Attitudes Towards Evidence-Based Practice in Substance Use Treatment Programs Serving American Indian Native Communities

Joanna C. Moullin, PhD
Laurie A. Moore, MPH
Douglas K. Novins, MD
Gregory A. Aarons, PhD

Abstract

The objective of this paper was to compare attitudes towards evidence-based practice (EBP) of substance use disorder treatment (SUDT) center employees' serving American Indian and Alaskan Native (AIAN) populations to those serving non-AIAN populations. Survey data on the openness and divergence subscales of the Evidence-Based Practice Attitude Scale (EBPAS) were collected and analyzed. Independent samples T tests were performed to compare the two samples. For all comparisons, except the divergence subscale between counselors, the SUDT employees serving AIANs had significantly lower mean openness scores and higher mean divergence scores than those serving non-AIANs. This study suggests that employees of SUDT centers serving AIAN population hold less positive attitudes towards the adoption and use of EBP than non-AIAN.

Address correspondence to Joanna C. Moullin, PhD, Child and Adolescent Research Centre, San Diego, USA.
Joanna C. Moullin, PhD, Curtin University, GPO Box U1987, Perth, WA 6845, Australia.
Gregory A. Aarons, PhD, Child and Adolescent Research Centre, San Diego, USA.
Laurie A. Moore, MPH, Centers for American Indian and Alaska Native Health, University of Colorado Denver, Denver, CO, USA.
Douglas K. Novins, MD, Centers for American Indian and Alaska Native Health, University of Colorado Denver, Denver, CO, USA.
Gregory A. Aarons, PhD, University of California San Diego, La Jolla, CA, USA.

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INTRODUCTION

There is an increasing pressure in substance use disorder treatment (SUDT) settings to implement evidence-based practices (EBPs) as a requirement for receiving government funding[1,2] and to promote quality of care. Consequently, challenges in implementation are being felt across the sector.[3] Practitioners' and/or providers' attitudes towards evidence-based practice (EBP) are thought to be one factor that may mediate the EBP implementation process and as such could be a target for implementation strategies.[4] Appropriate tailoring of implementation strategies may be facilitated by knowledge of a SUDT program's staff openness to EBP and the degree EBP diverges that current practice (divergence), and these may be associated with the service population.

Problematic substance use is an issue for both American Indian and Alaskan Native (AIAN) and non-AIAN populations.[5] However, there are many unique factors at play that may influence the attitudes towards EBP of providers in SUDT programs serving AIAN populations. For example, there is a resurgence of traditional healing practices and a strong desire for culturally adaptable treatments.[6] As such, it is hypothesized that providers' of programs serving American Indian and Alaskan Native (AIAN) populations may be less open to EBP and feel that there is a greater divergence in EBP from their current practice than those programs serving non-AIAN populations.

From the onset, EBP has had its critics.[7] One concern is that excessive emphasis has been placed on scientific evidence, which has encouraged a rigid application of evidence, rather than a skilled interpretation and adaptation in a contextually and clinically appropriate manner.[8] Moreover, such application and reliance on scientific evidence alone has the potential to marginalize indigenous and non-Western populations as research that meets modern experimental samples have largely been conducted with samples drawn from Western populations.[6]

Assessment of attitudes towards EBP is important to inform the development, adaptation, and implementation of EBPs.[9] There are a number of developed EBPs,[10] and attitudes towards EBP have been assessed in multiple settings, by multiple respondent types,[11–13] for example, mental health providers in community health centers,[13] medical doctors in Greek hospitals,[11] and licensed clinical social workers.[12] However, the attitudes towards EBP of providers in SUDT agencies serving AIAN communities is largely unknown.

An improved understanding of the complexities of AIAN SUDT context is essential to moving EBPs into practice. Research related to the health of the AIAN people has been set as a priority by the NIH indicated by the establishment of a NIH Tribal Health Research Office.[14] Although provider attitudes towards EBPs vary generally, the overall attitudes of those serving indigenous populations towards "Western" EBPs may be less positive and this may subsequently affect EBP implementation.[15] As a precursor and benchmark to such work, this study sought to determine and compare SUDT center employees' openness towards EBP and the divergence of EBP from the current practice of those serving the AIAN population to those of SUDT center employees' serving non-AIAN populations. It was hypothesized that attitudes of employees serving AIAN communities would be less positive towards EBPs than those serving non-AIAN communities.

