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Correlates of Motivational Interviewing Use Among Substance Use Treatment Programs Serving American Indians/Alaska Natives

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Abstract

Motivational Interviewing (MI) offers a treatment modality that can help meet the treatment needs of American Indians/Alaska Natives (AI/ANs) with substance use disorders. This report presents results from a national survey of 192 AI/AN substance abuse treatment programs with regard to their use of MI and factors related to its implementation, including program characteristics, workforce issues, clinician perceptions of MI, and how clinicians learned about MI. Sixty-six percent of programs reported having implemented the use of MI in their programs. In the final logistic regression model, the odds of implementing MI was significantly higher when programs were tribally-owned (OR = 2.946, CI$_{95}$: 1.014, 8.564), where more than 50% of staff were Certified Alcohol and Drug Counselors (CADCs) (OR = 5.469, CI$_{95}$: 1.330, 22.487), and in programs in which the survey respondent perceived that MI fit well with their staff's expertise and training (OR = 3.321, CI$_{95}$: 1.287, 8.569).

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[1]638 Contract or Compacts are centers offered directly by tribes or tribal organizations with federal funding made available under the Indian Self-Determination Act. Thus they are self-governing outpatient health care programs and facilities for AI/AN people.

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Introduction

The perceptions and utilization of evidence-based treatments (EBTs) for American Indians/ Alaska Natives (AI/ANs) in substance abuse treatment is an important but understudied area. Substance use disorders (SUDs) disproportionately affect AI/ANs. For example, among persons aged 12 or older, the rate of substance dependence or abuse was higher among AI/ANs compared to all other ethnic/racial groups.[1] Furthermore, the number of AI/ANs who needed but did not receive substance abuse treatment was higher compared to other racial/ethnic groups in the United States.[2] This is noteworthy and compounded by our limited knowledge regarding the delivery of EBTs to AI/ANs with SUDs.[3] Expanding our knowledge about the perceptions and utilization of these EBTs among substance abuse treatment programs serving AI/ANs is critical, considering that these treatments have demonstrated effectiveness in large-scale studies conducted thus far,[4,5] but have rarely been studied for use in this population.

Motivational interviewing (MI) is one of the best-studied EBTs for SUDs.[6] It is a client-centered therapeutic modality that consists of a relational and technical component.[7] The relational component refers to providers developing a partnership with clients by being empathic, empowering, compassionate, and emphasizing client autonomy. The technical component involves helping clients explore and resolve their ambivalence about their substance use by drawing out and reinforcing the client's own motivations for change.[7,8,9] MI also delivers education and skill-building strategies to promote behavior change. Therapists attempt to elicit "change talk" from their clients during their MI sessions.[10,11,12] In order to accomplish this, various techniques are employed including utilization of reflective statements, asking open-ended questions, summarizing main points of the discussion, and expressing affirmations.[13] Reinforcing change talk elicited by clients can ultimately assist toward reinforcing their commitment to making changes in their substance use.

Although MI was originally developed for use with individuals struggling with SUDs, it is now used to address a variety of other health care areas such as diabetes,[14] obesity,[15] dentistry,[16] promotion of physical activity,[17] and overall health promotion.[18] In addition, the treatment duration of MI is adaptable, ranging from one to four sessions lasting 20 minutes or less[19,20] to five or more sessions,[21,22] based on client need. Thus, MI may be flexibly employed in the treatment of various conditions.

MI has been described as consistent with AI/AN culture, values, and interactional styles. [23,24] In response to these observations, two MI manuals have been specifically designed for use with AI/ANs.[13,24] In addition, various studies analyzing the development, analysis, and implementation of MI for AI/ANs with substance abuse and various other health conditions have been conducted.[25–27, 29–39] In a study conducted by Foley et al., 2005, AI/AN patients

