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Social Workers' Knowledge and Perceptions of Effectiveness and Acceptability of Medication Assisted Treatment of Substance Use Disorders

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Abstract

Data from a national study of 345 privately-funded, community-based substance use disorder (SUD) treatment centers was used to investigate social workers' knowledge, perceptions of effectiveness, and perceptions of the acceptability of medication assisted treatments (MATs) for SUDs. Results reveal the importance of exposure to MATs for social workers to develop a knowledge base regarding the effectiveness of various pharmacological agents. Results also underline the importance of social workers' perceptions of effectiveness in forming opinions regarding the acceptability of the use of MATs in SUD treatment. Lastly, a 12-step orientation towards treatment has a negative influence on social workers' opinions regarding the acceptability of MATs.

Keywords

substance abuse treatment; evidence based practice; social workers; knowledge; attitudes; medication

Substance use disorders (SUDs) continue to be a major public health concern in the United States. In 2010 an estimated 22.1 million adults and adolescents experienced substance abuse or dependence and 2.6 million received treatment for a problem related to substance use (SAMHSA, 2011). The personal and societal costs of SUDs are tremendous, underlining the need to make available the most effective treatment options. A number of effective pharmacotherapies, collectively referred to as Medication Assisted Treatments (MATs) are currently available for use in the treatment of SUDs, however the uptake of these innovations continues to be low (Abraham & Roman, 2010; Compton et al., 2005). Social workers represent a substantial portion of the SUD treatment leadership and clinical workforce and often have influence in decisions regarding the adoption of MATs in SUD treatment programs. Further, social workers' attitudes likely influence their referral practices as well as client receptivity to and positive outcomes from MATs (Bentley, Walsh, & Farmer, 2005; Bradley, 2003; Moses & Kirk, 2006). As such, it is important to understand

variations in social workers' knowledge and attitudes regarding MATs, as well as the factors that influence these variables. A handful of studies have examined such issues in relation to SUD counselors as a whole, however none have looked specifically at social workers' knowledge and perceptions of MATs. To that end, this study was guided by two broad research questions: (1) Do social workers differ from other substance abuse counselors in their knowledge, perceptions of effectiveness, and perceptions of acceptability of MATs?; and (2) What factors influence social workers' knowledge, perceptions of effectiveness, and perceptions of the acceptability of MATs?

Medication Assisted Treatments for Substance Use Disorders

We were particularly interested in examining social workers' attitudes towards four MATs: methadone, buprenorphine, oral naltrexone, and acamprosate. We focused on these medications because they are the most researched SUD treatment medications and each has at least modest support for effectiveness.

Methadone

Methadone has been used in the United States since the 1960s for the treatment of opiate dependence. It is a full mu opioid agonist that suppresses withdrawal, blocks the effects of other opioids, and decreases craving. Methadone maintenance therapy (MMT) is one of the most frequently used treatment options for opiate dependence due to its low cost and demonstrated effectiveness in decreasing drug use, criminal behavior, the prevalence of HIV infection, and advancing rehabilitation (Eder, et al., 2005; Fischer, Rehm, Kim & Kirst, 2005; Mattick, Breen, Kimber, & Davoli, 2009; Ross & Peselow, 2009). A schedule II narcotic, methadone is only dispensed in licensed opioid treatment programs (OTPs) therefore patients must attend an OTP on a daily basis to receive a dose, though after a period of time and demonstrated compliance some patients may be given take home privileges. Because there are a limited number of OTPs in the US many persons with opiate dependence do not have access to MMT. In addition, stigma associated with MMT has been identified as a significant barrier to patient compliance (Anstice, Strike, & Brands, 2009).