METHODS

Data Collection Procedures

Data for the AIAN provider sample was drawn from a larger study on factors affecting the use of EBP in SUDT agencies serving AIAN communities.[16] Data collection was conducted in 2011–2012 using a stratified sampling approach, dividing programs into five strata based on: the 20 largest AIAN tribes, urban AIAN health clinics, substance abuse services operated by Alaska Native Health Corporations, other tribes (federally recognized minus the 20 largest), and other local and regional programs who serve non-AIAN and AIAN people (independent nonprofit or for

profit). Our selections were influenced by existing tribal, organizational, and substance abuse program listings; consultation with IHS and state substance abuse treatment and administrative staff; and analysis of publically available information online. We contacted each program to determine whether it provided substance abuse treatment services to AIAN communities. If the program confirmed providing such services, we described the project and asked whether there was a senior staff member whom we could ask to participate.

We identified 445 specific treatment programs that had the potential to provide substance abuse services to AIAN communities and determined that 307 of these were eligible to participate. One participant from each program, ideally in a clinical leadership/supervisory role, was invited to participate. We contacted each program to determine whether it provided substance abuse treatment services to AIAN communities. If the program confirmed providing such services, we described the project and asked whether there was a staff member whom we could ask to participate. Ultimately, 22 counselors and 170 supervisors/clinical directions from 192 programs responded, yielding an overall participation rate of 63%. [17] For a more detailed description of the sampling see Novins et al.[18] and Rieckmann et al.[17] Participants in this study received a $40 Walmart gift card to compensate for their time.

The non-AIAN sample were participants in a study of the implementation and organizational measures, such as implementation leadership and implementation climate conducted in 2013–2015.[19] For the non-AIAN sample, the research team contacted agency executives and described the study as focusing on developing measures to better understand organizational context factors that might affect the implementation and sustainment of EBPs. Once agency executives agreed, researchers proceeded to use email and phone to recruit supervisors and providers for participation. In order to be eligible for the study, it was required that participants had prior experience with one or more EPBs and had been working with their supervisor for at least 3 months. Once teams were recruited, a telephone orientation meeting was conducted. A project overview was provided and questions were answered including those pertaining to definitions of EBP. In these agencies, 364 SUDT program employees were approached to participate and 329 completed the surveys (90.4% participation rate). Three cases were excluded due to the missing data resulting in an analytic sample of 275 counselors and 51 supervisors. Participants in this study received a $15 gift certificate for their participation.

Participants

Participants were employees of SUDT programs from two different samples as described above. Sample demographics for those serving AIAN SUDT programs were 60.4% female, 50.5% AIAN, 50.5% had a masters degree and 9.4% had a doctoral degree, 65.6% were licensed counseling professionals (including a licensed addictions counselor, licensed clinical social worker, licensed clinical psychologist, licensed physician, etc.), and 66.7% had been employed in the SUDT field for more than 10 years. Sample demographics for the non-AIAN SUDT programs were 55.4% Caucasian, 16.8% African-American, 2.6% Asian-American or Pacific Islander, 1.4% Native-American, and 14.2% others. In addition, 25.6% of the participants identified as Hispanic/Latino, 59.1% were female and 27.7% had a masters, while 1.9% had a doctoral degree. See Table 1 for a summary of respondent characteristics.

Of the 192 SUDT programs represented in the AIAN sample, 26.0% were located in a suburban or urban location and 73.9% in a rural location. On average, there were 5.6 (SD = 7.6) frontline staff per program with an average of 5.6 (SD = 3.5) years of service for staff at these programs. In total, 16.7% of programs had no AIAN staff, 44.8% had between 1 and 50% of AIAN staff, and 43.2% had over 50%. The percentage of staff in recovery from alcohol or drug use disorders was

