Counselor Training and Attitudes Toward Pharmacotherapies for Opioid Use Disorder

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Abstract

Background—Methadone and buprenorphine have been demonstrated to be effective in the treatment of opioid use disorder (OUD), especially when combined with psychosocial treatment. Despite buprenorphine's association with fewer withdrawal symptoms and lessened risk of abuse, compared to methadone, its adoption remains limited. Given the vital role that counselors may play in its successful implementation, their knowledge and perceptions of opioid agonist therapy may be facilitators or barriers to its acceptance.

Methods—Informed by diffusion theory, the current study examined perceptions of buprenorphine and methadone acceptability among 725 counselors employed in a nationally representative sample of substance use disorder treatment centers. First, we provided descriptive statistics about medication diffusion, extent of training received about the medications, and perceptions of acceptability of each medication. Then, we compared acceptability of opioid agonists with other treatment approaches for OUD. Finally, we conducted two ordinary least squares regressions to examine counselor acceptability of buprenorphine and of methadone.

Results—Descriptive statistics suggested that diffusion of information about buprenorphine and methadone was not complete, and training was not extensive for either medication. Counselors reported greater acceptability and training of buprenorphine compared to methadone. Methadone was rated as the least acceptable among all other treatment approaches. Multivariate analyses indicated regional differences, and that medication-specific training, adaptability, and educational attainment were positively related with perceptions of acceptability of either medication, even after controlling for organizational characteristics. Adherence to a 12-step orientation was negatively associated with acceptability.

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Conclusions—Dissemination of information about opioid agonist therapy is occurring. Nevertheless, the fact that 20% of counselors admitted not knowing enough about either buprenorphine's or methadone's effectiveness is surprising in light of the extensive literature documenting their effectiveness. Future research should focus upon different types of training that can inform physicians, counselors and patients about the use of opioid agonist therapy.

Keywords

Opioid Agonist Therapy; Methadone; Buprenorphine; Counselor attitudes; Substance Abuse; Opioid Use Disorder; Medication-Assisted Treatment

INTRODUCTION

Delivery of treatment for opioid use disorder (OUD) offers complex challenges. In this paper, we explore a relatively neglected aspect of treatment delivery; the attitudes of counselors toward treatment modalities that are widely regarded as promising and effective. Specifically, we use a nationally representative sample of counselors in substance use disorder (SUD) provider organizations in the U.S. to examine the composition and predictors of their attitudes toward two opioid agonist therapies for OUD, buprenorphine and methadone.

Opioid abuse has been steadily increasing in the U.S.[1–3] Survey data from the Substance Abuse and Mental Health Services Administration (SAMHSA) show that between 2001 and 2011, opioid treatment admissions increased from 18% to 25%.[3] During this period, an epidemic stemming from diversion and abuse of prescription opioids emerged. Thus, opioids other than heroin increased from 2% to 10% of treatment admissions for any substance, and from 12% to 40% of all opioid admissions. This period also saw the widening of the gap between the number of individuals needing OUD treatment and those receiving it.[4]

Opioid agonist therapy is regarded as an effective treatment for OUD, particularly when it is combined with psychosocial treatment.[5–8] Methadone, a full mu-opioid agonist, was approved by the U.S. Food and Drug Administration (FDA) in 1972 for use in treating OUD, and its effectiveness has been demonstrated in multiple studies over the past 4 decades. Nonetheless, the stigma associated with "replacing one addiction with another"[6,9] and the negative ambience of treatment delivery settings are barriers to its use. A more recent innovation, buprenorphine is a partial mu-opioid agonist approved by the FDA in 2002. Buprenorphine treatment is facilitated in office-based settings and outpatient programs that offer greater anonymity and are thus less stigmatizing. Past studies have demonstrated the efficacy of buprenorphine.[10,11] Research suggests that, compared to methadone, buprenorphine is associated with fewer withdrawal symptoms, a lower risk of abuse and overdose, and increased treatment retention.[12–16]

Despite this advance in medication-assisted treatment (MAT), adoption of buprenorphine remains limited.[17] Regulatory and funding issues, the small number of physicians who have acquired waivers and are willing to prescribe buprenorphine, and inconsistency with a treatment program's philosophy[18] are salient barriers to its adoption.[19]

Empirical research suggests that implementation of MAT requires the support of counselors who have direct contact with patients.[20] Even though counselors do not prescribe medications themselves, they may have direct influence on their clients' acceptance of treatment options, and use this influence to encourage or discourage MAT.[21] The extent to which counseling staff is aware of and accepts treatment approaches facilitates the successful implementation of those approaches within treatment centers.[22,23] Thus, we examine counselor attitudes and their antecedents regarding the acceptability of buprenorphine and methadone.