Buprenorphine

Buprenorphine, a partial mu opioid agonist, was FDA approved for the treatment of opiate dependence in 2002. Strong evidence for the efficacy of the drug has been demonstrated (Ling, et al., 2010; Ross & Peselow, 2009). There are currently two buprenorphine products available for opiate patients - Subutex and Suboxone. Subutex is comprised of only buprenorphine while Suboxone combines buprenorphine with naloxone, a mu antagonist. The buprenorphine/naloxone combination reduces abuse potential as compared to buprenorphine alone (Ling et al., 2010). In contrast to full opioid agonists, buprenorphine has a lower risk of abuse, dependence, and side effects. Buprenorphine is a schedule III narcotic and must be prescribed by a waivered physician. FDA approval has facilitated greater access to treatment for opiate dependent persons. Because buprenorphine is prescribed by office-based physicians and self administered at home, the stigma associated with daily attendance at an OTP is diminished (Torrington, Domier, Hillhouse, & Ling, 2007). Further, there is a "ceiling effect," meaning increases in doses produce only limited or no euphoric increase after a certain point (Walsh, et al., 1994). The most significant barrier to use of buprenorphine is cost (Barnett, 2009).

Oral Naltrexone

Naltrexone in oral form was FDA approved for the treatment of opiate dependence in 1984 and the treatment of alcohol use disorders (AUDs) in 1994. Naltrexone is a mu opioid antagonist (Orman & Keating, 2009) that binds to the opiate receptors in the brain and

blocks the effects of heroin and most other opiates. Naltrexone is not as widely used in the treatment of opiate dependence as methadone and buprenorphine, although it has a more favorable safety profile, no addictive liability, and diminished stigma since it is not a replacement therapy (Mason, 2003; Ross & Peselow, 2009). Although results have been mixed in regard to the effectiveness of naltrexone in the treatment of opiate dependence, it has been shown to reduce alcohol consumption, the rewarding effects of alcohol, craving for alcohol and rates of relapse (Kranzler, & Van Kirk, 2001; Rosner, Hackl-Herrworth, Leucht, Vecchi, Srisurapanont & Soyka, 2010; Srisurapanont, & Jarusuraisin, 2005). However, poor adherence is common and is associated with higher relapse rates (Pettinati, Volpicelli, Pierce, & O'Brien, 2000; Ross & Peselow, 2009). For this reason, a monthly depot injection formulation was developed and received FDA approval for AUDs in 2006 and for opiate dependence in 2010.

Acamprosate

Acamprosate was FDA approved for the treatment of AUDs in late 2004. It works as a functional antagonist on excitatory glutamate/N-methyl-D-aspartate (NMDA) receptors (Hammarberg et al., 2009). Acamprosate reduces alcohol cravings by normalizing alcohol-disrupted brain activity, particularly the glutamate and gamma-aminobutyric acid (GABA) neurotransmitter systems. The drug has been demonstrated as safe due to the low risk for dependence, a safe interaction with alcohol, limited side effects and is safe for opioid users (Mason, 2003; Ross & Peselow, 2009). A large body of research has demonstrated the effectiveness of acamprosate in alcohol treatment (Dranitsaris, Selby, & Negrete, 2009; Rösner, Hackl-Herrwerth, Leucht, Lehert, Vecchi, & Soyka, 2011; Ross & Peselow, 2009). It may be particularly beneficial for patients with a greater severity of illness and higher baseline levels of motivation (Littleton, 2007).

Knowledge of and attitudes toward MATs

Prior studies of SUD counselors reveal that knowledge of and attitudes regarding MATs in SUD treatment are influenced by counselor professional characteristics, counselor norms and values, and counselor exposure to MATs. *Professional characteristics* include education and tenure in the field. Counselors with an advanced degree are more likely to have positive perceptions of oral naltrexone, acamprosate, and buprenorphine; and counselors with more experience are more knowledgeable about MATs (Abraham, Ducharme, & Roman, 2009; Knudsen, Ducharme, Roman, & Link, 2005). *Counselor norms and values* are reflected in recovery status, endorsement of a 12-Step treatment ideology, and general attitudes toward MATs. Counselors in recovery are less likely to be knowledgeable about MATs and endorsement of a 12-step ideology is negatively associated with MAT knowledge (Abraham et al., 2009; Knudsen et al., 2005; Knudsen, Ducharme, & Roman, 2007). Counselors' endorsement of a 12-step ideology is also negatively associated with perceptions of the effectiveness of acamprosate and buprenorphine, as well as perceptions of buprenorphine's acceptability for use in treatment (Abraham et al., 2009; Knudsen et al., 2005; Knudsen et al., 2007). General attitudes toward MATs, on the other hand are positively associated with counselor perceptions of MAT effectiveness and acceptability (Abraham, et al., 2009). Exposure occurs indirectly when a MAT is used in the counselor's treatment program or directly by receiving specific training regarding the medication; both of which are positively associated with counselor knowledge of and attitudes toward naltrexone, acamprosate, and buprenorphine (Abraham, et al., 2009; Knudsen et al., 2005; Knudsen et al., 2007).