Table 1
Respondent characteristics

	AIAN data		National (non-AIAN) data		X^2 or T test	P
	N or mean ± sd	% or sd	N or mean ± sd	% or sd		
AIAN	97	50.52%	5	1.57%	(1, $N = 510$) = 179.27	< .0001
Sex ($n = 519$): % female	116	60.42%	208	63.61%	(1, $N = 519$) = .5255	.4685
Education ($n = 510$)	4.44	0.97	3.82	0.99	1.04 (DF = 317)	< .0001
Tenure at present agency ($n = 518$)	7.17	6.07	4.16	4.81	5.87 (DF = 332)	< .0001
Tenure working in mental health services ($n = 516$)	13.69	6.41	8.09	7.30	8.84 (DF = 514)	< .0001
Employee location (rural) ($n = 542$)	142	73.96%	40	11.43%	(1, $N = 542$) = 217.35	< .0001

Education, present agency, and mental health services—Satterthwaite

14.6% with no staff in recovery, 53.1% with 1–50% of staff, and 29.7% with over 50% in recovery. The non-AIAN participants were employed at four agencies in 29 programs: 310 (88.6%) operated in an urban location and 40 (11.4%) operated in a rural location. On average, participants had been at their current agency for 4.2 (SD = 4.8) years and worked in SUDT services for 8.1 (SD = 7.3) years. Their average caseload per month was 13.2 (SD = 17.0) clients.

While some AIAN individuals may receive services from the public sector community-based programs, that proportion of clients is generally quite low and the focus is on providing SUDT services for a diverse population. In contrast, the AIAN programs provide services primarily for AIAN individuals, with only a small percentage of clients coming from other backgrounds.

Measures

The Evidence-Based Practice Attitudes Scale (EBPAS) assesses individuals' attitudes towards the adoption and use of EBP.[20,21] The EBPAS is comprised of 15 items scored on a 5-point Likert scale indicating the degree to which respondents agree to each item (0 "not at all" to 4 "to a very great extent"). The items form four subscales representing individuals' attitudes towards adopting EBP as a function of (1) the *appeal* of the EBP, (2) *requirements* to adopt the EBP, (3) their *openness* to new practices, and (4) their perception of *divergence* between EBP and their usual practice. The EBPAS was originally developed with child and adolescent mental health service providers and managers in one California county[20]; the reliability (Cronbach's alpha range = .66–.91, overall alpha = .76) and validity of the scale has subsequently been supported across studies in community organizations in 17 states[22] and later a further 26 states and 100 mental health programs.[21] The scale has also been used in diverse SUDT settings and has shown a good internal consistency reliability (Cronbach's alpha = .82).[23–25]

The openness and divergence subscales of the EBPAS were included as part of wider data collection procedures of the aforementioned studies [Table 2]. The two subscales were selected in the AIAN program surveys in order to assess and compare the SUDT employees' general openness to the use of new practices (i.e., openness subscale) and the degree to which respondents perceive EBP to be incongruent with their usual practice (i.e., divergence subscale). The divergence subscale required reverse scoring before being analyzed. As noted in Table 2, the term Evidence-Based Treatment (EBT) was used as the introduction to the EBPAS survey questions in the AIAN settings, while EBP was used as the introduction in the non-AIAN programs. Despite debated differences in terminology,[26] in practice, these terms are often used interchangeably. Importantly, the same description/instructions immediately prior to the EBPAS subscales was provided to both samples.

ANALYSES

Six independent samples *T* tests were performed to compare the openness and divergence to EBP between the sample serving an AIAN population to the sample of providers serving a non-AIAN population from SUDT centers. For each subscale, the *T* tests were performed three times comparing AIAN to non-AIAN for all respondents, supervisors only, and counselors only. The Bonferroni correction was applied to each test to adjust for multiple comparisons.

Multiple linear regression analyses were conducted to examine associations between EBPAS Openness and Divergence scores and respondent characteristics. Characteristics included in the analyses were: AIAN heritage, gender, education, years employed in a current position, years employed in mental health services, program location (urban/rural), data source (AIAN dataset vs.

