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## Use of Evidence-Based Treatments in Substance Abuse Treatment Programs Serving American Indian and Alaska Native Communities

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### Abstract

**Background**—Research and health surveillance activities continue to document the substantial disparities in the impacts of substance abuse on the health of American Indian and Alaska Native (AI/AN) people. While Evidence-Based Treatments (EBTs) hold substantial promise for improving treatment for AI/ANs with substance use problems (as they do for non-AI/ANs), anecdotal reports suggest that their use is limited. In this study, we examine the awareness of, attitudes towards, and use of EBTs in substance abuse treatment programs serving AI/AN communities.

**Methods**—Data are drawn from the first national survey of tribal substance abuse treatment programs. Clinicians or clinical administrators from 192 programs completed the survey. Participants were queried about their awareness of, attitudes towards, and use of 9 psychosocial and 3 medication EBTs.

**Results**—Cognitive Behavioral Therapy (82.2%), Motivational Interviewing (68.6%), and Relapse Prevention Therapy (66.8%) were the most commonly implemented psychosocial EBTs; medications for psychiatric comorbidity was the most commonly implemented medication treatment (43.2%). Greater EBT knowledge and use were associated with both program (e.g., funding) and staff (e.g., educational attainment) characteristics. Only two of the commonly implemented psychosocial EBTs (Motivational Interviewing and Relapse Prevention Therapy) were endorsed as culturally appropriate by a majority of programs that had implemented them (55.9% and 58.1%, respectively).

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#### Contributors

DN is responsible for the conception and design of the study. DN, LM, TR were involved in the acquisition of the study data. All authors were involved in the analysis and interpretation of study data, drafting of this manuscript, and its critical revision. All authors have approved the final article.

#### Conflict of Interest

No conflicts declared

**Conclusions**—EBT knowledge and use is higher in substance abuse treatment programs serving AI/AN communities than has been previously estimated. However, many users of these EBTs continue to have concerns about their cultural appropriateness, which likely limits their further dissemination.

### Keywords

Indians; North American; Substance Abuse Treatment Centers; Diffusion of Innovation

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## 1. INTRODUCTION

The dissemination and implementation of evidence-based treatments (EBTs) by substance abuse treatment programs remains one of the greatest challenges we face in improving the quality of such services (Institute of Medicine, 2006). In no part of American society is the need for quality substance abuse services greater than in American Indian and Alaska Native (AI/AN) communities, where the rates of substance use problems are higher than in the rest of the United States and access to care remains limited (Beals et al., 2006, 2005; O'Connell et al., 2005; Whitesell et al., 2012). While EBTs have the potential to improve substance abuse treatment services for AI/ANs, as they do for non-AI/AN populations, there have been a number of concerns raised by experts in this area regarding efforts to increase EBT use (Gone and Looking, 2011; Novins et al., 2011). These include longstanding concerns regarding the cultural appropriateness of many EBTs as well as a lack of guidance on how to adapt interventions for AI/AN populations while maintaining their effectiveness (Novins et al., 2011). Furthermore, the imposition of policy mandates by federal and state authorities to use EBTs in order to receive funding may inadvertently make them even more controversial by placing their use in opposition to tribes' continued efforts to maintain their sovereign status (Novins et al., 2011). Despite these long-standing concerns, engagement with EBTs (i.e., awareness, attitudes towards, and actual use) by substance abuse treatment programs serving AI/AN communities has not been studied systematically, leaving the above concerns in the realm of expert opinion and limiting our ability to improve the process of disseminating and implementing EBTs in programs serving AI/AN communities.

In contrast with research on substance abuse programs serving AI/AN communities, there is a large and growing literature on the use of EBTs in substance abuse treatment programs more generally, enough to support at least two systematic reviews (Garner, 2009; Walters et al., 2005). Organizational factors associated with greater EBT engagement include larger program size (Guerrero et al., 2013), organizations that are younger (Lundgren et al., 2012), having better internet technology (Lundgren et al., 2011b), lower levels of organizational stress (Lundgren et al., 2012), accepting private insurance (Guerrero et al., 2013), the use of total quality management techniques (Fields and Roman, 2010), and supervisor expectations regarding EBT use (Guerrero et al., 2013).