Methods

Sampling and data collection procedures

Data was collected as part of a national study of 345 privately-funded, community-based SUD treatment centers. Treatment programs were considered to be privately funded if less than 50% of their operating budgets were derived from relatively stable governmental sources such as federal block grants and state contracts. Additional inclusion criteria required programs to be community-based and offer, at a minimum, structured outpatient level of care in accordance with American Society of Addiction Medicine guidelines (Mee-Lee, Gartner, Miller, Shulman, & Wilford, 1996). Programs that only offered detoxification services, private practices, halfway houses, and programs whose sole modality was methadone maintenance were thus excluded. In addition, treatment programs located in Veterans Administration facilities or correctional settings were ineligible because they are not accessible to the general public.

A two-stage sampling process was used to identify the sample of treatment programs. The first stage involved assigning all counties in the United States to 1 of 10 strata based on population and then randomly sampling within strata to insure that programs located in urban, suburban, and rural areas would be included. The second stage involved the enumeration of all SUD treatment facilities in the sampled counties using published national and state directories. Treatment programs were then proportionately sampled across strata, with telephone screening used to establish eligibility for the study. Programs screened as ineligible were replaced by random selection of alternative programs from the same geographic stratum. Two-thirds (67%) of contacted treatment programs agreed to participate in the study. Face-to-face interviews were conducted with the administrator and clinical director of each eligible treatment program. At the time of the on-site interview, administrators were asked to provide a list of all counselors employed in the program. All listed counselors were mailed a packet including a questionnaire, consent form, study description, and a self addressed stamped envelope. Those who completed and returned the survey received an incentive payment in the amount of US\$40. A total of 1227 questionnaires were completed and returned, representing a 58% response rate. The analyses reported here utilized counselor-level data only.

Measures

Dependent variables—Three dependent variables were included for each of the identified MATs: knowledge, perceived effectiveness, and perceived acceptability. To measure *knowledge*, a binary variable was constructed from responses to the question: “Based on your knowledge and personal experience, to what extent do you consider the following treatment techniques to be effective?” A “don’t know” response was considered to indicate a lack of knowledge and was thus coded 0 for the *knowledge* variable and those who provided any rating were coded 1. The second dependent variable, *perceived effectiveness* was measured by responses on the Likert rating scale to the above question. Response options included “don’t know” or a 7 point Likert-type rating from 1 (not at all effective) to 7 (very effective). “Don’t know” responses were excluded from the analysis of the perceived effectiveness variable resulting in a lower *N* for these analyses. The third dependent variable was *perceived acceptability*. Respondents were asked, “To you as a treatment professional, how acceptable is the use of each of the following as treatment techniques for substance abuse?” Methadone, buprenorphine, oral naltrexone, and acamprosate were among the treatment techniques that were rated on a 7-point Likert scale ranging from completely unacceptable (1) to very acceptable (7). As in the effectiveness models, “don’t know” responses were excluded from the regression analyses.