Table 2

EBPAS openness and divergence subscales

Openness
1. I like to use new types of therapy/interventions to help my clients.
2. I am willing to try new types of therapy/interventions even if I have to follow a treatment manual.
3. I know better than academic researchers how to care for my clients.
4. I am willing to use new and different types of therapy/interventions developed by researchers.
Divergence
5. Research based treatments/interventions are not clinically useful.
6. Clinical experience is more important than using manualized therapy/interventions.
7. I would not use manualized therapy/interventions.
8. I would try a new therapy/intervention even if it were very different from what I am used to doing
Note:
(A) Instructions provided to AIAN study participants introducing the section where the EBPAS subscales were included, "The next section of the survey is about Evidence-Based Treatments. We will be using the following definition of evidence-based treatment: any practice that has been established as effective through scientific research… (Drake et al., 2001)."
(B) Instructions provided prior to EBPAS subscales for both surveys, "The following questions ask about your feelings about using new types of therapy, interventions, or treatments. Manualized therapy refers to any intervention that has a manual with specific steps that need to be followed."

Table 3
Openness analyses

	n	Mean	95% CL mean		Std dev	*T* test method	Variances	DF	*t* value	*P*
Counselors										
AI/AN	22	2.318	2.051	2.586	0.604					
Non-AI/AN	275	2.800	2.716	2.885	0.710					
Diff (g1–g2)		− 0.482	− 0.789	− 0.176	0.703	Pooled	Equal	295	− 3.10	0.0126
Supervisors										
AI/AN	170	2.253	2.134	2.372	0.788					
Non-AI/AN	51	2.976	2.813	3.138	0.577					
Diff (g1–g2)		− 0.723	− 0.923	− 0.523	− 0.745	Satterthwaite	Unequal	111.29	− 7.16	0.0006
Combined										
AI/AN	192	2.260	2.151	2.370	0.768					
Non-AI/AN	326	2.828	2.752	2.903	0.692					
Diff (g1–g2)		− 0.567	− 0.696	− 0.438	0.722	Pooled	Equal	516	− 8.64	0.0006

non-AIAN source), and position (supervisor/counselor). First, we tested interactions between each of the aforementioned characteristics and data source to evaluate for biases unique to each data source. Next, each saturated model was trimmed using a backward stepwise selection.

RESULTS

As shown in Tables 3 and 4, for all comparisons, with the exception of the divergence subscale between counselors only, the AIAN SUDT employees had significantly lower mean openness scores and higher mean divergence scores than non-AIAN SUDT employees [see Tables 3 and 4].

This confirmed respondents serving AIANs as being less open ($M = 2.260$) than those serving non-AIAN clients ($M = 2.828$), t (516) = 8.64, $p<.005$ [see Table 3]. These results held also when calculated for counselors and supervisors separately. The hypothesis also confirmed higher divergence scores for the AIAN-serving population, with respondents serving AIANs seeing EBP as diverging—to a greater extent—from their current practice ($M = 1.466$) than those serving non-AIAN clients ($M = 1.280$), t (516)=2.88, $p < .005$ [see Table 4]. However, the variation in divergence scores was only statistically different for supervisors and not for counselors.

The multiple linear regression analysis on the EBPAS openness score indicated no interactions between the data source and respondent characteristics were significantly associated with respondent openness to EBP [See Table 5]. The trimmed model found a significant regression result (F (2, 505) = 41.13, $p < 0.0001$), with an R^2 of .1401. EBPAS openness score increased by .0651 points for each increase in the level of education, and openness scores were .6190 points greater in the non-AIAN dataset than in the AIAN dataset.

The multiple linear regression analysis on EBPAS divergence scores indicated a significant interaction between the data source and respondent education attainment, thus this term was included in the saturated model [See Table 6]. The trimmed model found a significant result (F (4, 499) = 7.69, $p < 0.0001$), with an R^2 of .0581. This indicates that EBPAS divergence score increased by .0110 points for each 1-year increase in the number of years worked in the SUDT field. Divergence scores were .7656 points greater in the AIAN dataset than in the non-AIAN dataset. However, in Figure 1, note that as education level increased in the AIAN sample, divergence increased as well. The opposite effect was found for the non-AIAN sample.