Diffusion theory identifies five key characteristics that influence the adoption of an innovation. Innovations are more likely to be adopted if they have a *relative advantage* over other techniques, have a low degree of *complexity*, offer the opportunity for experimental use before full implementation (*trialability*), have *observable* results, and are *compatible* with potential adopters' existing values.[20]

Consistent with Rogers' concepts of *observability* and *trialability*,[20] having received medication-specific training is associated with counselors' familiarity and acceptance of buprenorphine[24–26] and of methadone.[27] Further, a counselor's opioid caseload provides exposure to clients who would be considered candidates for either medication. Acceptability of MAT hinges on *compatibility* with current values held by an organization's members.[20,28,29] The SUD treatment field has long been dominated by the 12-step approach,[30,31] and utilization of MAT may be seen as challenging to its standard of abstinence from addictive substances.[24] Counselors' endorsement of a 12-step treatment orientation is negatively associated with familiarity with and attitudes toward innovations.[26] Conversely, adaptability or openness for change is positively linked to innovation attitudes and adoption behaviors.[32–34]

Counselors' individual characteristics are also important in predicting medication acceptance. A higher educational attainment facilitates both the acquisition and application of new knowledge.[35] Counselors with greater educational attainment and longer tenure are more likely to be knowledgeable about buprenorphine and report positive beliefs about its effectiveness.[24]

Past studies have demonstrated that organizational characteristics are linked to counselor opinions toward pharmacotherapies. Counselors employed in programs already using buprenorphine[25,26] are more likely to be aware of buprenorphine and rank it favorably. Similarly, counselors employed in centers offering methadone are more likely to be accepting of its use.[19,36] As buprenorphine prescribers allow take-home self-dosing, centers that offer outpatient services may also report greater client interest in buprenorphine. Indeed, research found that counselors working in outpatient centers were more likely to have positive views of buprenorphine in response to this element of client satisfaction.[19]

Finally, recent data indicate that seven out of the ten states with the highest reported rates of illicit prescription opioid use are in the West, while, of the ten states with the lowest reported rates, four are in the South.[37] Counselors working in regions where OUD is prevalent may

have different attitudes toward opioid agonist therapy compared to counselors working in regions with less frequent opioid dependence.

As buprenorphine diffuses in SUD treatment, counselors report greater awareness and acceptance of its use,[24,25] but positive opinions about its use are far from universal. Research from 2002 – 2004 found that 66.5% of the clinical workforce was unaware of buprenorphine's effectiveness.[24] A study using data from 2004 – 2006 found that almost half of counselors were unaware of its effectiveness and 58% rated it as acceptable.[25] While methadone has long been used for OUD, counselors' attitudes concerning its effectiveness and appropriateness also vary. Further, attitudes among opioid-dependent individuals tend to be negative,[9,38,39] although patients appear to rate buprenorphine more positively than they rate methadone.[9] It is likely that patient attitudes reflect spillover from information they receive from counselors.

METHODS

Data for this study were collected between June 2009 and January 2012 from counselors working in a nationally representative sample of 307 treatment programs open to the general public and that offered, at minimum, structured outpatient level of care as defined by the American Society of Addiction Medicine's placement criteria.[40] Eligible treatment programs had a minimum of 25% of their patients with primary diagnoses of alcohol dependence. Individual private practices, transitional living facilities, court-ordered driver education classes, detoxification-only programs, Veterans Administration facilities and correctional facilities, and methadone-only treatment programs were excluded from the study. Treatment programs were randomly selected using SAMHSA's substance abuse treatment facility locator. Sixty-eight percent of treatment programs screened as eligible agreed to participate. Programs screened as ineligible were replaced by a random selection of alternate programs.

Face-to-face interviews were conducted with the administrator and clinical director of each program. At the end of each interview, a list of all SUD counselors employed by the program was obtained from the administrator. The list was used to mail each counselor a packet at their work address containing an invitation, consent form, questionnaire, and a postage-paid return envelope. A $40 incentive was provided for counselors who returned a completed questionnaire. A total of 816 questionnaires were returned, representing a 66% response rate. Aggregate data reported by the administrator on staff demographics revealed that counselors who completed a questionnaire did not differ significantly from the population of counselors employed by the programs. All research procedures were approved by the Institutional Review Board of the University of Georgia.