Independent variables—Seven independent variables were included in all regression models: education, tenure, recovery, 12-Step orientation, EBP attitudes, adoption in program, and training. *Education* was measured as a dichotomous variable identifying respondents with (1) and without (0) a masters degree or higher. *Tenure* was measured as the number of years that the respondent has worked in SUD treatment. *Recovery* was measured as a dichotomous variable identifying respondents in recovery from a SUD (1 = yes, 0 = no). *12-Step orientation* was measured as the sum of respondents' responses to three items ($\alpha = .83$ in this study) developed by Kasarabada and colleagues (2001). Specifically, respondents indicated the extent to which they agreed (1 = strongly disagree to 7 = strongly agree) that clients need to accept a lack of control over their addiction while placing faith in a higher power, that clients need to reach out to others in recovery, and that treatment should have the goal of clients working the 12-Steps. In order to measure *EBP attitudes* respondents indicated the extent to which they agreed (1 = strongly disagree to 7 = strongly agree) with the statement, "Scientifically supported treatments can be useful." *Used in program* refers to five separate variables indicating, respectively, whether each MAT was used in the respondent's treatment program. *Amount of training* refers to five variables indicating, respectively, to what extent (1 = no training received to 7 = extensive training received) respondents had received specific training regarding the specific MATs. *Medication attitudes* was measured by a single item in which respondents rated their agreement (1 = strongly disagree to 7 = strongly agree) to the statement, "Medications should be integrated into standard treatment for drug dependence."

Data analysis

Data analysis was conducted using STATA version 17.0. Data screening verified that the assumptions for ANOVA, ordinary least squares (OLS) and logistic regression were tenable. In order to address the research questions, we conducted six sets of analyses. First, we conducted bivariate analyses to test for differences between social workers and counselors from other disciplines on demographic and other pertinent variables. T-tests were used on continuous variables and chi-square analyses were used on categorical data. Second, we conducted a series of ANOVAs to compare social workers with counselors from other disciplines on their knowledge, perceptions of effectiveness, and perceptions of acceptability of each MAT. Third, we conducted four logistic regression analyses to model the influence of the seven independent variables on social workers' knowledge of the effectiveness of each MAT. Fourth, we conducted four OLS regression analyses to model the influence of the seven independent variables on social workers' perceptions of the effectiveness and acceptability of each MAT. In the acceptability models we also included the perceived effectiveness variable as an independent variable. It should be noted that the counselor-level data are clustered, meaning that in many cases there are several counselor respondents employed by the same center, thereby violating the assumption of independence that is required by regression modeling. As such, we employed Stata's "cluster()" command which corrects for the effects of clustered data and produces robust standard errors (Long & Freese, 2003).

Results

Table 1 displays descriptive statistics comparing social workers to counselors from other disciplines. Social workers comprised 25% (N = 285) of the sample, while psychology/mental health counseling comprised 29%, addiction counseling 19% and the remaining 27% were from a variety of other fields. Overall the sample was largely female (65%) and Caucasian (86%). More than half (54%) of the respondents had a masters degree or higher, and less than half (46%) reported being in recovery from an SUD. The mean age of respondents was 46 years and the mean tenure was 11 years. Social workers were more likely

to have an advanced degree, a more positive attitude towards EBP, a more positive attitude toward the integration of medications in to standard treatment, and less of a 12-Step orientation than counselors from other disciplines. There were no differences between social workers and non-social workers on gender, ethnicity, age, and years of experience.

Table 2 displays summary data for respondents' knowledge, perceptions of effectiveness and perceptions of acceptability of the specific MATs as well as the results of ANOVAs comparing social workers and other counselors on these variables. The proportion of respondents who reported having knowledge of MATs ranged from 58% for naltrexone to 81% for methadone, with no statistically significant difference in the proportion of social workers with knowledge of any of the MATs as compared to other counselors. Ratings of the effectiveness of MATs were lowest for methadone (mean = 3.6, s.d. = 1.9). Ratings of the effectiveness of buprenorphine (mean = 5.2, s.d. = 1.8), naltrexone (mean = 4.9, s.d. = 1.9), and acamprosate (mean = 5.1, s.d. = 1.8) were similar. Ratings of the acceptability of MATs were lowest for methadone (mean = 3.9, s.d. = 2.2). Ratings of the acceptability of buprenorphine (mean = 5.5, s.d. = 1.9), naltrexone (mean = 5.5, s.d. = 1.9), and acamprosate (mean = 5.7, s.d. = 1.8) were similar. Social workers provided statistically higher ratings of both the effectiveness of the acceptability of each MAT than did other counselors. However, by conducting 12 separate tests on these variables the potential for Type II errors is increased beyond the .05 level. To minimize the threat of Type II errors, we applied the Bonferroni correction and set $\alpha = .0042$ (.05/12). Following this correction, social workers higher ratings for effectiveness of buprenorphine and acamprosate were no longer statistically significant. All other significant results remained.