Table 4
Divergence analyses

	n	Mean	95% CL mean		Std dev	*T* test method	Variances	DF	*t* value	*P*
Counselors										
AI/AN (g1)	22	1.239	0.950	1.528	0.652					
Non-AI/AN (g2)	275	1.303	1.220	1.387	0.706					
Diff (g1–g2)		− 0.065	− 0.371	0.242	0.702	Pooled	Equal	295	− 0.42	0.6778
Supervisors										
AI/AN	170	1.496	1.386	1.605	0.725					
Non-AI/AN	51	1.152	0.952	1.352	0.713					
Diff (g1–g2)		0.344	0.116	0.571	0.723	Pooled	Equal	219	2.98	0.0192
Combined										
AI/AN	192	1.466	1.364	1.569	0.721					
Non-AI/AN	326	1.280	1.203	1.357	0.708					
Diff (g1–g2)		0.1865	0.0591	0.314	0.713	Pooled	Equal	516	2.88	0.0252

Table 5
Multiple linear regression on openness—trimmed model

Covariates	Est	SE	P
Education	0.0651	0.0321	0.0434
Data source (AIAN vs. national)	0.6190	0.0685	< .0001

DISCUSSION

This study demonstrated that counselors and supervisors of SUDT agencies serving an AIAN population are less positive towards the adoption and use of EBP compared to non-AIAN-specific SUDT agencies. This was the case for both general openness to new practices and also for the higher perceived divergence of EBP with usual treatment approaches. There may be cultural and contextual differences in service settings and client populations that led to these findings. For example, most EBPs were not developed with consideration of AIAN cultural norms and preferences. There could be a number of different interpretations of such differences. For example, it could be that EBPs lack sufficient cultural fit that is a critical element of the tripartite definition of EBP. Specifically, the tripartite definition of EBP involves the three elements of the best research evidence, clinical judgment and expertise, and consumer choice, preference, and culture.[27–29] Alternatively, such differences could stem from more or less exposure and use of EBPs. Nevertheless, despite differences to openness to EBP, almost all programs surveyed in the AIAN study were using at least one EBP, and as indicated by no significant differences in divergence subscale seen between the two groups.[30] This is likely to be, in part, related to mandates to use EBPs in order to receive a federal and or local governmental funding. Yet, these results suggest that investigation into the long-term consequences of such directives, and initiatives that foster a more culturally sensitive policy and EBP adaptation, is warranted.

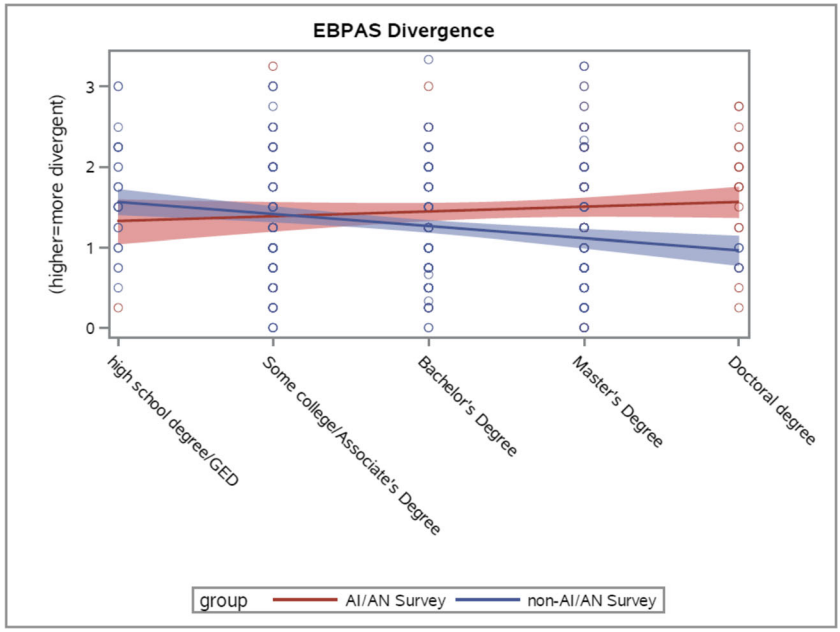
Assessment of associations between demographic characteristics and EBPAS openness and divergence scores are worthy of discussion. Our results indicate that the greater the level of education, the more open SUDT providers were to EBP. This supports our previous anecdotal understandings, where we have noticed newer counselors receive EBP training as part of their education, increasing their openness to EBP. An interesting result was an interaction between AIAN and non-AIAN groups and education for divergence. This indicates that although