in an inpatient substance abuse treatment center were provided with an HIV prevention educational presentation followed by one-on-one HIV counseling. To aid participants in recognizing their risk status and making a decision to be HIV tested, MI was used in the counseling sessions. Results showed that of the 134 who agreed to one-on-one HIV counseling, 105 (78%) submitted to HIV testing and returned for their results.[28] In a study conducted among our group analyzing the utilization of evidence-based treatments (EBTs) in substance abuse programs serving AI/AN communities, MI and Relapse Prevention Therapy were endorsed as culturally appropriate by a majority of substance abuse programs that implemented them.[30] In a study evaluating an intervention based on MI constructs aimed at reducing alcohol-exposed pregnancies among AI women, alcohol consumption amount responses decreased significantly with each follow-up intervention session.[33] In a study completed in California, Native American tribal leaders were surveyed on their views of the acceptability of MI intervention to reservation-based youth who are drinking and their families. The results suggested that a substantial proportion of tribal leaders believed reservation youth would be accepting of MI, and further, that MI would be a useful prevention strategy for the youth.[37] In a study by May and colleagues (2008), women at high risk for drinking during pregnancy were provided with case management (CM) enhanced with MI as part of a Fetal Alcohol Syndrome prevention program in four AI communities. More specifically, MI was used to enhance CM communication and to effect change. Their results suggested that CM enhanced with MI can be pursued as a prevention program, as indicated by the multiple outcomes that provided evidence of efficacy.[38] Finally, in a randomized trial of primarily AI individuals who were sentenced to a jail/treatment program for their first drinking while intoxicated (DWI) offense, those randomized to the MI condition reported greater reductions in alcohol consumption from baseline levels compared to participants who did not receive MI.[25]

While the above studies and those conducted with non-AI/AN populations, suggest that MI would be an appropriate treatment for this population, we know very little about how substance use programs serving this population assess and use MI. Such studies are important as the substance abuse treatment service ecology for AI/ANs has important differences from the larger US substance abuse treatment system.

Indeed, the delivery of substance abuse treatment for AI/ANs is complex and provided by diverse health care delivery systems. The Indian Health Service (IHS), a federal agency in the U.S. Department of Health and Human Services, was created to meet the federal trust responsibility through the provision for a government health program for AI/ANs.[39] The IHS provides health care for federally-recognized AI/ANs in the U.S. However, the scope of services provided by the IHS is limited by the level of funding appropriated by Congress. In response to the tribes' preferences to provide services to their own people, Congress' historical preference that tribes become self-sufficient, and the goal for tribal self-determination established by the Nixon administration, the passage of the Indian Self-Determination and Education Assistance Act (ISDEAA) in 1975 enabled tribes to administer their own health care.[39] These tribally-enrolled programs, called "638 programs" by Public Law 93-638, allow for communities to design, pay, and deliver their own health care program.[40] Urban AI/ANs, however, have much fewer federally-guided choices in obtaining substance abuse care. As a result, many urban AI/ANs receive services in non AI/AN-

specific clinics where staff may be less familiar in understanding the treatment needs of this population.[41] This is noteworthy since approximately 70% of AI/ANs reside in urban area.[42]

In summary, MI is an EBT that shows real promise for addressing the needs of AI/ANs with SUDs, and there are ongoing efforts to make it more accessible to programs serving AI/AN communities. Due to our very limited knowledge regarding delivery of MI to this population that is at highest risk of SUDs, addressing this gap in knowledge is critical in order to improve dissemination and implementation of MI in programs serving AI/ANs. Using data from a nationwide sample of outpatient and inpatient programs offering substance abuse treatment to AI/ANs, this report examines correlates of MI implementation as they relate to workforce issues, respondent perceptions of MI, and how clinicians learned about MI.

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 (R01-DA022239). This project focuses on how substance abuse treatment programs serving AI/AN communities use and perceive EBTs; it also examines how these treatment programs design, implement, and assess their services and how they incorporate cultural, evidence-based concepts and healing techniques into these services. More details regarding this project and its earlier phases are described in published articles[43–45] and on the project's website (website URL blinded to ensure double-blind peer review)

Participants and study procedures

As described in detail elsewhere,[45] data collection was conducted using a stratified sampling approach which divided the surveyed programs into five strata: (1) the 20 largest AI/AN tribes; (2) urban AI/AN health clinics; (3) substance abuse treatment 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).

Each program was contacted to determine whether it provided substance abuse treatment services to AI/AN communities. If the program confirmed providing such services, we described our project and asked whether there was a clinical administrator or other senior clinical staff member that we could ask to complete the survey.[45] The Advisory Board, comprised 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, designed the survey by drawing on examples of other surveys of substance abuse treatment programs[46–49] as well as the results of the qualitative interviews and focus groups conducted in the second phase of the project. The final survey used in the study included 17 sections. Twelve of these sections focused on key evidence-based substance abuse treatments and included 67 questions. Depending on the program's EBT implementation status, each respondent answered a minimum of one to a maximum of 17 questions for each of the twelve EBTs. The remaining five sections included an average of 16 questions each on program structure and staff composition, assessment practices, quality assurance and strategic planning activities, and attitudes towards EBTs.