Similarly, workforce factors associated with greater EBT engagement include higher levels of clinician education (Lundgren et al., 2011b) and clinical experience (Bride et al., 2010; Ducharme et al., 2010), positive attitudes to science-based treatments (Bride et al., 2010) as

well as training in (Bride et al., 2010) and experience with specific EBTs (Bride et al., 2010; Lundgren et al., 2012).

There is also evidence of variation in the factors supporting the implementation of different EBTs, particularly between psychosocial and medication EBTs (Oliva et al., 2011). For example, McGovern, Fox et al. (2004) reported that while clinicians who labeled themselves as either using a 12-step model or cognitive behavioral model for treatment reported comparable interests in psychosocial EBTs such as Relapse Prevention Therapy and Motivational Interviewing, those therapists using a cognitive behavioral treatment model were more open to using medication EBTs. Rieckmann et al. (2011) reported similar findings regarding use of buprenorphine, with less emphasis on 12-step services and a greater percentage of clients with opiate use disorders being associated with a greater likelihood to offer buprenorphine treatment. Among the medication EBTs, Knudsen, Abraham, and Roman's (2011b) work suggests that use of medications for the treatment of comorbid psychiatric conditions was more common than the use of medications for relapse prevention. Organizational factors associated with use of medication EBTs include access to medical staff, for-profit institutional structure, larger program size, placement in a hospital setting, accreditation, and greater access to trainings and to web-based materials), and program participation in research (Abraham et al., 2009, 2013, 2011, 2010; Ducharme and Roman, 2009; Knudsen et al., 2011a; Krull et al., 2011; Roman et al., 2011; Savage et al., 2012).

Research also suggests that modifications to EBTs are often made in substance abuse treatment settings, but that these modifications vary substantially across settings (Lundgren et al., 2011a). Furthermore, many programs that use EBTs do not provide training and ongoing support for high quality implementation (Olmstead et al., 2012).

Drawing on data from the first national study of substance abuse treatment programs serving AI/AN communities, the goal of this paper is to examine the depth of engagement with EBTs in these programs.

## 2. METHODS

Data for these analyses come from the Centers for American Indian and Alaska Native Health's Evidence-Based Practices and Substance Abuse Treatment for Native Americans project. This project focused on how substance abuse treatment programs serving AI/AN communities use and perceive EBTs. An advisory board of administrators, service providers, evaluators from the AI/AN substance abuse treatment community, and researchers with expertise in AI/AN substance abuse treatment and dissemination research supports this project.

This project consisted of three phases: 1) convening an advisory board to identify key issues in the dissemination and implementation process and to develop study measures and methods (Novins et al., 2011), 2) completion of qualitative case studies of 18 substance abuse treatment programs serving AI/AN communities (Legha et al., 2014; Legha and Novins, 2012; Moore et al., 2015), and 3) conducting a national survey of AI/AN substance

abuse treatment programs to explore their use of EBTs (Novins et al., 2012). This paper draws on the data collected during this final phase.

## 2.1. Participants and Study Procedures

As described in detail elsewhere (Novins et al., 2012), data collection was conducted using a stratified sampling approach, dividing these programs into the following five strata: 1) the 20 largest AI/AN tribes, 2) urban AI/AN health clinics; 3) substance abuse services operated by the AN Health Corporations; 4) other tribes (federally recognized minus the 20 largest); and 5) other local and regional programs (independent nonprofit or for profit).

Using existing tribal, organizational and substance abuse program listings, consultation with Indian Health Service and state substance abuse treatment administrative staff, and the analysis of publicly-available information on the Worldwide Web, we identified specific treatment programs that had the potential to provide substance abuse services to AI/AN communities. We then contacted each identified program and determined whether it provided substance abuse treatment services to AI/AN communities. If the program confirmed providing such services, we described the project and asked whether there was a clinical administrator or other senior clinical staff whom we could ask to complete the survey (Novins et al., 2012). Once this staff member was identified and agreed to participate in the study, the staff member was given the choice of completing the survey online or over the telephone. Only two participants chose the telephone interview. The others were emailed a link to the survey for completion. Given the contingent question structure of the survey (with more questions asked when respondents endorsed greater experience with specific EBTs), completion time varied from 20–60 minutes. Once data collection was completed, all identifying information was deleted from the project databases, rendering these data anonymous. A total of 192 surveys were completed, yielding an overall participation rate of 63%, consistent with meta-analyses of participation rates in telephone and internet surveys (Cook et al., 2000; Van Horn et al., 2009).