Table 6
Multiple linear regression on divergence—trimmed model

Covariate	Est	SE	P
Years worked in mental health service	0.0110	0.0045	0.0149
Education	0.0669	0.0521	0.1996*
Data Source (AIAN vs. non-AIAN)	0.7656	0.2856	0.0177
Data source *education	− 0.2201	0.0654	0.0008

Education is retained because of the significant interaction with data source

Figure 1
Divergence: interaction between data source and education level



education increased openness to EBP in both AIAN and non-AIAN-serving groups, education did not have the same universal impact on divergence. Overall, the longer providers have been working in the field, the greater their practice diverges from EBP, indicating the more experienced counselors are often more resistant to EBP implementation. However, this relationship was dependent on the providers' level of education with AIAN providers' divergence from EBP increasing with higher levels of education while non-AIAN providers' divergence decreases. This may be related to our finding that the participants from programs serving AIAN communities had longer working tenures and higher educational attainment than participants serving non-AIAN communities, which makes it likely that more AIAN participants completed their education in the more distant past when the use of EBP would not have been emphasized in school curricula. Alternatively, it may be that with greater educational attainment, participants from programs serving AIAN communities become more aware of the limitations in applying EBP to work with AIAN (e.g., that the research to support EBP comes from non-AIAN programs), and thus more skeptical regarding its value.

The study builds upon qualitative research on the perception and use of EBP in SUDT programs serving AIAN.[15] Consistent with the current study results regarding perceived divergence, these qualitative findings suggest that there may be concerns among AIAN SUDT providers regarding the fit of EBP in their service setting. Such differences may be related to the cultural relevance of EBP and the emergence of the concept of EBP from Western cultural perspectives.[31] The results presented here add additional support that the implementation of EBP into AIAN SUDT service systems may face many challenges and require appropriate adaptations while maintaining the core elements of EBPs that are critical in attaining outcomes.

There are many complexities to conducting research in AIAN SUDT that limit the ease of overcoming intervention development and implementation barriers.[6] Lines of tension exist around substance use disorder services for AIAN communities as well as the use of EBP in programs serving AIAN communities. Furthermore, even if attitudes towards EBP may be improved, there are many structural, process, and organizational challenges to implementation.[32] These include, but are not limited to, lack of human resources and lack of infrastructure for implementation and evaluation. On the other hand, there are EBP concerns and implementation challenges across SUDT generally and other health and service sectors. For example, there are concerns regarding the quality, volume, applicability, and utility of evidence that have been voiced in the academic literature.[8] In addition, studies of the roles of support and attitudes about the adoption of an EBP approach in health and social services are mixed.[33,34]

As a potential promising direction, recent developments and perspectives promote broader EBP definitions that include three pillars: (1) best research evidence, (2) applied using clinical judgment and expertise, (3) and informed by patient preference, culture, and values.[35,36] As the EBP movement progresses, it is becoming increasingly clear that the second and third pillars covering practitioners' and/or providers' interpretation of the evidence and the culture and contextual fit are critical.[8] Moreover, practitioners' understanding and interpretation of these EBP components may affect their attitudes towards EBP generally towards specific EBPs, and may influence their subsequent adoption and use of EBPs. It has been argued that EBP needs to become more useable for both clinicians and patients, "refocusing on providing useable evidence that can be combined with context and professional expertise so that individual patients get optimal treatment".[8] It may be reasoned that this includes EBP being adapted to be more relevant, appropriate, and accessible for non-Western cultures and ideologies. Community-academic partnerships and methods such as intervention mapping and participatory action research are examples of approaches that may improve both the development and adaptation of SUDT interventions, as well as informing implementation and sustainment strategies.