Measures

Dependent Variables—Counselors were asked how acceptable buprenorphine and methadone, respectively, were as a treatment technique. Responses on each variable ranged from 1 (completely unacceptable) to 7 (very acceptable). Although not included as dependent variables, we also provided information on acceptability of the following MAT and psychosocial treatment approaches for OUD: clonidine (alpha-2 adrenergic agonist),

oral and injectable naltrexone (opioid antagonists), cognitive behavioral therapy, motivational interviewing, contingency management, and community reinforcement approach.

Independent Variables—Two dichotomous diffusion variables were created for buprenorphine and methadone using a question that asked respondents to rate each medication's effectiveness. Counselors who were unaware of a medication's effectiveness were given the option to select "don't know." A dichotomous variable was coded as 0 if a respondent selected "don't know" for the medication and 1 if he/she was able to provide a rating. Training regarding buprenorphine and methadone was measured with two continuous variables measuring the extent to which a counselor had received specific training about each medication (1 = no training received, 7 = extensive training received).

The percentage of a counselor's opioid-dependent caseload was included. Each counselor's 12-step orientation was measured as the mean of three items (α = .82) developed by Kasarabada and colleagues,[41] ranging from 1 – 7, with higher scores indicating a stronger agreement of the 12-step philosophy. Counselor adaptability was measured as the mean of the following four items (α = .85), ranging from 1 (strongly disagree) to 7 (strongly agree): "I like to use new types of therapy/interventions to help my clients;" "I am willing to try new types of therapy/interventions even if I have to follow a treatment manual;" "I am willing to use new and different types of therapy/interventions developed by researchers;" and "I would try a new therapy/intervention even if it were very different from what I am used to doing."

Several professional characteristics were included. Education was a dichotomous measure (1 = Master's degree or higher, 0 = Bachelor's degree or below). We measured the number of years worked in the SUD treatment field as a continuous variable. Dichotomous variables for gender (1 = female, 0 = male) and race (1 = White, non-Hispanic, 0 = other) were included.

Organizational controls were included in our analysis. Two dichotomous measures indicating whether counselors were employed in a treatment program that currently used buprenorphine and methadone, respectively, were included. Profit status was a dichotomous variable (1 = for-profit, 0 = non-profit). We measured program size using the number of full-time equivalent employees, and logged the measure to adjust for positive skew. Two dichotomous variables were included that indicated whether a program offered outpatient services and whether it was hospital-based. Finally, dichotomous measures indicating whether a program was located in the West, Midwest, Northeast, and South were included, with South as the omitted reference category.

Analytic Strategy

First, we provided descriptive statistics for all study variables and compared attitudes toward opioid agonists and other treatment approaches for OUD. Then, we conducted two ordinary least squares (OLS) regressions to examine counselor acceptability of buprenorphine and of methadone. Tests showed no evidence of multi-collinearity among the independent variables. Unlike the questions for effectiveness, the questions about acceptability did not provide the option of selecting "don't know." We repeated acceptability analyses by

excluding respondents who selected "don't know" to buprenorphine or methadone effectiveness and results did not substantively differ. Counselors working in the same treatment program do not have independent observations on the organizational-level variables. To account for non-independence, the regression analyses were conducted using the survey ("svy") set of commands available in Stata 13. These commands account for the effect of clustering in survey samples when calculating the variance, standard errors and confidence intervals, and produce robust standard errors, with the treatment program as the primary sampling unit. After accounting for missing data, the sample for this analysis was 725 counselors. Little's MCAR test indicated that missing values were missing completely at random.

RESULTS

Table 1 shows that 79.3% of counselors were able to rate the effectiveness of buprenorphine, meaning that 20.7% of counselors did not know enough about buprenorphine to provide a rating. Additionally, 68.7% of counselors reported that they did not know whether buprenorphine should be used with adolescents or not (not shown). Similarly, 20.4% of counselors were unable to rate methadone's effectiveness, likely reflecting the small number (5.5%) of counselors working in programs that offered methadone. Results indicated that 28.7% of counselors were employed in a treatment program that prescribed buprenorphine. While we did not ask specific questions about each medication's effectiveness, we found that over 90% (n=138) of the counselors who were unable to provide an effectiveness rating had received little to no medication-specific training (1 – 3 on the training scale). Further, we examined counselors who reported little to no training and found that just 21.8% (n=52) and 12.4% (n=33) provided high scores on the buprenorphine and methadone effectiveness measures, respectively.