Table 3 presents results of the logistic regression analyses modeling social workers' knowledge of each MAT. Amount of training was significant across all four MATs, with the odds ratios ranging from 1.5 for methadone to 2.72 for acamprosate. Thus, not surprisingly, a higher rate of specific training related to a particular medication was associated with a higher likelihood of knowledge regarding the medication. With the exception of methadone, social workers were more likely to have knowledge of a MAT if it was used in their treatment program with odds ratios ranging from 4.79 for buprenorphine to 6.05 for naltrexone. In addition, masters level social workers were three times (OR = 3.05) more likely to have knowledge of buprenorphine than bachelors level social workers, social workers with more experience were more likely to have knowledge of naltrexone, and social workers in recovery were approximately three times more likely to have knowledge of acamprosate.

Table 4 presents results of the multiple regression analyses for perceived effectiveness of the four MATs. With the exception of methadone, having a positive attitude towards medications was associated with higher ratings of effectiveness of MATs. Exposure to methadone and buprenorphine through utilization within the social worker's treatment center was associated with higher ratings of effectiveness, though this relationship was not found with naltrexone or acamprosate. In addition, social workers with a 12-step orientation provided higher ratings of the effectiveness of naltrexone.

Table 5 presents results of the multiple regression analyses for perceived acceptability of the four MATs. Across all four MATs, higher ratings of the effectiveness of medications were related to higher ratings of acceptability. With the exception of naltrexone, social workers with higher endorsement of a 12-Step approach to treatment provided lower ratings of the acceptability of MATs. In addition, the acceptability of methadone was higher if methadone was used in the program where the respondent was employed.

Discussion

To our knowledge, this is the first study to examine demographic and professional differences between social workers and SUD counselors from other disciplines. It is also the first to examine if and how social workers differ from other SUD counselors in their knowledge and attitudes related to MATs. Our findings indicate that among SUD counselors, social workers are more likely to have an advanced degree and less likely to only possess a high school degree. Our findings also indicate non-social workers are more likely to be in recovery themselves than social workers, though it is notable that one third of the social workers in this sample were also in recovery. Given that fewer social workers are in recovery, it is not surprising that we also found that social workers had a lower endorsement of a 12-step orientation than non-social workers. Though, it should be noted that on average social workers do endorse a 12-step orientation towards SUD treatment, but to a lesser degree than their colleagues. Social workers also have more positive attitudes towards evidence-based practice and the use of medications in SUD treatment. This difference may be due to their higher educational attainment of social workers in that these are advanced topics that are more likely to be addressed in graduate programs.

We found no difference between social workers and other SUD counselors in regards to their knowledge of each specific MAT. It is important to note that in this study knowledge was measured as a self-reported indicator of whether the respondent had some knowledge of the effectiveness of each medication. While we are unable to assess the accuracy of respondents' knowledge, these findings indicate that dissemination of information regarding each MAT reached social workers and non-social workers equally. However, there was wide variation by medication in the proportion of counselors who were knowledgeable about the SUD medications. Given that methadone has been FDA approved for much longer than the other medications, it is not surprising that it also is the medication most counselors have knowledge of. However, oral naltrexone has been approved for the treatment of opiate dependence since 1984 while buprenorphine only received approval in 2002, yet significantly more counselors were knowledgeable regarding buprenorphine than naltrexone. Different dissemination and marketing strategies were utilized for these two MATs (Mark, Kassed, Vandivort-Warren, Levit, & Krantzler, 2009), which may account for the different rates of diffusion for oral naltrexone and buprenorphine.

