.org/10.1111/j.1533-2500.2010.00378.x
Peterson, J. A., Schwartz, R. P., Mitchell, S. G., Reisinger, H. S., Kelly, S. M., O'Grady, K. E., … Agar, M. H. (2010). Why don't out-of-treatment individuals enter methadone treatment programs? *The International Journal on Drug Policy, 21*(1), 36–42. https://doi.org/10.1016/j.drugpo.2008.07.004
Ramos, N., & Allen, E. (2016, July). *Life and loss on Methadone Mile.* The Boston Globe (/apps.bostonglobe.com/graphics/2016/07/methadone-mile).
Rozylo, J., Mitchell, K., Nikoo, M., Durante, S. E., Barbic, S. P., Lin, D., … Azar, P. (2020). Case report: Successful induction of buprenorphine/naloxone using a microdosing schedule and assertive outreach. *Addiction Science & Clinical Practice, 15*(1), 2. https://doi.org/10.1186/s13722-020-0177-x
Saloner, B., & Lê Cook, B. (2013). Blacks and Hispanics are less likely than whites to complete addiction treatment, largely due to socioeconomic factors. *Health Affairs (Project Hope), 32*(1), 135–145. https://doi.org/10.1377/hlthaff. 2011.0983
Schiff, D. M., Nielsen, T., Hoeppner, B. B., Terplan, M., Hansen, H., Bernson, D., … Taveras, E. M. (2020). Assessment of racial and ethnic disparities in the use of medication to treat opioid use disorder among pregnant women in Massachusetts. *JAMA Network Open, 3*(5), Article e205734. https://doi.org/10.1001/jamanetworkopen.2020.5734
Schiff, D. M., Work, E. C., Muftu, S., Partridge, S., MacMillan, K. D. L., Gray, J. R., … Bernstein, J. (2022). "You have to take this medication, but then you get punished

for taking it:" lack of agency, choice, and fear of medications to treat opioid use disorder across the perinatal period. *Journal of Substance Abuse Treatment, 139*, Article 108765. https://doi.org/10.1016/j.jsat.2022.108765

Silverstein, S. M., Daniulaityte, R., Martins, S. S., Miller, S. C., & Carlson, R. G. (2019). "Everything is not right anymore": Buprenorphine experiences in an era of illicit fentanyl. *The International Journal on Drug Policy, 74*, 76–83. https://doi.org/10.1016/j.drugpo.2019.09.003

Substance Abuse and Mental Health Services Administration. (2023). *The Physical Evaluation of Patients Who Will Be Treated With Buprenorphine at Opioid Treatment Programs*. https://www.samhsa.gov/medications-substance-use-disorders/statutes-regulations-guidelines/buprenorphine-at-opioid-treatment-programs.

Teruya, C., Schwartz, R. P., Mitchell, S. G., Hasson, A. L., Thomas, C., Buoncristiani, S. H., … Ling, W. (2014). Patient perspectives on buprenorphine/naloxone: A qualitative study of retention during the Starting Treatment with Agonist Replacement Therapies (START) study. *Journal of Psychoactive Drugs, 46*(5), 412–426. https://doi.org/10.1080/02791072.2014.921743

Woolf, S. H., & Schoomaker, H. (2019). Life expectancy and mortality rates in the United States, 1959–2017. *JAMA, 322*(20), 1996–2016. https://doi.org/10.1001/jama.2019.16932

Yang, J., Landrum, M. B., Zhou, L., & Busch, A. B. (2020). Disparities in outpatient visits for mental health and/or substance use disorders during the COVID surge and partial reopening in Massachusetts. *General Hospital Psychiatry, 67*, 100–106. https://doi.org/10.1016/j.genhosppsych.2020.09.004