The extent of medication-specific training received was limited (M=3.31, SD=2.10 and M=2.86, SD=1.87) for buprenorphine and methadone, respectively, but differences between the two were statistically significant (t=6.66, p<.001).

In terms of perceived acceptability, the average rating for buprenorphine on a scale of 1 – 7 was 4.43 (SD=1.94), while the average rating for methadone was just below the mid-point (M=3.40, SD=1.91). Besides these two medications, counselors rated other MAT and psychosocial interventions (Table 2). T-tests indicated that mean acceptability of methadone was lower than that of every other MAT and psychosocial evidence-based practice (EBP) (p<.001). The mean acceptability rating of buprenorphine was greater than that of methadone and of clonidine, but significantly lower than the mean ratings of the psychosocial EBPs (p<.001). There were no differences between acceptability of buprenorphine and either tablet or injectable naltrexone.

Table 3 reports OLS regression results for the perceived acceptability of the use of buprenorphine. While counselors' reported awareness of buprenorphine's effectiveness was not significantly related to its acceptability, the extent of buprenorphine-specific training was positively associated with attitudes (b=.251, SE=.037, p<.001). Twelve-step orientation was negatively related with perceptions of buprenorphine's acceptability (b=−.170, SE=.047, p<.

001). We also found that the extent of a counselor's adaptability was positively associated with acceptability (b=.131, SE=.062, p<.05), and that counselors with advanced degrees were more likely to report greater acceptability of buprenorphine (b=.362, SE=.148, p<.05). Being employed in a program that prescribed buprenorphine was positively correlated with its acceptability, (b=.515, SE=.195, p< .01), as did working in a program offering outpatient services (b=.665, SE=.261, p<.05). Finally, counselors working in programs in the Midwest had greater acceptance of buprenorphine compared to counselors in the South (b=.506, SE=. 219, p<.05).

Table 4 reports OLS regression results for methadone's perceived acceptability. Similar to the results regarding buprenorphine, training about methadone (b=.137, SE=.039, p<.01), adaptability (b=.113, SE=.055, p<.05), and greater educational attainment (b=.431, SE=.148, p<.01) were each positively associated with perceptions of methadone's acceptability, while 12-step orientation (b=−.192, SE=.044, p<.001) was negatively associated with acceptability. Awareness of methadone's effectiveness (b=−.380, SE=.171, p<.05) and percent opioid caseload (b=−.126, SE=.049, p<.05) were negatively associated with acceptability. Further, counselors in programs that prescribed methadone had more positive attitudes toward it (b=1.602, SE=.347, p<.001), while counselors employed in for-profit (b=−.458, SE=.211, p<.05) and larger organizations (b=−.196, SE=.059, p<.001) were less likely to report greater acceptability of methadone.

DISCUSSION

In this study, we used a nationally representative sample of SUD treatment programs to examine counselors' attitudes toward the use of opioid agonist therapy. We found that dissemination of information is occurring, which is a prerequisite for innovation adoption.[20] Nevertheless, the fact that 20% of counselors admitted not knowing enough about either buprenorphine or methadone's effectiveness is surprising in light of the extensive literature documenting the medications' effectiveness. Lack of knowledge regarding effectiveness is a significant barrier to the acceptance of these treatments in clinical practice.

Acceptance was higher for buprenorphine than it was for methadone, a finding consistent with other research on MAT in drug courts,[42] although the means for both were below the mid-point. This may help partly explain why industry wide adoption rates of these medications remain low. Just 5.6% of counselors were employed in a program that prescribed methadone, 28.6% were employed in a program that prescribed buprenorphine, while 71.4% worked in programs that prescribed neither. Nonetheless, counselors who were employed in organizations that prescribed the medications were significantly more likely to report greater acceptance, a finding consistent with diffusion theory,[20] which states that observability and trialability are crucial components in acceptance of an innovation.

In order to provide the larger context in which these results can be interpreted, we also reported acceptability ratings for other OUD treatment approaches. The stigma facing opioid agonist medications, particularly methadone, due to concerns of diversion, drug substitution, and negative side effects,[43] suggests that they may be seen as less acceptable than other treatment approaches. Indeed, we found that methadone was rated lower than all other MAT.