Once data collection was completed, all data were de-identified. Participants included clinical administrators or other senior clinical staff and 15 Alcohol or Drug Abuse (AODA)/ Chemical Dependency Counselors or program psychologists from 192 of the 307 programs identified as providers of substance abuse treatment services to AIAN communities. This yielded an overall participation rate of 63%, which is consistent with recent meta-analyses of participation rates in telephone and internet surveys.[50,51]

The University of Colorado Institutional Review Board (IRB) and the Oregon Health and Sciences University IRB approved these study procedures. The Indian Health Service IRB classified the study as not being human subjects research so no approval was required.

Measures

Dependent variables: Implementation of MI—Measures for whether MI had been implemented at the surveyed programs were drawn from the survey section examining how programs use this EBT. A brief description of MI was provided, and then participants rated their program's experience with MI as follows : 0 = *unfamiliar with MI*; 1 = *not interested in MI*; 2 = *considered MI, but see many pros and cons*; 3 = *planning on using MI, but have not used it yet*; 4 = *using MI, but not a permanent part of the program*; 5 = *MI a permanent part of the program*; and 6 = *used MI in the past, but don't use it currently*.

Using these ratings, an MI implementation variable was created. After excluding programs that reported they were not familiar with MI, programs were categorized as an "MI implementer" if their experience rating response was greater than or equal to four (*using MI, but not on a permanent basis*; *MI is a permanent part of the program*; or *used MI in the past, but don't use it currently*). When experience ratings were less than four (*not interested in MI*; or *considering or planning to use MI, but not yet using it*) programs were coded as "MI non-implementer."

Independent variables—Potential correlates of MI implementation were organized into four groups drawn from leading theoretical models for the implementation of EBTs[52,53] and drawing on the following sections of the survey: program characteristics, workforce issues, respondent perceptions of MI, and how clinicians learned about MI. Program characteristic queries covered program ownership, staffing challenges, funding sources (direct [Indian Health Service, 638 compact, tribal, and state block grants], enhanced [IHS 638 contract and HRSA]$_1$, grants [federal/non-federal grants, contracts, or cooperative agreements], or reimbursed services [fee for service including Medicaid]), program accreditation$_2$, level(s) of American Society of Addiction Medicine (ASAM) care provided, continuing education requirements, whether the program provides mental health services on site, and whether it is required to use EBTs.

Workforce issue queries measured staff characteristics such as ethnicity, education, certified addiction counselors on staff, years of experience in current program, and mainstream mental health and social work disciplines represented.

Respondents' perceptions of MI were measured in "choose all that apply" questions asking about the pros or cons of MI or reasons the program chose to use MI or not to use the

treatment. For example, in the pros question, respondents could select that "MI is culturally appropriate." Similarly, in the cons questions, a program may have indicated that MI "isn't culturally appropriate" as a con or reason they were not using or considering the use of MI.

Analytic Procedure

First, we developed four multivariate logistic regression models, one for each group of independent variables (program characteristics, workforce characteristics, clinicians' positive perceptions of MI, and clinicians reported methods of learning about MI), to explore associations with MI. These groupings were constructed in consideration of prominent theoretical frameworks for understanding the dissemination and implementation of evidence-based treatments in health care[52–54] and over 10 years of research that surveyed treatment programs and factors that influence treatment services and experiences.[48,55–57] In developing these multivariate models, we first selected covariates that had univariate associations with MI implementation at $p < 0.25$.[58] We then used backward elimination to remove variables from each model until all remaining variables were either themselves significant at $p < .05$ or belonged to a set of related variables (responses) with at least one significant at $p < .05$.[58]

Second, using those variables that were significant at $p < .05$ in each of these group-specific models, a final, overall multivariate logistic regression model was developed. With this model we wanted to estimate relationships with MI implementation after controlling for as many sources of variation as possible. Hence our final model contained all significant covariates from the group-specific models and was not restricted by backward elimination.

Finally, we conducted descriptive analyses of perceived effectiveness and satisfaction with MI among those programs that implemented this intervention.