Key sample characteristics are summarized in the left-hand columns of Table 1. The majority of programs were located in rural areas (74.0%) and were operated by a tribe or tribal consortium (63.0%); only 24.5% were accredited. The average number of front-line clinical staff was 5.6 with 83.3% reporting having at least one staff member who identified as AI/AN. The majority of programs reported that they collected data on treatment outcomes (64.2%) and consider EBTs in their strategic planning (58.3%). Study procedures were approved by the Colorado Multiple Institutional Review Board, who classified the study as exempt; and the Oregon Health and Science University's Institutional Review Board, who classified the study as expedited. The Indian Health Service Institutional Review Board classified the study as not human subjects research.

## 2.2. Measures

The survey was designed by the Advisory Board drawing on examples of other surveys of substance abuse treatment programs, including the National Drug Abuse Treatment System Survey (Andrews et al., 2014), the Comprehensive Community Mental Health Services for Children and Their Families Program Evaluation (Center for Mental Health Services, 2005),

the University of Georgia National Treatment Center Study (Knudsen et al., 2011b), and the Assessment of the National Drug Abuse Treatment Clinical Trials Network Survey (McCarty et al., 2008) as well as the results of the qualitative interviews and focus groups conducted in the second phase of the project. The survey consisted of 17 sections: background information about the respondent and program, program workforce, assessment process, quality improvement and training procedures, and individual sections for the 12 EBTs described below. The survey may be accessed online at [www.ucdenver.edu/caianh/ebp](http://www.ucdenver.edu/caianh/ebp).

**2.2.1. Dependent Variables: EBT Engagement**—Our measures of EBT engagement were drawn from the section of the survey which examined awareness of, attitudes towards, and use of 9 psychosocial EBTs (Behavioral Couples Therapy, Cognitive Behavioral Therapy, Community Reinforcement and Family Training, Contingency Management, Matrix Model, Motivational Interviewing, Multisystemic Therapy, Relapse Prevention Therapy, Twelve Step Facilitation) and 3 psychopharmacologic EBTs (Medications for Comorbid Psychiatric Conditions, Medications for Relapse Prevention, Medications for Withdrawal). A brief description was provided for each EBT, then participants were asked to rate their program's experience with that EBT on the following scale: 0=Unfamiliar with the EBT; 1=not interested in the EBT; 2=considered the EBT, but "see many pros and cons"; 3=planning on using the EBT, but have not used it yet; 4=using the EBT, but not a permanent part of the program; 5=made EBT a permanent part of the program; and 6=used the EBT in the past, but don't use it currently. In addition to examining responses to these questions for each EBT individually, we created two summary scales of EBT engagement, one averaging the participant's responses to the 9 psychosocial EBTs (Psychosocial EBT Engagement; Cronbach's  $\alpha=0.62$ ); the other averaging responses to the 3 psychopharmacologic EBTs (Psychopharmacologic EBT Engagement ( $\alpha=0.69$ )). Confirmatory Factor Analyses (CFAs) supported the two-scale structure for these variables (see this manuscript's supplementary materials for details<sup>1</sup>). For these scales (Psychosocial and Medication EBT engagement) we combined the two highest levels of the scale (i.e., responses of 6 were recoded to 5).

**2.2.2. Independent Variables**—Potential Predictors of EBT Engagement were drawn from the sections of the survey focused on program and staff characteristics, assessment and evaluation procedures, and attitudes towards EBTs. These variables were originally chosen by the project's Advisory Board based on the literature regarding the dissemination and implementation of EBTs to substance abuse treatment programs or identified as being potentially important for programs serving AI/AN communities. Please see Table 1 and the online supplement<sup>2</sup> for further details regarding these variables.

**2.2.3. EBT Implementation Follow-up Questions**—Among participants that reported implementing specific psychosocial EBTs, we examined participant responses to two key implementation questions, how the EBT is used in the program (following the manual exactly, using the parts of the manual perceived as most helpful, rewriting the manual to make it fit better with the program and/or more culturally appropriate, not using the manual

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<sup>1</sup>Supplementary material can be found by accessing the online version of this paper at <http://dx.doi.org> and by entering doi:...

but drawing on key concepts of the EBT), and its perceived cultural appropriateness (i.e., endorsing an asset of the EBT that it is culturally appropriate).