Buprenorphine was, however, rated as more acceptable than clonidine, a medication sometimes used to ease opioid withdrawal symptoms. As an antagonist treatment, naltrexone is not likely to be diverted, so it does not face the same concerns that agonist medications do. Nevertheless, we found no significant differences between counselors' ratings of buprenorphine and either oral or injectable naltrexone. Not surprisingly, both opioid agonist medications were rated as less acceptable than any of the psychosocial approaches.

Awareness of effectiveness was negatively associated with counselor ratings of the acceptability of methadone. It is possible that these ratings reflect counselor preferences for buprenorphine as an alternative to methadone. Counselors with sufficient knowledge to rate methadone's effectiveness may also be more informed about its limitations. If buprenorphine is viewed as a superior medication, counselors may find the use of methadone as less acceptable. It is also possible that this finding reflects counselors' negative experiences with methadone, as the percentage of a counselor's opioid caseload was also negatively associated with methadone acceptance.

Not surprisingly, training was associated with higher levels of perceived acceptability for both buprenorphine and methadone. This highlights the importance of training, regardless of whether counselors have exposure through the medication's use in their treatment program or not. Consistent with Rogers' arguments regarding compatibility, counselors' agreement with the 12-step philosophy was negatively associated with acceptability. The 12-step approach relies upon abstinence, and this ideology could color counselors' views on the use of opioid agonist medications. Conversely, counselor adaptability has been shown to be related to adoption readiness.[44] We found that it was positively associated with acceptability, suggesting that counselors with higher levels of adaptability may be more open to learning about the benefits of using MAT. These counselors could be targeted as change agents in the diffusion process.[20] There was also a positive relationship between education and perceived acceptability of both medications, suggesting that an increase in education could be related to improving knowledge and perception on MAT in general.

Several limitations of the current study should be noted. First, the cross-sectional data do not allow us to determine causality. Second, data were self-reported and could be subject to response bias. Third, while it can reasonably be assumed that counselors rated the acceptability and effectiveness of each medication for the treatment of the SUD it is specified to treat, the questions did not specify this point. This could have artificially lowered ratings if counselors considered all forms of SUD and felt that methadone and buprenorphine were less effective when considering treatment for SUDs besides opioids. Fourth, while the demographics of the study participants did not significantly differ from counseling workforce figures reported by participating programs, our findings could be subject to selection bias. For example, programs and counselors skeptical of research related to EBPs may be less likely to participate in the study. Nonetheless, given the low rates of adoption of MAT in participating programs, it appears that substantial over-reporting of acceptability is unlikely. Further, recent studies have argued that responses rates may not strongly influence substantive results[45] and may be a weak indicator of nonresponse bias.[46] Finally, programs had to report at least 25% of patient caseloads with a primary diagnosis of alcohol. SAMHSA data report that 18% of SUD patients are treated for alcohol only, while

44% are treated for both alcohol and other drugs.[47] Assuming that even a small percentage of clients treated for alcohol in combination with other drugs are primarily alcohol-dependent, this requirement assured that the sampled treatment centers covered a representative range of patients' SUDs.

The effectiveness of treatment for opioid dependence can be enhanced by the use of opioid agonist therapy. Our study demonstrated that counselors held varying degrees of knowledge and opinions regarding the acceptability of buprenorphine and methadone. A sizable percent reported insufficient knowledge regarding each medication. Further, we identified counselor characteristics, such as training, education, adaptability, and 12-step orientation, organizational, and regional characteristics that were associated with opinions of buprenorphine's and methadone's acceptability. These findings suggest that medication-specific training could be one strategy for encouraging the acceptance and diffusion of opioid agonist medications. Recent data indicate an increase in the use and availability of buprenorphine, particularly in mainstream healthcare settings that may not involve counseling services.[48] Further, recent national policy changes[49] emphasizing integration of SUD services in primary care settings suggest that the role of counselors' opinions will likely shift. Given the changing face of OUD treatment, future research should address the perceptions of office-based physicians and different types of educational techniques that can inform physicians, counselors and patients about the use of opioid agonist treatment.