Limitations

The different demographics of the two samples is both a strength and limitation of the paper. Interactions between demographic characteristics were assessed and accounted for in the analyses. In addition, we feel the samples are representative of the non-AIAN and AIAN serving SUDT providers, as described in the data collection procedures. It is worth noting, however, that there is a wide individual variability in attitudes towards EBP.[20,21]

The survey for AIAN SUDT included a list of EBPs as examples; however, the questions assessed employees' attitudes about EBP in general rather than a specific EBP. It may be that some EBPs are more or less appealing to particular people and populations. For example, one study in mental health showed a greater effect of attitudes towards a specific EBP than attitudes towards EBP in general.[33] In response to this concern, some SUDT settings serving AIAN populations have adopted and/or adapted Western culture–developed practices, such as the 12-step approaches with traditional healing.[6] Second, the instructions were slightly different in the two surveys; however, the EBPAS questions were identical in both samples and Likert scale categories were the same in both surveys.

IMPLICATIONS for BEHAVIORAL HEALTH

There is a need to improve the relevance, fit, and quality of EBPs and subsequent provider attitudes towards EBP. Further research to evaluate the determinants of attitudes towards EBP across cultures and settings is warranted, so that appropriate intervention development and

adaptation methods and implementation strategies may be utilized to improve behavioral health service outcomes.

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Compliance with Ethical Standards

The AI/AN study was approved by the Colorado Multiple Institutional Review Board and the Oregon Health and Science University's Institutional Review Board. The Indian Health Service Institutional Review Board (IHS-IRB) classified the study as not human subjects' research. The non-AI/AN study was approved by the Institutional Review Board of San Diego State University.

Conflict of Interest The authors declare that they have no conflicts of interest.

References

1. SAMHSA. Screening, Brief Intervention, and Referral to Treatment. Substance Abuse and Mental Health Services Administration Rockville; 2015.
2. Los Angeles County Substance Abuse Prevention and Control. Transformation of the Los Angeles County Substance Use Disorder System of Care. Los Angeles County Department of Public Health Los Angeles; 2016.
3. Proctor EK, Landsverk J, Aarons GA, *et al*. Implementation research in mental health services: An emerging science with conceptual, methodological, and training challenges. *Administration and Policy in Mental Health and Mental Health Services Research* 2009; 36(1): 24–34.
4. Aarons GA, Hurlburt M, Horwitz SM. Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Administration and Policy in Mental Health and Mental Health Services Research*. 2011; 38(1):4–23.
5. Straussner SLA. *Ethnocultural factors in substance abuse treatment.* Guilford Press New York City; 2012.
6. Novins DK, Aarons GA, Conti SG, *et al*. Use of the evidence base in substance abuse treatment programs for American Indians and Alaska natives: pursuing quality in the crucible of practice and policy. *Implementation Science* 2011; 6(1): 63.
7. Evidence Based Medicine Working Group. Evidence based medicine: a new approach to teaching the practice of medicine. *The Journal of the American Medical Association* 1992; 268: 2420–2425.
8. Greenhalgh T, Howick J, Maskrey N. Evidence based medicine: a movement in crisis? *British Medical Journal* 2014; 348: g3725.
9. Cabassa LJ, Baumann AA. A two-way street: Bridging implementation science and cultural adaptations of mental health treatments. *Implementation Science.* 2013; 8(1): 90.
10. Substance Abuse and Mental Health Services Administration [SAMHSA]. SAMHSA's national registry of evidence-based programs and practices. 2010; http://www.nrepp.samhsa.gov/. Accessed May 4, 2010.
11. Melas CD, Zampetakis LA, Dimopoulou A, *et al*. Evaluating the properties of the Evidence-Based Practice Attitude Scale (EBPAS) in health care. *Psychological Assessment* 2012; 24(4):867–76.
12. Pignotti M, Thyer BA. Use of novel unsupported and empirically supported therapies by licensed clinical social workers: An exploratory study. *Social Work Research.* 2009;33(1):5–17.