Results

Overall clinic characteristics

A total of 192 respondents completed the survey. Most indicated they were either the Program (58.3%) or Clinical Director (32.3%). Other positions endorsed included Lead Clinician (9.9%), Program Psychologist (3.1%), Substance Abuse Counselor/Chemical Dependency Counselor (13.5%), or Behavioral Health Director (3.1%). Of these, 169 (88.0%) were familiar with MI, and 23 (11.9%) were not. Programs whose respondents were familiar with MI were further categorized into two groups for analysis: *MI implementers* (n = 127 [75.1% of those familiar with MI]) and *MI non-implementers* (n = 42 [24.9%]). MI implementers included three clinic subcategories: (1) those using MI on a permanent basis (n = 87 [45.3%]); (2) those using MI, but not permanently (n = 37 [19.3%]); and (3) those who used MI in the past, but are not currently using it (n = 3 [1.6%]). MI non-implementers included the following three clinic subcategories: (1) those planning on using MI in their program, but have not used it yet (n = 17 [8.9%]); (2) those who have considered using MI but see pros and cons in using it (n = 20 [10.4%]); and (3) those who were not interested in MI and do not think it would be effective in their program (n = 5 [2.6%]).

Program characteristics by MI implementation status

Three of the 19 variables measuring program characteristics were associated with MI implementation in the first multivariate logistic regression model (Table 1). When controlling for all types of ownership (which were not mutually exclusive categories and included five types of ownership), the odds of MI implementation were nearly three times greater when program ownership was tribal (OR = 2.873, CI_{95}: 1.127, 7.323) and 3.6 times greater when program ownership was an independent non-profit (OR = 3.561, CI_{95}: 1.136, 11.166) versus other types of ownership. Likewise, programs providing mental health services on site had a 3.4 times higher odds of implementing MI (OR = 3.372, CI_{95}: 1.577, 7.209), compared to those who did not offer these services on site.

Workforce characteristics by MI implementation status

Two of the 10 variables measuring staff characteristics were associated with MI implementation in the second multivariate logistic regression model (Table 2). The odds of MI implementation was four times greater in programs where more than half the staff were certified alcohol and drug counselors (CADCs) compared to those where half or fewer staff were CADCs (OR = 4.170, CI_{95}: 1.328, 13.092). Similarly, the odds of implementing MI were doubled when mental health counselors were present on the staff compared to when they were not (OR = 2.277, CI_{95}: 1.035, 5.009).

Clinician perceptions of MI by MI implementation status

Table 3 reports respondents' positive perceptions of MI, which were not mutually exclusive and included nine categories. Two variables remained significant in the final model of positive perceptions of MI. The odds of MI implementation were nearly three times greater in programs where respondents perceived MI as culturally appropriate (OR = 2.928, CI_{95}: 1.269, 6.757) than in programs where it was not perceived as appropriate. Furthermore, the odds of implementing MI were over three times higher among respondents who thought MI fit with the expertise and training of their program staff (OR = 3.114, CI_{95}: 1.340, 7.235) than among respondents who didn't think it fit.

Among nine methods used by program staff to learn about MI (Table 4), only one variable was related to MI implementation. The odds of implementing MI were more than three times higher in programs where respondents reported that their program staff learned about the treatment by attending a Motivational Interviewing Network of Trainers (MINT) training (OR = 3.273, CI_{95}: 1.537, 6.969) than among respondents who learned about MI in some other way..

Final logistic regression model

Twelve variables were included in our final logistic regression model (Table 5). Of these, three were significant at p < .05. The odds of a program implementing MI were nearly three times higher when programs were owned by tribal entities compared with other forms of ownership (OR = 2.946, CI_{95}: 1.014, 8.564). Moreover, the odds of implementation were also five times higher in programs where more than 50% of staff were CADCs (OR = 5.469, CI_{95}: 1.330, 22.487) versus programs where no staff were CADCs. Finally, the odds of a program implementing MI were three times higher in programs in which the survey

respondent perceived that MI fit with their staff's expertise and training (OR = 3.321, CI$_{95}$: 1.287, 8.569) compared to the odds among programs where the respondent didn't think it fit.

