

Understanding the Barriers to Prescribing Buprenorphine in Massachusetts

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Background: The Centers for Disease Control and Prevention (CDC) and other U.S. government agencies have reported over 2 million Americans currently suffer from opioid use disorder. Assisting those with opioid use disorder is a national problem that needs more attention and commitment. One approach that shows promise is the use of medication-assisted treatment (MAT) for those with opioid use disorder.

Objectives: This study focused on the barriers that limit the number of prescribers of buprenorphine in Massachusetts.

Design and Participants: The researchers sent two questionnaires, made follow-up phone calls as appropriate, and sent emails to the 1300 providers in Massachusetts who were publicly available in the Substance Abuse and Mental Health Services Administration (SAMSHA) website and who have waivers to prescribe buprenorphine.

Measures and Results: Among the prescribers, payment and pharmacy issues were significant barriers faced by prescribers (OR 14.441; 95% CI 3.660 - 56.981). Among the non-prescribers, significant barriers were low demand (OR 0.305; 95% CI 0.096 - 0.965) and insufficient knowledge (OR 0.117; 95% CI 0.032 - 0.429).

Conclusion: There have been many changes in the landscape of opioid epidemic in the past 13 years since the 2005 study of Walley, *et al.* However, many barriers still exist and need to be removed to improve the current opioid epidemic, and this includes the limited number of prescribers and thus limited access to the medication assisted treatment buprenorphine.

Keywords: Buprenorphine; Massachusetts; Medication-assisted Treatment (MAT)

Introduction

The increased number of overdose deaths involving opioid use in the United States has been a major national problem that shows no signs of abating. According to the Centers for Disease Control and Prevention (CDC), 130 Americans on average die every day due to opioid overdose, and the data from 2017 indicates this figure is continuing to increase [1].

There are many factors that may contribute to the opioid epidemic. A John Hopkins University study attributed that one of the root causes of this health care crisis is the overprescribing pattern that developed once pain was recognized as the fifth vital sign by American medical professionals in the mid-1990s [2]. This well-intended decision opened the door for an increased use of prescription opioids and ultimately an increase in patients with OUD.

OUD is a chronic disease, like heart disease or diabetes, and must be managed with ongoing care. When long-term care is

properly provided and utilized, those with OUD may regain a healthy, productive life. Currently, one evidence-based approach to treat OUD that shows significant promise is Medication-Assisted Treatment (MAT). MAT is the use of FDA-approved medications, including methadone, buprenorphine, and naltrexone along with counseling and behavioral therapies to treat opioid use disorder. Among the three medications, buprenorphine (Suboxone) is the most commonly used, due to its better adverse effect profile and easier accessibility compared to methadone or naltrexone [3,4]. In 2014, about 60-65% of Americans receiving MAT were prescribed buprenorphine, making it the most commonly prescribed medication to treat opioid addiction in the United States [5].

Buprenorphine is a partial mu opioid receptor agonist. There are many formulations of buprenorphine. However, to treat OUD, buprenorphine is typically combined with naloxone at a 4:1 ratio, creating a combination known as Suboxone. The combination of buprenorphine and naloxone (hereafter referred as buprenor-

phine) is intended to avoid buprenorphine abuse. The efficacy of buprenorphine to treat OUD has been well-supported [6,7]. Most recently, studies demonstrate that providing a buprenorphine prescription to those who have been taken to an emergency department after an opioid overdose generates positive results and an increase in the rate of these individuals seeking ongoing treatment [8].

Despite the potential benefits from buprenorphine for OUD patients, there are many barriers to buprenorphine access. In the United States, to prescribe buprenorphine, physicians need to undergo an 8-hour training course to obtain a waiver from the Center for Substance Abuse Treatment (CSAT). Additionally, the number of patients that waived physicians may treat at a time is limited, due to the Drug Addiction Treatment Act of 2000 (DATA 2000). In 2016, in an attempt to increase access to buprenorphine, the United States Department of Health and Human Services (HHS) raised the limit on the number of patients who can receive this medication from 100 patients to 275 patients per qualified physician [4]. Additionally, the Comprehensive Addiction and Recovery Act (CARA) in 2016 allowed nurse practitioners and physician assistants to prescribe buprenorphine after finishing a 24-hour training requirement [9]. Buprenorphine prescribers also need to follow CSAT guidelines, which include providing counseling to patients, linkages to other treatment programs such as the methadone clinics, administering the first dose of the induction phase at the office, monitoring for drug adherence, and complying with specific federal record-keeping requirements. These mandatory services are meant to provide holistic care for patients; however, because these services are complex to fulfill, they become barriers to prescribing buprenorphine [10,11].