### 2.3. Analytic Plan

First we calculated percentages for the different levels of engagement for each of the EBTs. , Next we developed two multiple regression models, one predicting the level of psychosocial EBT engagement and another predicting the level of psychopharmacologic EBT engagement. We selected variables for the multiple regressions that had univariate associations with the engagement scale scores with  $p < 0.25$  (Hosmer et al., 2013). Then, we used backward elimination to remove variables from both models until all remaining variables were either themselves significant at  $p < 0.05$  or belonged to a set of variables in which at least one was significant. Because of the multiple comparisons involved in conducting the initial univariate analyses, we discuss only differences significant at the level of  $p < 0.01$ ; for the multivariate analyses we discuss associations significant at the  $p < 0.05$  level (Sokal and Rohlf, 1969; Weiss, 1999). Finally, we calculated the percentage of programs utilizing the different methods of implementation and the percentage that endorsed specific EBTs as culturally appropriate. We restricted these final analyses to those EBTs where at least 20% of the sample reported implementation to assure an adequate sample size.

## 3. RESULTS

### 3.1. EBT Engagement

**3.1.1. Psychosocial Treatments**—Levels of engagement with the 9 psychosocial treatments queried in the survey are summarized in the top of Table 2. Among the 5 most commonly implemented psychosocial treatments, Matrix Model had the highest proportion of implementers (i.e., programs scoring 4 on the engagement scale for that EBT) to report that they had not committed to permanent use of the intervention (32.9% compared to an average of 26.0% for all 5 of these treatments) and the highest proportion who reported discontinuing its use (17.3% compared to an average of 5.8%). Overall, 95.8% of programs reported implementing at least one of these nine psychosocial treatments, but the average score on the global psychosocial treatment scale was 2.2, reflecting that four of these treatments were unfamiliar to most programs (Contingency Management, Behavioral Couples Therapy, Community Reinforcement and Family Training, and Multisystemic Therapy).

**3.1.2. Medication Treatments**—Levels of engagement with the 3 medication treatments queried in the survey are summarized in the bottom of Table 2. Just 54.2% of the programs reported implementing at least one of these three medication treatments, reflecting the considerable unfamiliarity with these treatments and either a lack of interest or ambivalence (i.e., seeing pros and cons) in use of medications for relapse prevention (39.7%) and withdrawal (41.1%).

### 3.2. Factors Associated with EBT Engagement

Twelve of 37 variables had crude (univariate) associations with engagement with psychosocial treatments (Table 1 middle columns); 6 in the final multivariate model (Table 3). In the final multivariate model, engagement with the psychosocial EBTs was associated with receiving direct IHS funding for services, greater mean years of staff education, having staff that are certified addiction counselors, requiring clinical use of EBTs, considering EBTs in strategic planning, and higher scores on the EBPAS Openness Scale. Five of 37 variables had crude (univariate) associations with EBT engagement for medication treatments (Table 1); 4 in the final multivariate model (Table 3). In the final multivariate model, engagement with medication EBTs was associated with receiving Medicaid or fee for service reimbursements, serving adolescents,

### 3.3. Implementation Strategies and Perceived Cultural Appropriateness

Implementation strategies for the five psychosocial EBTs that were most commonly used by these programs are summarized in Table 4. Following the manual exactly was the third most common strategy utilized across these EBTs, ranging from 7.8% (Relapse Prevention Therapy) to 27.1% (Matrix). Among the programs that had implemented the five most commonly utilized psychosocial treatments, only Relapse Prevention Therapy and Motivational Interviewing were noted to be culturally appropriate by the majority of programs.