Perceived effectiveness and satisfaction with MI among implementers

Among programs implementing MI, the vast majority of respondents perceived the treatment to be either very effective (40.5%) or somewhat effective (58.7%). One-hundred percent of implementers reported being either very satisfied or somewhat satisfied with the treatment. Only one respondent (0.8%) reported that staff members were not satisfied, and two (1.6%) reported clients were not satisfied with MI.

Discussion

Results from this study highlight characteristics that were significantly more common among substance abuse treatment programs serving AI/ANs that implement MI when compared to programs serving AI/ANs that do not implement MI. In the final logistic regression model they were 1) programs that were owned by tribal compared with other forms of ownership, 2) programs where more than 50% of staff were CADCs versus less than or equal to 50% CADCs on staff, and 3) programs that perceived that MI fit with their staff's expertise and training compared to other perceptions about MI. Further insights into these characteristics, which follow in this report, may help to identify strategies that could aid in broader dissemination and utilization of MI for this population.

Tribally-run programs were more likely to implement MI compared to other forms of ownership. These results suggest that tribally-run substance abuse treatment programs recognize more the potential benefits of MI for their clients; hence, they more adequately train their staff in this treatment modality. However, to date, very little research has been conducted analyzing the differences in overall infrastructure and scope of substance use services between IHS and tribally-run programs. In a study conducted by Alyce Adams, programs who switched from traditional IHS to 638 programs had lower poverty and higher tribal to federal employment ratios.[59] Also, among tribes that made the switch to 638 programs, many had other alternate ways to support their health programs.[59,60] Although it may be inferred from this study that tribally-run programs had more resources that allowed for a higher likelihood for implementing MI, further research is suggested to analyze infrastructure and substance use EBT training allocation differences between these two types of health care delivery systems. Qualitative research methodologies may assist toward beginning to understand the differences between these two health care delivery systems as it relates to the implementation and training of MI by obtaining the perspectives from substance use counselors and administrators. This qualitative data may help to capture key insights into how training is provided within these health care systems in addition to identifying strategies which may help to enhance MI competence within these respective health care delivery systems.

When more than 50% of staff were CADCs in substance abuse treatment programs serving AI/ANs, MI was significantly more likely to be implemented. Furthermore, since we ran program ownership and counselor certification in the same model, we found that CADC status is also related to MI implementation independent of program ownership (and vice

versa). **CADCs are well-recognized substance abuse counselors providing alcohol and drug counseling in the United States. Requirements for licensure are determined by state. However, training typically includes a combination of approved** education, supervised practical training or work experience, field practicum hours, and written and oral exams. Results from our study suggest that CADC licensure programs train/expose their students to MI resulting in their eventual implementation of MI upon graduation. Thus, these results highlight the need for substance abuse treatment programs serving AI/ANs to prioritize the need to hire only staff adequately trained and credentialed in substance abuse treatment. This may help to ensure that their clients are receiving appropriate care to help meet their challenging and complex needs.

Findings from this study also highlight complicated and controversial issues as they relate to qualifications for providing substance abuse treatment services.[61] For example, according to a study conducted by the National Center on Addiction and Substance Abuse at Columbia University utilizing large national and state-based reports generated among the general U.S. population, "the vast majority of people in need of addiction treatment do not receive anything that approximates evidence-based care" and that "Only a small fraction of individuals receive interventions or treatment consistent with scientific knowledge about what works."[62] Results from this study validate the notion that receiving adequate substance abuse training results in a greater likelihood to deliver MI which, in turn, could help clients change their substance use and related behaviors. Nonetheless, further research is suggested to analyze credentialing/certification characteristics among the diverse workforce serving AI/ANs including IHS clinics, tribally-run organizations, urban clinics, and other organizations serving AI/ANs in order to develop strategies to optimize the level of care that AI/ANs with SUDs receive.

While not all substance abuse providers may have the same level of expertise or training, there are various avenues in which providers may receive adequate MI training within their substance abuse treatment programs. Although only significant in the group-specific regressions, MI-implementing programs were more likely to utilize trainers who are members of the Motivational Interviewing Network of Trainers (MINT) than non-MI implementing programs. MINT is an international organization of trainers in MI that provides a train-the-trainer (TT) model of training.[63] MI trainers or experts train people who demonstrate competence in MI in order for them to teach it to others. Trained practitioners are able to return to their programs and train, supervise, and monitor their staff members' use of MI. Other MI training modalities are also available including, but not limited to, use of teleconferencing,[64] various open source manuals including the two AI/AN culturally specific MI Manuals,[13,24] web-based trainings, and live supervision. However, regardless of how MI is learned, new skills acquired during training may diminish over time.[65,66] Thus, long-term supervision that include post-workshop, long-term supervision may help to facilitate facilitator competence in MI.[66] By enhancing provider's skills in the fundamentals of MI through MINT trainings and other avenues of training and adapting its use for AI/ANs, providers with various levels of expertise or training can become proficient at delivering MI.