In 2005, to understand the barriers to prescribing buprenorphine, the Massachusetts Department of Public Health (MDPH) partnered with a team of investigators, led by a Boston University School of Medicine professor, Dr. Alexander Walley, to conduct a survey of the 356 waived buprenorphine prescribers in Massachusetts [12]. This study segmented and analyzed the survey data of all the buprenorphine-waivered providers in 2005 between those who were treating patients (prescribers) versus those who were not currently treating patients (non-prescribers). This study identified multiple barriers that significantly associated with non-prescribing: insufficient institutional support and low patient demand [12].

Many aspects within the landscape of the opioid epidemic have changed in the past 13 years since the 2005 survey was implemented: (1) in 2018, there were roughly 1300 waived buprenorphine prescribers in Massachusetts, (2) the number of patients that waived prescribers may treat has increased from 100 to 275, (3)

nurse practitioners and physician assistants can also be buprenorphine providers, (4) health care professionals and organizations have developed increased knowledge about the opioid epidemic, and (5) despite more resources dedicated for OUD, the number of deaths due to overdose still continues to increase. Due to these noteworthy changes, the authors replicated Walley, *et al.* to identify the most current barriers faced by providers of buprenorphine in order to compare the data with Walley, *et al.* study from 2005.

Methodology

The MCPHS University Institutional Review Board (IRB) approved the research study and survey tools used in Walley, *et al.* study in 2005.

Population

The researchers obtained the list of the 1300 Massachusetts waived providers from the Substance Abuse and Mental Health Services Administration (SAMHSA) website in February 2018. Each waived provider received a mailing package, which included two survey questionnaires. One survey is to be completed by waived providers who are actively prescribing (hereafter referred to as prescribers) and another survey is for those who are not actively prescribing (hereafter referred to as non-prescribers), a stamped return envelope, endorsement letters from two research mentors, and a cover letter. The cover letter explained the purpose of the study, provided instructions on how to complete the survey, and explained why the providers' opinions are needed. The participants chose to respond by mailing or by completing the survey online using the links provided in the cover letter. To increase the response rate, telephone calls were made, and emails were sent to remind the prescribers to complete the survey. No personal information was collected, and no compensation was provided for completing the study.

Data collection

This study replicated the Walley, *et al.* study from 2005 and borrowed Dr. Walley's survey tool. Prescribers were requested to complete a 20-item questionnaire, while non-prescribers were asked to complete a 6-item questionnaire. Both surveys inquired about medical specialty, whether the participant is addiction society certified, practice setting, and the barriers that lead them to not prescribe (or in the case of prescribers, the barriers they face in their practice). The prescribers were also asked about the number of patients they are treating, the criteria that caused them to not accept a patient for buprenorphine treatment, the type of practice provided (detox or maintenance), induction setting, buprenorphine formulation used, patients' behaviors encountered, buprenorphine treatment storage, monitoring practices, methadone program referral, treatment payment method, and technical support utilized.

The data was collected and uploaded into Qualtrics.

Statistical analysis

SPSS version 21 was used for all the statistical analyses. Descriptive analysis was completed for each question administered in the surveys. Multiple logistic regression models were performed. The dependent variable is the prescribing status (prescribers vs. non-prescribers). Independent variables analyzed in this study are medical specialty, addiction society certification, practice setting, and barriers to prescribing buprenorphine. Unadjusted logistic regression models were performed on one independent variable at a time. Adjusted logistic regression analyzed multiple independent variables at the same time. Due to the lack of degree of freedom and small sample size, the barrier categories (low demand, insufficient self-knowledge, insufficient staff knowledge, insufficient nurse support, insufficient office support, lack of institutional support, payment issue and pharmacy issue) were grouped together. Similar barrier categories which may lead to overlapping responses from the participants were grouped together. For instances, “insufficient knowledge” includes insufficient knowledge of both self and staff; “Lack of support” includes lack of support from nurse, general office, or institution. “Payment issues” and “pharmacy issues” were grouped together because of the overlap in the short answers for these categories. For specialties, similar to the Walley, *et al.* study, “psychiatrists” was used as a reference group when comparing the odds of prescribing buprenorphine among the specialties. According to the Kissin, *et al.* study in 2009 (also mentioned in Dr. Walley’s study), being a psychiatrist is a predictor of non-prescribing [13]. Therefore, the Walley, *et al.* study used psychiatrists as a reference group among the specialties. In order to conveniently compare the results of this study to that of Walley, *et al.* the authors also used psychiatrists as the reference group. “Family medicine”, “internist», “pediatrician”, and “OB/GYN” were also grouped together into “primary care physicians.” In addition, the data from providers practicing addiction medicine was excluded because there is a positive correlation between addiction medicine providers and buprenorphine prescribing patterns.