Acknowledgments

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Table 1

Descriptive statistics (N=725)

	% or *M*	(N) or (SD)	Min.	Max.
Counselor characteristics				
Diffusion (awareness of *buprenorphine's* effectiveness)	79.3%	(575)	0	1
Diffusion (awareness of *methadone's* effectiveness)	79.6%	(577)	0	1
Perceived acceptability of *buprenorphine*	4.43	(1.94)	1	7
Perceived acceptability of *methadone*	3.40	(1.91)	1	7
Extent of training about *buprenorphine*	3.31	(2.10)	1	7
Extent of training about *methadone*	2.86	(1.87)	1	7
% opioid caseload	29.00	(23.33)	0	100
12-step orientation	4.10	(1.73)	1	7
Adaptability	5.44	(1.12)	1	7
Master's degree or higher	47.0%	(341)	0	1
Tenure (years)	9.00	(7.69)	0	40
Female	66.9%	(485)	0	1
White non-Hispanic	76.6%	(555)	0	1
Organizational controls				
Program prescribes *buprenorphine*	28.7%	(208)	0	1
Program prescribes *methadone*	5.5%	(40)	0	1
For-profit program	14.5%	(105)	0	1
Organization size (logged)	3.22	(1.17)	−1.39	5.91
Program offers outpatient services	90.1%	(653)	0	1
Hospital-based program	13.8%	(100)	0	1
Region				
West	30.2%	(219)	0	1
Midwest	31.3%	(227)	0	1
Northeast	14.1%	(102)	0	1
South	24.4%	(177)	0	1

Table 2

Comparisons of acceptability ratings of treatment approaches for opioid use disorder

	M	(SD)	*t*-test results for buprenorphine	*t*-test results for methadone
Medication-Assisted Treatment				
Buprenorphine (mu-opioid partial agonist)	4.43	(1.94)	-	***
Methadone (full mu-opioid agonist)	3.40	(1.91)	***	-
Clonidine (alpha-2 adrenergic agonist)	3.91	(1.92)	***	***
Oral naltrexone (opioid antagonist)	4.43	(1.95)		***
Injectable naltrexone (opioid antagonist)	4.26	(2.05)		***
Psychosocial Treatment				
Cognitive behavioral therapy	6.36	(1.09)	***	***
Motivational interviewing	6.38	(1.03)	***	***
Contingency management	5.84	(1.40)	***	***
Community reinforcement approach	5.80	(1.44)	***	***

***
p<.001

Table 3

Ordinary least squares regression results for perceived acceptability of buprenorphine

	b	(**SE**)	
Diffusion (awareness of *buprenorphine's* effectiveness)	0.243	(0.192)	
Extent of training about buprenorphine	0.251	(0.037)	***
% opioid caseload	−0.080	(0.064)	
12-step orientation	−0.170	(0.047)	***
Adaptability	0.131	(0.062)	*
Master's degree or higher	0.362	(0.148)	*
Tenure (years)	0.009	(0.010)	
Female	−0.017	(0.135)	
White non-Hispanic	0.219	(0.162)	
Program prescribes buprenorphine	0.515	(0.195)	**
For-profit program	−0.197	(0.222)	
Organization size (logged)	−0.027	(0.061)	
Program offers outpatient services	0.665	(0.261)	*
Hospital-based program	0.115	(0.281)	
West[a]	0.381	(0.237)	
Midwest[a]	0.506	(0.219)	*
Northeast[a]	0.172	(0.360)	

*
p<.05;

**
p<.01;

***
p<.001

[a]Omitted reference category: South

Table 4

Ordinary least squares regression results for perceived acceptability of methadone

	b	(SE)	
Diffusion (awareness of *methadone's* effectiveness)	−0.380	(0.171)	*
Extent of training about methadone	0.137	(0.039)	**
% opioid caseload	−0.126	(0.049)	*
12-step orientation	−0.192	(0.044)	***
Adaptability	0.113	(0.055)	*
Master's degree or higher	0.431	(0.148)	**
Tenure (years)	−0.002	(0.010)	
Female	−0.055	(0.145)	
White non-Hispanic	−0.043	(0.151)	
Program prescribes methadone	1.602	(0.347)	***
For-profit program	−0.458	(0.211)	*
Organization size (logged)	−0.196	(0.059)	**
Offers outpatient services	0.397	(0.300)	
Hospital-based program	0.062	(0.215)	
West[a]	0.148	(0.211)	
Midwest[a]	0.353	(0.205)	
Northeast[a]	0.552	(0.311)	

*
p<.05;

**
p<.01;

***
p<.001

[a]Omitted reference category: South