## 4. DISCUSSION

Given the controversy that has surrounded efforts to increase the use of EBTs in substance abuse treatment programs serving AI/AN communities (Gone and Looking, 2011; Novins et al., 2011), the fact that the use of at least one psychosocial EBT was almost universal in these programs is an unexpected finding. This may reflect the extensive efforts at the policy level to encourage and support EBT exploration and implementation for substance abuse treatment programs more generally (Addiction Technology Transfer Center Network, 2014; Oregon Health Authority, 2015; Rieckmann et al., 2009; Substance Abuse and Mental Health Services Administration, 2015a, b) as well as efforts focused specifically on programs serving AI/AN communities (Addiction Technology Transfer Center Network, 2014; Oregon Health Authority, 2015). Certainly awareness and use of EBTs in these programs is far broader than suggested by thought leaders working in this area. However, consistent with these expert assessments, these results also suggest that depth of engagement is quite shallow. For example, that actual implementation of psychosocial treatments was concentrated in four EBTs (Cognitive Behavioral Therapy, Motivational Interviewing, Relapse Prevention Therapy, Twelve-Step Facilitation) while another four EBTs were unfamiliar to the majority of respondents (Contingency Management, Behavioral Couples Therapy, Community Reinforcement and Family Training, Multisystemic Therapy) suggests that programs serving AI/AN programs are only accessing a limited subset of psychosocial EBTs. The breadth of dissemination efforts should be examined to clarify how we can enhance these programs' awareness of a broader array of treatments and their potential roles in service provision. This is particularly critical as the passive diffusion process within the AI/AN substance abuse treatment community is likely to reinforce the use of those EBTs

that are well known among this network of programs and providers, making it difficult for other psychosocial treatments to garner the attention they deserve (Greenhalgh et al., 2004). That the majority of actual users of three of the five most commonly implemented EBTs did not rate them as culturally appropriate further underscores the need for better guidance on how to implement these treatments in culturally appropriate ways, including guidance on acceptable approaches to adaptation of treatment manuals. That most of the commonly utilized psychosocial EBTs are not typically implemented with fidelity is consistent with studies of substance abuse treatment programs serving non-AI/AN communities (Friedmann et al., 2007; Riley et al., 2008), but also underscores the need to develop new ways to support the implementation of these EBTs (Martino, 2010). Models of implementation that emphasize adapting interventions to fit better with program resources and client and community needs may be particularly useful in addressing these issues (Aarons et al., 2012).

In contrast, access to medication treatments is far from universal, especially since the medication EBTs focus on distinct therapeutic indications (far more distinct than the psychosocial EBTs, which have considerable overlap with one another in terms of their therapeutic targets). Use of medications for relapse prevention and withdrawal is particularly uncommon, a problem that has been described in substance abuse treatment programs more broadly (Knudsen et al., 2011b). Further exploration of these data will be needed to determine how much of this is due to lack of infrastructure, limited awareness and knowledge, and conflicts with overall treatment philosophy (Knudsen et al., 2011a).

EBT Engagement was found to increase with the occurrence of particular factors, similar to EBT implementation in studies of US substance abuse programs more broadly. For psychosocial EBTs, having base funding available to support services (direct funding from the Indian Health Service, Tribe, or from federal block grants) suggests that financial support not tied to specific grants or fee for service expectations provides greater flexibility to explore/implement these EBTs (Greenhalgh et al., 2004; Institute of Medicine, 2006). That engagement with the medication EBTs was higher among programs receiving Medicaid or fee for service funding is likely due to the importance of having the fiscal infrastructure to bill in a fee-for-service manner to support these services. Interestingly, we were unable to identify a relationship between grant funding and EBT engagement, a factor that had been hypothesized to be a key impetus towards EBT use in these programs (Novins et al., 2011), suggesting that factors other than grant funding are driving EBT use in these programs. That higher staff education was associated with greater engagement in both classes of EBTs, and that engagement with psychosocial EBTs in particular was higher when at least some staff were certified addiction counselors, underscores the importance of solid educational and training backgrounds for exploring and implementing EBTs. Similarly, that administrative procedures (program requirement to use EBTs, considering EBTs in strategic planning) and attitudes (openness to new treatment approaches) were associated with greater psychosocial EBT engagement show the importance of administrative support and organizational culture in facilitating the exploration and use of EBTs.

It was interesting that presence of staff in recovery from alcoholism was positively associated with the level of medication EBT engagement. This covariation seems to run counter to the findings from more general studies of US programs (McGovern et al., 2004;



Oliva et al., 2011). Because the 12-step movement in tribal communities developed in unique ways that involved the blending of 12-step philosophies with AI/AN traditional beliefs, perhaps there has been less of an emphasis on avoiding medications than in mainstream 12-step programs (Novins et al., 2011).