Results

The survey was sent to 1300 different addresses registered to the SAMHSA website. Among those, 116 addresses were duplicates, and 126 pieces of mail were returned. Two hundred and nine (20%) responses were received from mailings and the online survey. Among them, 175 (84%) responses were from active prescribers

and 34 (16%) were from non-prescribers (Figure 1). Comparing to the sample size in 2005, Walley, *et al.* study has higher response rate (72%) with 66% of respondents are buprenorphine prescribers and 34% are non-prescribers.

Figure 1

Characteristics and barriers among the 209 participants

For specialty, the largest category of prescribers were family medicine practitioners (33%), while the largest groups of the non-prescribers were internists and nurses (24% and 23% respectively). Contrastingly, in Dr. Walley’s study, both prescribers and non-prescribers were mostly psychiatrists (47% and 67% accordingly). In addition, there are more healthcare providers who registered to prescribe buprenorphine compared to the Walley, *et al.* study in 2005. Some of the other specialties not mentioned in the Walley, *et al.* study included nurse practitioners, physician assistants, and addiction medicine specialists.

For practice setting, 21% of prescribers have a solo practice setting versus 18% of non-prescribers. Compared to the study of Walley, *et al.* this study has a comparable portion of non-prescribers in solo practice compared to the Walley, *et al.* study. For addiction society certification, 28% of prescribers are certified, while only 7% of non-prescribers are certified.

For the barriers, the most common barriers perceived among prescribers are payment issues and pharmacy issues (33% and 44% respectively). In contrast, in the Walley, *et al.* study, most pre-

scribers faced payment issues (21%) and insufficient nursing support (16%) as barriers to prescribing buprenorphine. In this study, for non-prescribers, the biggest barriers are low demand (26%), insufficient office support (24%) and lack of institutional support (26%). In comparison, most non-prescribers in the Walley,

et al. study reported barriers regarding insufficient office support (30%), insufficient nursing support (27%) and lack of institutional support (24%). The detailed characteristics of 209 buprenorphine providers for this study are provided in table 1.

	Total n (%)		Prescribers n (%)		Non-prescribers n (%)	
	Current study	Walley, <i>et al.</i>	Current study	Walley, <i>et al.</i>	Current study	Walley, <i>et al.</i>
Total	209 (100)	235 (100)	175 (84)	156 (66)	34 (16)	79 (34)
Specialty						
Psychiatrist	40 (19)	126 (54)	37 (21)	74 (47)	3 (9)	52 (67)
Addiction Medicine	12 (6)	-	11 (6)	-	1 (3)	-
Internist	47 (23)	61 (26)	39 (22)	45 (29)	8 (24)	16 (21)
Family medicine	60 (29)	32 (14)	57 (33)	27 (17)	3 (9)	5(6)
Pediatrician	4 (2)	9 (4)	3 (2)	6 (4)	1 (3)	3 (4)
OB/GYN	7 (3)	-	3 (2)	-	4 (12)	-
Nurse ^a	22 (10)	-	14 (8)	-	8 (23)	-
Physician Assistant	4 (2)	-	4 (0)	-	0 (0)	-
Other ^b	21 (10)	6 (3)	13 (2)	4 (3)	8 (23)	2 (3)
Practice setting						
Solo	43 (21)	58 (26)	37 (21)	46 (30)	6 (18)	12 (16)
Group	166 (79)	69 (74)	138 (79)	107 (70)	28 (82)	62 (84)
Certification^c						
Addiction society certified	50 (25)	55(24)	48 (28)	41 (27)	2 (7)	14 (18)
Barriers^d						
Insufficient nursing support	23 (14)	46 (20)	17 (10)	25 (16)	6 (17)	21 (27)
Insufficient office support	31 (19)	44 (19)	23 (18)	20 (13)	8 (24)	24 (30)
Lack of institutional support	25 (16)	38 (16)	16 (13)	19 (12)	9 (26)	19 (24)
Office staff stigma	21 (13)	11 (5)	19 (15)	11 (7)	2 (6)	0 (0)
Low demand	21 (13)	17 (7)	12 (10)	3 (2)	9 (26)	14 (18)
Insufficient physician knowledge	7 (4)	7 (3)	0 (0)	5 (3)	7 (21)	2 (3)
Insufficient staff knowledge	15 (9)	28 (12)	8 (6)	11 (7)	7 (20)	17 (22)
Payment issues	48 (27)	40 (17)	41 (33)	32 (21)	2 (6)	8 (10)
Pharmacy issues	58 (36)	19(8)	56 (44)	18 (12)	2 (6)	1 (1)