Social workers had higher ratings of the effectiveness of two MATs (methadone and naltrexone) and rated the acceptability of all four MATs higher than non-social workers. As noted above, social workers were more likely to have an advanced degree than non-social workers, a potential explanation for the differences in ratings of effectiveness and acceptability. However, when we conducted post-hoc analyses controlling for education these differences remained. Rather than level of education, it may be the content of the education that accounts for social workers' higher ratings of the effectiveness and acceptability of MATs. Though there continues to be some debate regarding the scope and limitations of evidence-based practice, the EBP movement has long been an influential force in social work education. As such, social workers are often exposed to and encouraged to adopt EBPs during their academic training. This professional socialization towards EBP may increase social workers' likelihood to seek out information regarding EBPs, including pharmacotherapies. Social work education also places an emphasis on bio-psychosocial models and collaboration with other disciplines as part of a team treatment approach, each of which may increase social workers' receptivity to pharmacological treatment as a component of a comprehensive treatment approach to SUDs.

Our findings also reveal that the strongest predictors of knowledge of MATs, with the exception of methadone, was exposure to MATs, either by formal training related to the

MAT or employment in a program in which the MAT is used. This finding is consistent with research on SUD counselors as a whole (i.e., Abraham, et al., 2009; Knudsen et al., 2005; Knudsen et al., 2007). In addition, an attitude supportive of the general use of medications in SUD treatment was associated with higher ratings of the effectiveness of all MATs, except methadone. This is the first study, to our knowledge, that investigated the influence of beliefs regarding MAT effectiveness on ratings of acceptability. Social workers' perceptions of the effectiveness of the MATs were the strongest predictors of positive ratings of acceptability, across all four medications.

Another important variable in both the effectiveness and acceptability models was social workers' 12-step orientation. Endorsement of a 12-step orientation to treatment was positively associated with ratings of effectiveness of oral naltrexone but not the other three MATs, and negatively associated with ratings of acceptability for all MATs except oral naltrexone. Perhaps this finding is due to the fact that naltrexone is an antagonist, and thus is not seen as replacing one addictive drug with another as in the case of replacement therapies such as methadone and buprenorphine.

As with all research, this study has several limitations that should be acknowledged. First, all data is self-report and therefore subject to response bias. Second, the data analyzed are cross-sectional which limits our ability to determine causality between variables. Third, these data are representative of social workers and counselors in private sector SUD treatment programs, not the social work and counseling workforce as a whole. Thus, caution should be exercised in generalizing these results to settings such as public, VA, and detoxification only programs, as well as private practice and other fields of practice. Despite these limitations, this study provides a unique contribution to our understanding of social workers' knowledge and attitudes towards pharmacological treatment of SUDs, as well as the factors that influence these variables.

Although social workers are not qualified to prescribe medications for the treatment of SUDs, in their role as SUD counselors they have the most direct contact with clients and play a key role in providing referrals to physicians for this purpose (Varra & Hayes, 2007). Social workers report that providing referrals is one of the most frequently performed tasks performed in relation to psychiatric medication management (Bentley, et al., 2005). Social workers are also often in positions to influence a treatment program's decision to adopt MATs. Because social workers' knowledge of and attitudes towards MATs are likely to impact their advocacy for MATs and their referral practices, it is important to understand variations in social workers knowledge and attitudes regarding different MATs. This study reveals the importance of exposure to MATs for social workers to develop a knowledge base regarding the effectiveness of various pharmacological agents. It also underlines the importance of social workers perceptions of effectiveness in forming opinions regarding the acceptability of the use of MATs in SUD treatment. Lastly, it is clear that a 12-step orientation towards treatment has a negative influence on social workers' opinions regarding the acceptability of MATs.

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Table 1
Demographic characteristics of substance abuse counselors, comparing social workers to other disciplines.