Several key limitations of this study should be noted. First, this study relied on the reports of program staff members. While this is a standard approach for studies such as this one (Knudsen et al., 2011a), it does raise the risk of inflation of the rates of EBT engagement as this may have been viewed by participants as socially desirable (Manuel et al., 2011). However, given the low rates of reported engagement for many of the EBTs we queried and the low rates of reported implementation with fidelity to treatment manuals, it does not appear that social desirability had a pervasive impact on survey responses. Second, the focus on program-level engagement of EBTs means we were unable to examine the individual clinician-level factors that may be particularly important for EBT implementation. Third, the cross sectional non-experimental nature of these data mean that while we can identify factors associated with EBT engagement, we can describe neither the temporal process of exploration and implementation nor what factors advance this process. Fourth, by combining EBTs into two groups, psychosocial and medication treatments, the regression analyses conducted here focus on global indicators of EBT engagement. While this approach is informative, it is likely that programs often consider EBTs on a case by case basis. Further analyses regarding the implementation of specific EBTs will help elucidate these more targeted aspects of implementation. Finally, the participation rate in this survey was 63%. While this participation rate is consistent with other surveys using comparable methodologies (Cook et al., 2000; Van Horn et al., 2009), and is impressive given the long-standing reluctance of AI/AN communities to participate in research (Burhansstipanov et al., 2005; Novins et al., 2012), it still raises the risk of unmeasured bias in the programs that participated in the study versus those that did not. In particular it is possible that programs that have not implemented EBTs may have been less likely to participate in the survey, resulting in an overestimation of EBT engagement. However, the substantial variation in key program characteristics and in the rates of engagement with EBTs suggests that we successfully recruited a heterogeneous group of substance abuse treatment programs.

This first national study of substance abuse treatment programs serving AI/AN communities suggests that the degree of engagement with both psychosocial and medication EBTs is considerably greater than anecdotal analyses have suggested. However, this engagement is with a relatively limited number of EBTs that are often implemented without strong fidelity. Given this, along with the low endorsement of these EBTs as culturally appropriate, considerable additional work is needed to make the benefits of these treatments more available to AI/ANs with substance use problems.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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### Highlights

- We examined evidence-based treatment (EBT) use in tribal substance abuse treatment.
- 96% of programs implemented a psychosocial treatment; 54% a medication treatment.
- Greater EBT engagement was associated with program characteristics (e.g., funding) and staff characteristics (e.g., educational attainment).

**Table 1**  
Sample Characteristics and Crude (Univariate) Associations with Evidence-Based Treatment Engagement

	Sample Characteristics		Engagement with Psychosocial EBTs		Engagement with Medication EBTs	
	%/mean	SE	B	SE	B	SE
<b>Program Characteristics</b>						
Program location is rural	74.0	3.17	0.001	0.14	0.04	0.26
Program is located at a tribal location	81.3	2.82	0.14	0.15	0.32	0.29
Type of program <sup>/</sup>						
tribal	53.1	3.60	-0.03	0.15	-0.42	0.28
tribal consortium	9.9	2.16	0.13	0.21	-0.18	0.39
IHS or federal	51.0	3.61	0.16	0.13	-0.07	0.25
independent	25.0	3.13	-0.10	0.16	-0.32	0.31
<b>Funding<sup>/</sup></b>						
Direct, 638 compact, block grant, or tribal	65.6	3.43	0.53	0.13 <sup>*</sup>	0.31	0.25
HRSA or 638 contract	57.3	3.57	0.23	0.13	0.001	0.24
Grants (SAMHSA or private foundation)	39.6	3.53	0.23	0.12	0.33	0.23
Medicaid or fee for service	65.1	3.44	0.23	0.12	0.72	0.24 <sup>*</sup>
Program accredited	24.5	3.10	0.07	0.14	0.37	0.26
Serves adolescents	84.4	2.62	-0.19	0.17	0.65	0.31
<b>Levels of care provided<sup>/</sup></b>						
ASAM Level 0.5, early intervention	64.6	3.45	-0.31	0.13	0.06	0.25
ASAM Level I, outpatient treatment	89.1	2.25	0.10	0.22	0.17	0.43
ASAM Level II, intensive outpatient/partial hospitalization	34.9	3.44	0.41	0.13 <sup>*</sup>	0.02	0.25
ASAM Level III, residential/inpatient treatment	19.8	2.88	-0.04	0.16	-0.07	0.31
ASAM Level IV, medically-managed intensive inpatient treatment	2.1	1.03	0.24	0.41	1.52	0.80
Program has an electronic health record system	55.1	3.64	0.28	0.12	0.56	0.22 <sup>*</sup>
<b>Staff Characteristics</b>						