13. Gioia D. Using an organizational change model to qualitatively understand practitioner adoption of evidence-based practice in community mental health. *Best Practices in Mental Health: An International Journal* 2007;3(1):1–15.
14. Anderson JM. National Institutes of Health, Tribal Health Research Office Director's Announcement. 2017.
15. Moore LA, Aarons GA, Davis JH, *et al*. How do providers serving American Indians and Alaska Natives with substance abuse problems define evidence-based treatment? *Psychological Services.* 2015;12(2):92–100.
16. Novins DK. R01DA022239 Evidence-Based Practices And Substance Abuse Treatment For Native Americans.
17. Rieckmann T, Moore LA, Croy CD, *et al*. A national study of American Indian and Alaska Native substance abuse treatment: provider and program characteristics. *Journal of Substance Abuse Treatment.* 2016; 68:46–56.
18. Novins DK, Moore LA, Beals J, *et al*. A framework for conducting a national study of substance abuse treatment programs serving American Indian and Alaska Native communities. *The American Journal of Drug and Alcohol Abuse.* 2012; 38(5): 518–22.
19. Aarons GA, Ehrhart MG, Torres EM, *et al*. Validation of the Implementation Leadership Scale (ILS) in substance use disorder treatment organizations. *Journal of Substance Abuse Treatment.* 2016;68:31–35.
20. Aarons GA. Mental health provider attitudes toward adoption of evidence-based practice: The Evidence-Based Practice Attitude Scale (EBPAS). *Mental Health Services Research.* 2004;6(2):61–74.
21. Aarons GA, Glisson C, Hoagwood K, *et al*. Psychometric properties and United States national norms of the Evidence-Based Practice Attitude Scale (EBPAS). *Psychological Assessment* 2010;22(2):356–365.
22. Aarons GA, McDonald EJ, Sheehan AK, *et al*. Confirmatory factor analysis of the evidence-based practice attitude scale (EBPAS) in a geographically diverse sample of community mental health providers. *Administration and Policy in Mental Health and Mental Health Services Research* 2007; 34: 465–469.
23. Henggeler SW, Chapman JE, Rowland MD, *et al*. Statewide adoption and initial implementation of contingency management for substance abusing adolescents. *Journal of Consulting and Clinical Psychology* 2008; 76(4): 556–567.
24. Saldana L, Chapman JE, Henggeler SW, *et al*. The organizational readiness for change scale in adolescent programs: Criterion validity. *Journal of Substance Abuse Treatment* 2007; 33(2): 159–169.
25. Guerrero EG, He A, Kim A, Aarons GA. Organizational Implementation of Evidence-Based Substance Abuse Treatment in Racial and Ethnic Minority Communities. *Administration and Policy in Mental Health and Mental Health Services Research* 2014; 41(6):737–749.
26. DiMeo MA, Moore GK, Lichtenstein C. Relationship of evidence-based practice and treatments: A survey of community mental health providers. *Journal of Community Psychology* 2012; 40(3): 341–357.
27. APA Presidential Task Force on Evidence-Based Practice. Evidence-Based Practice in Psychology. *American Psychologist* 2006; 61(4): 271–285.
28. Whaley AL, Davis KE. Cultural competence and evidence-based practice in mental health services: A complementary perspective. *American Psychologist* 2007; 62(6): 563–574.
29. Hoagwood K, Burns BJ, Kiser L, *et al*. Evidence-based practice in child and adolescent mental health services. *Psychiatric Services* 2001; 52(9): 1179–1189.
30. Hoagwood K, Burns BJ, Kiser L, *et al*. Evidence-based practice in child and adolescent mental health services. *Psychiatric Services* 2001; 52(9): 1179–1189.
31. Biesta G. Why "what works" won't work: Evidence-based practice and the democratic deficit in educational research. *Educational theory* 2007; 57(1): 1–22.
32. Aarons GA, Ehrhart MG, Farahnak LR, *et al*. Aligning leadership across systems and organizations to develop a strategic climate for evidence-based practice implementation. *Annual Review of Public Health,.* 2014; 35: 255–274.
33. Reding ME, Chorpita BF, Lau AS, *et al*. Providers' attitudes toward evidence-based practices: is it just about providers, or do practices matter, too? *Administration and Policy in Mental Health and Mental Health Services Research* 2014; 41(6): 767–776.
34. Stewart RES, S W, Chambless DL. A qualitative investigation of practicing psychologists' attitudes toward research-informed practice: Implications for dissemination strategies. . *Professional Psychology, Research and Practice* 2012; 43(2): 100.
35. Institute of Medicine [IOM]. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC: National Academy Press; 2001.
36. APA. Report of the 2005 Presidential Task Force on evidence-based practice. 2005: 1–28.