	Social Work		Other Disciplines		<i>p</i> -value
	<i>N</i>	%	<i>N</i>	%	
Gender					.057
Female	194	69.3	510	63.0	
Male	86	30.7	300	37.0	
Ethnicity					.463
African American	25	9.4	94	11.9	
Caucasian	235	88.0	681	86.1	
Other	7	2.6	16	1.5	
Education					<.001
High School	4	1.4	142	17.1	
College degree	60	21.1	288	34.8	
Masters or higher	221	77.5	398	48.1	
In recovery	97	34.0	420	50.5	<.001
Age	278	45.3 (11.7)	811	46.8 (12.2)	.074
Years of Experience	278	11.6 (9.0)	811	11.2 (9.0)	.516
12-Step Orientation	280	12.1 (5.0)	803	13.9 (4.7)	<.001
EBP Attitudes	285	6.1 (1.1)	832	5.7 (1.4)	<.001
Medication Attitudes	259	4.6 (1.9)	757	4.2 (1.9)	.001

Table 2
 Comparison of Social Workers and Other Disciplines on Knowledge, Perceived Effectiveness, and Perceived Acceptability of Pharmacological Treatments for SUDs.

	Social Work		Other Disciplines		P
	N	M (SD)	N	% M (SD)	
Knowledge of....					
Methadone	235	82.5	671	80.6	.501
Buprenorphine	204	71.6	587	70.6	.742
Oral Naltrexone	154	58.3	497	59.7	.092
Acamprosate	176	61.8	507	60.9	.807
Perceptions of effectiveness of....					
Methadone	248	4.0 (2.1)	682	3.4 (1.9)	<.001 [‡]
Buprenorphine	214	5.4 (1.7)	619	5.1 (1.8)	.017
Naltrexone	173	5.3 (1.8)	537	4.8 (1.9)	.003 [‡]
Acamprosate	191	5.1 (1.8)	544	5.0 (1.8)	.016
Perceptions of acceptability of ...					
Methadone	254	4.2 (2.2)	729	3.7 (2.2)	.003 [‡]
Buprenorphine	218	5.8 (1.7)	638	5.3 (1.9)	.001 [‡]
Naltrexone	184	6.1 (1.5)	567	5.3 (2.0)	<.001 [‡]
Acamprosate	199	6.2 (1.4)	580	5.6 (1.9)	<.001 [‡]

[‡]Remains statistically significant following Bonferroni correction ($\alpha = .05/12 = .0042$).

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Table 3
 Logistic regression analyses of social workers' knowledge of pharmacological treatments for SUDs.

	Methadone			Buprenorphine			Oral Naltrexone			Acamprosate		
	<i>b</i> (SE)	OR (95% CI)	<i>b</i> (SE)	OR (95% CI)	<i>b</i> (SE)	OR (95% CI)	<i>b</i> (SE)	OR (95% CI)	<i>b</i> (SE)	OR (95% CI)		
Education	.14 (.47)	1.15 (.46, 2.89)	1.11 (.47)	3.05 (1.21, 7.67)*	.37 (.47)	1.45 (.58, 3.62)	.46 (.53)	1.58 (.56, 4.49)				
Tenure	.03 (.02)	1.03 (.99, 1.07)	-.03 (.02)	.97 (.93, 1.01)	.04 (.02)	1.04 (1.00, 1.07)*	-.02 (.02)	.98 (.94, 1.03)				
Recovery	-.10 (.37)	.90 (.44, 1.85)	-.07 (.39)	.93 (.43, 2.01)	-.14 (.32)	.87 (.47, 1.63)	1.13 (.34)	3.11 (1.60, 6.03)**				
12-step orientation	-.03 (.04)	.97 (.90, 1.05)	.01 (.04)	1.01 (.94, 1.09)	.04 (.03)	1.04 (.97, 1.10)	.01 (.03)	1.01 (.95, 1.08)				
EBP attitudes	.23 (.14)	1.25 (.95, 1.65)	.06 (.17)	1.06 (.76, 1.48)	.21 (.14)	1.23 (.93, 1.62)	-.12 (.13)	.89 (.69, 1.14)				
Used in program	.99 (1.03)	2.68 (.36, 20.10)	1.57 (.39)	4.79 (2.23, 10.28)***	1.80 (.36)	6.05 (3.00, 12.22)***	1.65 (.40)	5.23 (2.40, 11.36)***				
Amount of Training	.41 (.16)	1.50 (1.09, 2.07)*	.68 (.18)	1.98 (1.52, 2.59)***	.54 (.13)	1.71 (1.33, 2.20)***	1.00 (.17)	2.72 (1.96, 3.79)***				
<i>McKeivey & Zavoina R²</i>	.241			.554			.492			.672		
<i>N</i>	259			249			248			249		