	Sample Characteristics		Engagement with Psychosocial EBTs		Engagement with Medication EBTs	
	%/mean	SE	B	SE	B	SE
Number of front line clinical staff	5.6	0.55	0.02	0.01*	0.02	0.01
Number of disciplines among clinical staff	3.1	0.10	0.13	0.04*	0.28	0.08*
Average years of staff education	16.4	0.11	0.07	0.04	0.20	0.07*
Average years of employment in program	5.6	0.26	-0.01	0.02	0.00	0.03
Staff that are certified addiction counselors						
none	10.4	2.20	--A	--A	--A	--A
1-50%	46.4	3.60	0.61	0.20*	1.05	0.38*
more than 50%	43.2	3.58	0.77	0.20*	0.92	0.38
Staff in recovery from alcoholism						
none	14.6	2.55	--A	--A	--A	--A
1-50%	53.1	3.60	0.31	0.17	0.80	0.33
more than 50%	29.7	3.36	0.39	0.19	0.60	0.36
Percent of clinical staff that are American Indian or Alaska Native						
none	16.7	2.69	--A	--A	--A	--A
1-50%	44.8	3.59	0.22	0.17	0.40	0.32
more than 50%	38.5	3.51	0.16	0.18	-0.08	0.33
Program struggles to recruit and retain clinical staff	51.6	3.61	0.19	0.12	0.21	0.22
Program has open clinical staff positions	38.0	3.50	0.14	0.12	0.34	0.23
Program has continuing education requirement	81.3	2.82	0.47	0.15*	0.56	0.29

**Clinical Assessment and Program Evaluation**

Structured assessment of client's substance abuse at intake	76.6	3.06	0.21	0.14	-0.22	0.26
Formal method to assess client's motivation for change at intake	27.5	3.46	0.44	0.14*	0.59	0.27
Program evaluates effectiveness of services provided	65.8	3.47	0.29	0.12	0.17	0.24
Program collects data on treatment outcomes	64.2	3.51	0.30	0.12*	0.02	0.23
Program has outside evaluator examine the quality	40.6	3.59	0.19	0.12	-0.12	0.23



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	Sample Characteristics		Engagement with Psychosocial EBTs		Engagement with Medication EBTs	
	%/mean	SE	B	SE	B	SE
of services						
Program has participated in a research or program evaluation	31.6	3.40	0.35	0.13*	0.31	0.24
<b>Evidence-Based Treatment Experience and Attitudes</b>						
Feels pressure to use Evidence-Based Treatments	36.5	3.47	0.11	0.12	0.06	0.23
Program requires clinical staff to use Evidence-Based Treatments	43.8	3.58	0.43	0.12*	0.30	0.23
Believes working with an expert in a particular treatment would help improve services	95.7	1.48	-0.12	0.30	0.72	0.55
Evidence-Based Treatments are considered in strategic planning	58.3	3.61	0.48	0.12*	0.59	0.22
EBPAS Openness Subscale	2.3	0.06	0.30	0.08*	0.16	0.15
EBPAS Divergence Subscale	1.5	0.05	0.07	0.08	-0.12	0.16

**Notes.**

\* Percentages sum to more than 100 as participants were permitted to endorse more than one response.