Table 1: Characteristics of 209 office-based respondents waived to prescribe buprenorphine in massachusetts, overall and by prescriber status.

^aNurse includes nurse practitioners and psychiatric and mental health clinical nurse specialist.

^bOther specialties included emergency medicine physicians, pain management, hospitalist, oncology, occupational medicine, women’s health, physiatrist, retired cardiologist, plastic surgeon, clinical pathologist, anatomic and clinical pathology, anesthesiologist, ID specialist, obstetrician.

^c N = 198, 10 with missing data, 4 from non-prescribers and 6 from prescribers.

^d N = 158, 50 with missing data in total, 1 from non-prescribers and 49 from prescribers.

Characteristics of the practices of buprenorphine prescribers

The characteristics of the 175 prescribers in Massachusetts are presented in table 2. More than 50% of the prescribers treat

fewer than 25 patients in their practice. Almost all prescribers (98%) provide maintenance treatment, and only 36% of prescribers provide detox treatment. Prescribers provide multiple options for induction site, with 71% of them having patients complete

buprenorphine induction at home. Ninety-one percent of the prescribers provide a methadone referral if the patients failed or did not qualify for buprenorphine. All prescribers provide some type of monitoring practices, with most of them using drug screens. The mono tablet (buprenorphine without naloxone formulation) is

usually used for induction (7%), pregnant patients (54%), patients with allergy/intolerance (21%), and patient preference (7%). Only 19% of the prescribers reported separate storage of patient’s OUD information from other medical information. Most prescribers accept insurance (97%) for treatment of OUD with buprenorphine.

Treatment practices	N (%)	
	Current Study	Walley, <i>et al.</i>
Number of patients treated^a		
1-10	42 (25)	-
11-25	44 (26)	-
26-50	31 (18)	-
51-100	31 (18)	-
101-200	17 (10)	-
Over 200	5 (3)	-
Mean	-	13.7
Median (IQR)	-	10 (3 - 25.5)
Detox or Maintenance^b		
Detox	60 (36)	12 (8)
Maintenance	166 (98)	62 (41)
Detox and Maintenance	57 (34)	77 (51)
Induction Site^c		
Office	125 (71)	71 (47)
Home	92 (53)	31 (21)
Inpatient	48 (27)	15 (10)
Other	12 (7)	-
Methadone Referral^d		
Methadone program available for referral	159 (91)	131 (86)
Made referrals to methadone program	116 (66)	61 (40)
Monitoring practices^d		
Pill count	121 (69)	67 (43)
Drug screen	169 (97)	128 (82)
Observed dosing	58 (33)	68 (44)
Used mono tablet (buprenorphine alone) for^d		
Induction	12 (7)	15 (10)
Pregnant patients	94 (54)	21 (13)
Patient preference	12 (7)	17 (11)
Allergy/Intolerance	36 (21)	-
OBOT notes stored separate from other records ^e	31 (19)	46 (33)
Accept insurance for buprenorphine ^f	161 (97)	119 (80)

Table 2: Treatment practices of 175 office-based buprenorphine prescribers in Massachusetts.

^a N = 170, 5 with missing data.

^b N = 169, 6 with missing data. Number in Walley, *et al.* represents each category by its own (no overlap).

^c N = 172, 3 with missing data. “Other” included addiction treatment facility, pharmacy. Number in Walley, *et al.* represents each category by its own (no overlap).

^d N = 174, 1 with missing data.

^e N =, 12 with missing data.