* $p < .05$,** $p < .01$,*** $p < .001$

Table 4

Multiple regression analyses of social workers' ratings of the effectiveness of MATs.

	Methadone		Buprenorphine		Oral Naltrexone		Acamprosate	
	<i>b</i> (SE)	β	<i>b</i> (SE)	β	<i>b</i> (SE)	β	<i>b</i> (SE)	β
Education	.27 (.39)	.053	.01 (.44)	.003	-.14 (.51)	-.032	.14 (.38)	.035
Tenure	-.02 (.02)	-.102	-.02 (.01)	-.097	-.02 (.02)	-.114	-.01 (.01)	-.071
Recovery	-.42 (.32)	-.094	-.21 (.28)	-.062	-.21 (.28)	-.058	-.33 (.27)	-.100
12-step orientation	-.03 (.03)	-.081	-.02 (.03)	-.056	.07 (.03)*	.209	.01 (.03)	.026
EBP attitudes	.04 (.13)	.020	.09 (.12)	.055	.13 (.15)	.077	.17 (.13)	.110
Used in program	1.12 (.48)*	.161	.71 (.23)**	.212	.37 (.23)	.107	-.14 (.29)	-.041
Amount of Training	.13 (.07)	.123	.04 (.07)	.053	.04 (.08)	.052	-.10 (.08)	-.125
Medication Attitudes	.08 (.09)	.076	.26 (.09)**	.295	.26 (.10)*	.305	.25 (.09)*	.291
Adjusted <i>R</i> ²	.033		.124		.110		.076	
<i>N</i>	217		181		147		166	

* $p < .05$,

** $p < .01$,

*** $p < .001$

Table 5
Multiple regression analyses of social workers' ratings of the acceptability of MATs.

	Methadone		Buprenorphine		Oral Naltrexone		Acamprosate	
	<i>b</i> (SE)	β	<i>b</i> (SE)	β	<i>b</i> (SE)	β	<i>b</i> (SE)	β
Education	-.50 (.36)	-.093	-.40 (.28)	-.096	.23 (.37)	.061	.07 (.27)	.020
Tenure	.01 (.01)	.025	-.01 (.01)	-.030	-.01 (.01)	-.060	-.005 (.01)	-.030
Recovery	-.07 (.28)	-.016	.15 (.18)	.044	.19 (.24)	.062	.24 (.18)	.085
12-step orientation	-.07 (.03)**	-.158	-.05 (.02)**	-.157	-.03 (.02)	-.090	-.05 (.02)**	-.184
EBP attitudes	.12 (.10)	.058	.01 (.09)	.005	.06 (.14)	.041	.11 (.11)	.083
Used in program	.84 (.35)*	.118	-.01 (.21)	-.004	.23 (.26)	.076	-.07 (.22)	-.025
Amount of Training	.11 (.07)	.097	.02 (.05)	.022	.01 (.05)	.019	-.05 (.05)	-.067
Medication Attitudes	.11 (.07)	.093	.12 (.06)	.136	.01 (.09)	.007	.07 (.05)	.099
Perceived Effective	.62 (.09)***	.594	.62 (.08)***	.625	.41 (.11)***	.468	.47 (.08)***	.557
Adjusted <i>R</i> ²	.438		.463		.198		.374	
<i>N</i>	211		172		140		152	

* $p < .05$,

** $p < .01$,

*** $p < .001$