One of the significant group-specific regression findings in this study found that MI-implementing clinics perceived MI as culturally appropriate for AI/ANs. This findings correlates with community-based reports that MI concepts are consistent with AI/AN culture, values, and interactional styles[22,23] and aforementioned studies that have found MI beneficial for AI/ANs. This finding may help to alleviate concerns among non MI-implementing clinics that MI may not be culturally-congruent with AI/AN culture and values. Thus, this realization that MI is generally culturally-acceptable and is potentially beneficial may then encourage substance abuse programs to ensure that their staff is adequately training in MI. Utilization of manuals created specifically for AI/ANs[13,24] may also provide techniques and approaches that can help to ensure cultural congruency in the delivery of MI for AI/ANs with SUDs.

This report is subject to several limitations. Data retrieved from clinics is based on self-report information from clinical administrators or other senior clinical staff. In addition, the cross-sectional nature of this data precludes the ability to establish the directionality of these relationships. Furthermore, the practitioners' level of competence in using MI was not known. In spite of these limitations, results from this study provide valuable information with regard to MI utilization and perceptions among clinics providing substance use treatment services to AI/ANs.

Acknowledgments

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Implications for Behavioral Health

MI is a treatment modality that offers promise for AI/ANs with SUDs. The results from this study highlight the need for ensuring that AI/AN clients receiving substance abuse treatment are treated by counselors adequately trained in MI and other EBTs. This can be accomplished by establishing well-defined minimum certification and training requirements for substance abuse counselors treating AI/ANs across the U.S. An inherently challenging dilemma that exists in the healthcare delivery for AI/ANs is the wide diversity of management and ownership of substance abuse clinics that serve this population. In addition, variations may exist with regard to state licensure of substance abuse counselors. Thus, it may be necessary to tailor dissemination efforts to these program based on their management and ownership structures. Ensuring that substance abuse counselors possess at least CADC-level credentials may help to ensure that AI/AN clients receiving substance abuse treatment have the full potential to achieve and sustain sobriety, ultimately helping to decrease the burden of substance abuse within this population. However, although delivery of healthcare for AI/ANs is complicated and diverse throughout the U.S., substance abuse treatment programs can take steps to ensure that their providers are adequately trained in MI through a variety of viable formats. Finally, further research analyzing workforce characteristics and MI training approaches utilized among the various types of health care organizations serving AI/ANs with SUDs can help to enhance MI dissemination for AI/ANs with SUDs.

Table 1

Program characteristics by implementation status.

	All Programs Familiar with MI (n=169) %	Programs not using MI (n=42) %	Programs using MI (n=127) %	Multivariate Logistic Regression	
				OR	CI$_{95}$
Program Ownership					
Tribal (incl. tribally chartered non-profit)	53.9	47.6	55.9	2.873*	1.127, 7.323
Tribal consortium	10.1	4.8	11.8		
Indian Health Service/Federal	50.9	52.4	50.4		
Independent non-profit organization	21.9	14.3	24.4	3.561*	1.136, 11.166
For profit organization	2.4	4.8	1.6		
Struggle to recruit/retain staff	53.3	50.0	54.3		
MH services provided on site	67.5	47.6	74.0	3.372*	1.577, 7.209
Types of funding					
IHS direct and 638 compact, tribal, and state block grant	68.6	61.9	70.9		
IHS 638 contract and HRSA	56.8	59.5	55.9		
Grants and cooperative agreements	40.2	38.1	40.9		
Medicaid and fees for service	63.9	57.1	66.1		
Program accredited^A	24.9	28.6	23.6		
Levels of American Society of Addiction Medicine care provided					
0.5, Early Intervention	63.3	61.9	63.8		
I, Outpatient Treatment	91.1	88.1	92.1		
II, Intensive Outpatient/Partial Hospitalization	37.3	31.0	39.4		
III, Residential/Inpatient Treatment	20.1	21.4	19.7		
IV, Medically-Managed Intensive Inpatient Treatment	2.4	4.8	1.6		
Continuing education (CE) requirement	82.8	73.8	85.8		
Required to use EBTs	45.6	38.1	48.0		

*
p<.05

*A*Accrediting organizations included CARF, JC/JCAHO, State Organization/Single State Authority, and AAAHC

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Table 2

Workforce characteristics by implementation status.