^f N =, 9 with missing data.

Factors associated with prescribing status

Unadjusted logistic regression models (Table 3 and 4) demonstrated the odds of being a buprenorphine prescriber based on medical specialty, practice setting, addiction society certification, and barriers described by buprenorphine providers (both prescribers and non-prescribers). In contrast with Walley, *et al.* study, the odds of being a buprenorphine prescriber as a psychiatrist is not lower than other medical specialties in the current study. In fact, nurses and physician assistants have lower odds of prescribing buprenorphine compared to psychiatrist (OR 0.185; 95% CI 0.053 - 0.644). Adjusted logistic regression model predicting prescribing statuses based on the barriers faced by buprenorphine providers are demonstrated in table 5. Factors that lead to non-prescribing pattern are low demand (OR 0.305; 95% CI 0.096 - 0.965) and insufficient knowledge (OR 0.117; 95% CI 0.032 - 0.429). Barriers significantly faced by prescribers are payment and pharmacy issues (OR 14.441; 95% CI 3.660 - 56.981). Insufficient institutional support is also another notable barrier that contributed to non-prescribing pattern with borderline statistically significant result (OR 0.459; 95% CI 0.210 - 1.002).

	OR	95% CI	P-value
PCP vs. Psychiatrist ^a	0.507	0.170 - 1.513	0.223
Nurse/PA vs. Psychiatrist	0.185	0.053 - 0.644	0.008
Other ^b vs. Psychiatrist	0.159	0.045 - 0.562	0.004
Practice Setting			
Solo vs. group practice	1.251	0.482 - 3.246	0.645
Addiction Society Certification			
Addiction society certified vs not certified	0.987	0.974 - 1.000	0.055

Table 3: The odds of being a buprenorphine prescriber based on medical specialty, practice setting and addiction society certification.

^a Primary Care Physicians (PCP) includes family medicine, internist, OB/GYN, and pediatrician.

^b Other includes emergency medicine physicians, pain management, hospitalist, oncology, occupational medicine, women’s health, physiatrist, retired cardiologist, plastic surgeon, clinical pathologist, anatomic and clinical pathology, anesthesiologist, ID specialist, obstetrician.

Barriers			
Low demand	0.281	0.106 - 0.740	0.01
Insufficient knowledge ^a	0.156	0.056 - 0.437	0.00
Insufficient support ^b	0.459	0.210 - 1.002	0.051
Office Staff Stigma	14.196	1.884 - 106.997	0.010
Payment and pharmacy issues	15.200	4.402 - 52.490	0.000

Table 4: The odds faced by prescribers of buprenorphine compared to non-prescribers (Unadjusted logistic regression).

^a Insufficient knowledge includes both insufficient staff knowledge and insufficient provider knowledge.

^b Insufficient support includes insufficient or lack of support from nurses, office and institution.

	OR	95% CI	P-value
Low demand	0.305	0.096 - 0.965	0.043
Insufficient knowledge ^a	0.117	0.032 - 0.429	0.001
Insufficient support ^b	1.014	0.382 - 2.690	0.977
Office Staff Stigma	5.714	0.825 - 39.569	0.077
Payment and pharmacy issues	14.441	3.660 - 56.981	<0.001 (0.000138)

Table 5: The odds of faced by prescribers of buprenorphine compared to non-prescribers (Adjusted logistic regression)^c.

^a Insufficient knowledge includes both insufficient staff knowledge and insufficient provider knowledge.

^b Insufficient support includes insufficient or lack of support from nurses, office and institution.

^c Adjusted for all the barriers include in this table.

Discussion

This study aimed to identify the barriers faced by buprenorphine providers in Massachusetts by replicating the survey done by Walley, *et al.* in 2005. In contrast to the Walley, *et al.* study in 2005, there is no association with a non-prescribing pattern in psychiatrists. In an unadjusted logistic regression model, we found that nurses and physician assistants are less likely to prescribe buprenorphine compared to psychiatrists. Additionally, we found that low demand for buprenorphine and insufficient knowledge (of both staff and the providers) are significant barriers associated with a non-prescribing pattern. In the past study of Walley, *et al.* in 2005, lack of institutional support and low demand were two barriers associated with non-prescribing pattern. Even though insufficient support (from staff and institution) is not a statistically significant barrier associated with a non-prescribing pattern, it is worth noting that a significant portion of both prescribers and non-prescribers reported this barrier. It could be that our study did not reach statistical significance due to lack of power with a small sample size.