%/Mean=percent for categorical variables, mean for continuous variables

SE=standard error

EBT=Evidence-Based Treatment

\* P .01

A=reference group

EBPAS=Evidence-Based Practices Attitudes Scale

**Table 2**

Percentages of Participants Having Different Levels of Treatment Use

	Raw Ratings							Descriptive Ratings		
	Not Familiar	Not interested in	See pros and cons	Planning on using	Using but not permanent	Permanent use	Used in past	Percent With Rating	Mean Rating	SD of Ratings
<b>Psychosocial Treatments</b>	0	1	2	3	4	5	6			
Cognitive Behavioral Therapy	4.2	1.1	8.9	3.7	24.1	56.4	1.6	82.2	4.2	1.3
Relapse Prevention Therapy	17.0	3.2	6.4	4.8	14.9	52.6	1.1	68.6	3.6	1.9
Motivational Interviewing	11.1	2.6	10.5	9.0	19.5	45.7	1.6	66.8	3.7	1.7
Twelve-Step Facilitation	24.1	7.0	10.7	4.3	9.1	41.6	3.2	54.0	3.0	2.1
Matrix Model	25.9	10.6	19.1	7.4	12.2	18.5	6.4	37.0	2.4	1.9
Contingency Management	55.3	7.4	13.7	5.8	6.3	9.5	2.1	17.9	1.4	1.8
Behavioral Couples Therapy	69.3	3.1	16.2	4.2	4.2	2.6	0.5	7.3	0.8	1.4
Community Reinforcement & Family Training	80.0	5.8	4.2	7.9	2.6	2.1	0.5	5.2	0.6	1.3
Multisystemic Therapy	81.5	5.8	7.9	1.1	1.1	1.6	1.1	3.7	0.4	1.1
<b>All Psychosocial Treatment Ratings</b>								<b>95.8</b>	<b>2.2</b>	<b>2.1</b>
<b>Medication Treatments</b>										
Meds for Comorbidity	37.9	4.2	11.1	3.7	7.4	35.3	0.5	43.2	2.5	2.2
Meds for Relapse Prevention	26.5	14.8	24.9	5.8	9.5	16.4	2.1	28.0	2.1	1.8
Meds for Withdrawal	32.6	25.3	15.8	2.6	6.8	15.3	1.6	23.7	1.8	1.8
<b>All Medication Treatment Ratings</b>								<b>54.2</b>	<b>2.1</b>	<b>2.0</b>

**Table 3**

Adjusted (Multivariate) Associations with Evidence-Based Treatment Engagement from Final Regression Models

	<u>Engagement with Psychosocial EBT</u>		<u>Engagement with Medication EBTs</u>	
	<b>B</b>	<b>SE</b>	<b>B</b>	<b>SE</b>
<b>Program Characteristics</b>				
Funding				
Direct, 638 compact, block grant, or tribal	0.32	0.13*	0.13	0.26
HRSA or 638 contract	0.17	0.12	-0.28	0.25
Grants (SAMHSA or private foundation)	0.11	0.11	0.33	0.23
Medicaid or fee for service	0.03	0.12	0.61	0.24*
Serves adolescents			0.61	0.30*
<b>Staff Characteristics</b>				
Average years of staff education	0.07	0.03*	0.22	0.08*
Staff in recovery from alcoholism				
none			__A	__A
1-50%			0.77	0.33*
more than 50%			0.80	0.39*
Staff that are certified addiction counselors				
none	__A	__A		
1-50%	0.41	0.19*		
more than 50%	0.48	0.20*		
<b>Evidence-Based Treatment Experience and Attitudes</b>				
Program requires clinical staff to use Evidence-Based Treatments	0.23	0.11*		
Evidence-Based Treatments are considered in strategic planning	0.32	0.11*		
EBPAS Openness Scale	0.22	0.07*		
<b>Variance Explained by Final Regression Models (R<sup>2</sup>)</b>				
	0.27		0.17	

**Notes.**

EBT=Evidence-Based Treatment

\* p .05

A=reference group

**Table 4**

**EBT Implementation Methods and Perceived Cultural Appropriateness\***

	n	Implementation Methods				EBT is culturally appropriate
		Following manual exactly	Using parts of manual	Rewriting manual	Using EBT key concepts	
		%	%	%	%	%
Cognitive Behavioral Therapy	157	10.8%	31.2%	5.1%	52.9%	44.6%
Motivational Interviewing	126	19.1%	43.7%	0.8%	36.5%	55.9%
Relapse Prevention Therapy	128	7.8%	53.9%	5.5%	32.8%	58.1%
Twelve-Step Facilitation	101	23.8%	37.6%	3.0%	35.6%	37.6%
Matrix Model	70	27.1%	47.1%	11.4%	14.3%	42.9%

**Notes.**

\* Analyses performed on those EBT's implemented by 20% of more of programs, focusing on programs that had actually implemented that EBT.