	All Programs Familiar with MI (n=169)	Programs not using MI (n=42)	Programs using MI (n=127)	Multivariate Logistic Regression	
	% or mean±sd	% or mean±sd	% or mean±sd	OR	CI$_{95}$
Percentage of staff comprised of American Indians/Alaska Natives					
None	17.8	16.7	18.1		
1–50%	43.8	31.0	48.0		
More than 50%	38.5	52.4	33.9		
Percentage of staff certified as addictions counselors					
None	10.1	19.1	7.1	--^{A}	--^{A}
1–50%	44.4	50.0	42.5	1.932	0.638, 5.848
More than 50%	45.6	50.4	30.9	4.170 *	1.328, 13.092
Disciplines represented on staff					
Mental health	74.0	61.9	78.0	2.277 *	1.035, 5.009
Social work	66.9	69.1	66.1		
Staff mean years of education	16.45±1.54	16.15±1.91	16.55±1.38		
Staff mean years of experience in program	5.43±3.22	5.26±3.29	5.49±3.20		

^{A}reference group

*
p<.05

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Table 3

Clinicians' positive perceptions of MI by implementation status.

	All Programs Familiar with MI (n=169)	Programs not using MI (n=42)	Programs using MI (n=127)	Multivariate Logistic Regression	
	%	%	%	OR	CI$_{95}$
Consistent with treatment approach and philosophy	74.0	61.9	78.0		
Culturally appropriate	61.5	33.3	70.9	2.928*	1.269, 6.757
Existing research base proves effectiveness	65.1	45.2	71.7		
Innovative and promotes good practice	69.8	61.9	72.4		
Fits with staff expertise and training	59.8	31.0	69.3	3.114*	1.340, 7.235
Ensures consistent and standardized treatment	52.1	35.7	57.5		
Billable service	17.8	14.3	18.9		
Can be marketed for political or funding purposes	17.2	16.7	17.3		
Raises program reputation	24.9	19.1	26.8		

*
p<.05

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Table 4

Clinicians' reported methods of learning about MI by MI implementation status.

	All Programs Familiar with MI (n=169)	Programs not using MI (n=42)	Programs using MI (n=127)	Multivariate Logistic Regression	
	%	%	%	OR	CI₉₅
	%	%	%		
in school	53.8	42.9	57.5		
attending seminar, conference, or workshop	88.8	85.7	89.8		
reading journal articles	56.2	52.4	57.5		
reviewing treatment manual	49.7	42.9	52.0		
finding information on the internet	45.6	40.5	47.2		
attending M.I.N.T training	49.7	28.6	56.7	3.273*	1.537, 6.969
working with a consultant	27.2	19.1	29.9		
discussing with colleagues	56.2	40.5	61.4		
through clinical supervisor or training program	39.1	26.2	43.3		

*
p<.05

Table 5

Odds ratios and confidence intervals from the multivariate logistic regression model of those predictors that were significant in tables 1–4.

	OR	CI$_{95}$
Program Ownership		
Tribal (incl. tribally chartered non-profit)	2.946*	1.014, 8.564
Tribal consortium	2.526	0.372, 17.142
Indian Health Service/Federal	1.599	0.604, 4.236
Independent non-profit organization	3.264	0.836, 12.743
For profit organization	0.281	0.022, 3.615
MH services provided on site	1.856	0.645, 5.341
Percentage of staff that are certified as addictions counselors		
None	$\_$_A_	$\_$_A_
1–50%	2.672	0.672, 10.632
More than 50%	5.469*	1.330, 22.487
Disciplines represented on staff		
Mental health	1.283	0.395, 4.165
MI is culturally appropriate	2.010	0.780, 5.179
MI fits with staff expertise and training	3.321*	1.287, 8.569
Learned about MI by attending M.I.N.T training	2.445	0.991, 6.032

_A_reference group

*p<0.05