Furthermore, this study showed payment and pharmacy issues are significant barriers faced by prescribers. This result was similar to that of the Walley, *et al.* study. In the survey, participants were asked to provide additional details if they selected payment and pharmacy issues as barriers. The common payment issues encountered by the prescribers are lack of insurance and lack of coverage from insurance. For pharmacy issues, the most common problems reported are medication delays due to prior authorization, pharmacy refusal to dispense medication, and not enough buprenorphine in stock.

Addressing the barriers to prescribing buprenorphine is the key to accessibility of this medication and an important step in reducing morbidity and mortality associated with the opioid epidemic. Many studies have demonstrated that by administering buprenorphine on the same day of overdose/diagnosis of OUD, patients are more likely to remain in treatment.⁸ However, currently most patients need to wait to receive treatment due to various reasons, such as not having a local prescriber and being put on waitlist. By reducing barriers to prescribing buprenorphine, we hope to en-

courage more providers to get waived and prescribe this medication, thereby increasing accessibility to this medication. Additionally, OUD is a chronic disease, and relapse can happen at any time. The risk of opioid overdose increases as detoxed patients do not stay on treatment. Barriers such as insurance or prior authorization hinder and delay treatment to patients and put patients at risk for relapse and overdose.

In March of 2019, Kevin Fiscella, M.D., a professor at the University of Rochester and co-director of its Center for Communication and Disparities Research, and Sarah E. Wakeman, M.D., the Medical Director of the Substance Use Disorders Initiative at Massachusetts General Hospital and Assistant Professor of Medicine at Harvard Medical School, wrote an opinion article in *JAMA Psychiatry* titled “Buprenorphine Deregulation and Mainstreaming Treatment for Opioid Use Disorder [14]”. The authors offered that buprenorphine, a partial opioid agonist medication for opioid use disorder (OUD), reduces overdose mortality rates. However, amidst a national epidemic of opioid-related deaths, only 40% of the 2.4 million persons with OUD receive pharmacologic treatment, much less continue treatment. Federal policies surrounding buprenorphine constrain its wider use through separate US Drug Enforcement Agency (DEA)-amended licenses (“waivered”) after approved training. Of note, removing buprenorphine prescribing regulations in France yielded increases in its use by persons with OUD. Furthermore, deaths from opioid overdoses in France declined 79% over the subsequent 3 years. If extrapolated to the United States, this could translate to more than 30,000 fewer annual deaths from opioid overdoses. The authors propose deregulating the prescription of buprenorphine for treating OUD [15].

There are several limitations of the study. First, the response rate in this study is small (20%) compared to the study of Walley, *et al.* A further study with a larger sample size would help confirm the result of this study. Additionally, this study did not clearly define the barrier categories to the participants, which may have led to confusion during completing the survey. We tried to overcome that issue by grouping similar barriers together during our analysis. Finally, this study only identified the barriers faced by waived providers. It is worth noting that there are also obstacles faced by all providers who are trying to become waived.

Conclusion

The evidence is clear that MAT, including buprenorphine, has saved lives and helped many return to a normal functioning life. Overall, there have been positive changes in the landscape of the opioid epidemic since the study of Walley, *et al.* in 2005. With increased awareness and education, laws such as the Comprehensive Addiction and Recovery Act (CARA) have encouraged more health-

care providers to participate in providing buprenorphine treatment. However, in order to improve the current opioid epidemic, more efforts need to be extended to remove the barriers faced by the providers of buprenorphine. Healthcare institutions must recognize the need to make MAT more accessible to patients and create incentives that encourage licensed healthcare providers to get waived and prescribe buprenorphine. Another possibility is to remove the requirements imposed by the federal government for prescribers of buprenorphine to obtain a special waiver. Finally, increasing awareness within both the healthcare profession and general public about the medical condition of OUD and MAT available to effectively treat this disease will be essential.

Author Contributions

PD, CL, and FM conceived the project and designed the research survey. PD completed the literature review. PD completed and FM supervised the field work completed by PD including quality control. PD drafted the manuscript and all authors contributed substantially to its revision. PD, CL, and FM take responsibility for the paper as a whole.

Meetings

None.

Grant

No grants or other financial support was provided.

Conflicts of Interest

None of the authors have any conflicts of interest to report.

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