

Indigenous Traditional Knowledge and Substance Abuse Treatment Outcomes: The Problem of Efficacy Evaluation

Joseph P. Gone, Ph.D.

Department of Psychology, University of Michigan, Ann Arbor, MI, USA

Background: In the field of substance abuse treatment, American Indian and Alaska Native (AI/AN) communities have routinely incorporated ceremonial practices as one important component in the promotion of recovery and healing. The beneficial effects of such practices are frequently described as plainly apparent by community-based advocates, providers, and professionals alike. In the present era of evidence-based substance abuse intervention, however, indigenous integration of such practices raises questions pertaining to the systematic evaluation of treatment efficacy.

Objectives: The focus of this article is outcome evaluation. Although intervention outcome researchers recognize the randomized controlled trial as the “gold standard” against which claims of treatment efficacy are measured, AI/AN efficacy assertions grounded in *indigenous traditional knowledge* (ITK) reflect different concerns that have emerged in non-Western historical contexts. The interface between scientific and indigenous “ways of knowing” is explored here relative to efficacy claims about substance abuse treatment.

Methods: Distinguishing features of both scientific knowing and ITK are summarized and compared.

Results: ITK has been described as *personal* and *experiential*, reflecting the primacy of autonomous individual knowing. In contrast, intervention scientists are skeptical of personal inference as a basis for efficacy evaluation. The evident divergence between these epistemic paradigms can result in potentially contradictory claims. **Conclusion:** Proper appraisal of the status and relevance of ITK for determining treatment efficacy requires further exploration of these marginalized approaches to knowledge. **Scientific Significance:** Intervention scientists who work in AI/AN communities should remain open to the legitimacy and role of ITKs in investigations of substance abuse treatment.

Keywords: American Indians, substance abuse treatment, traditional knowledge, therapeutic efficacy

As a clinical psychologist by training, a community psychologist by inclination, and a citizen of the Gros Ventre tribal nation of Montana, I harbor longstanding professional interests at the intersection of culture and wellness in Native North America. In 2009, I partnered with the staff of a substance abuse treatment program on the Blackfeet reservation in Montana. The goal of this collaboration was to design an alternative treatment approach grounded in Blackfeet (*Pikuni*) culture and tradition (1). On one occasion, the program director and I approached the membership of the Crazy Dog Society, a group of traditionalists committed to revitalizing the “old Blackfeet religion,” in hopes of obtaining guidance for the project. Perhaps 3 hours into their ceremonial gathering, I was invited to approach the society leader and make our pitch. I conveyed that we were developing a treatment for substance abuse problems built on Blackfeet tradition, that the society’s commitments to cultural revitalization appeared to overlap with our interests, and that we hoped they would join us to design and implement the intervention. I noted that one important component of our efforts was not just to implement the alternative treatment, but to evaluate it as well. I explained that evaluation was necessary because researchers did not yet know whether Native cultural traditions could remedy substance abuse problems. At this, the gathering erupted in laughter. Once the guffaws had subsided, the society leader explained that “everyone in this circle is living testimony to the power of these traditions to effect recovery from substance abuse.” In this article, I consider the possibility that cross-cultural breakdowns of this sort index substantive differences in intelligibility between indigenous and scientific “ways of knowing.” Given the increasing community reliance on indigenous traditional practices as therapeutic interventions for Native substance abuse, the question of *epistemic divergence* warrants careful consideration.

THE SALIENCE OF INDIGENOUS TRADITION

Substance abuse treatment in American Indian and Alaska Native (AI/AN) communities is characterized by two

important facts. First, the number of controlled treatment outcome studies undertaken with AI/AN samples is vanishingly small (2) (for recent examples, see 3, 4). Thus, intervention scientists must acknowledge that the efficacy of professional substance abuse treatment for AI/ANs remains unknown. Second, substance abuse treatment in many AI/AN communities is routinely understood by locals to necessitate a reclamation of indigenous cultural identities, orientations, and practices as a critical component of effective intervention (5–10), sometimes expressed through local assertions that “our culture is our treatment” (1). The conduct of cultural integration in indigenous treatment settings is not the subject of this article, however; rather, I am concerned here with *assessments of efficacy* about the interventions that result. That is, more so than for mainstream treatments, traditional approaches to remedying substance abuse are frequently celebrated by indigenous service providers, program advocates, and professional clinicians as (1) self-evident in terms of their therapeutic benefit and (2) off-limits to formal scientific evaluation. Thus, for these individuals, an identifiable epistemological commitment is apparent, namely that science is neither necessary nor appropriate as an arbiter of knowledge about substance abuse treatment efficacy. It is important to note, of course, that not all Native people dismiss the importance of scientific inquiry for addressing pressing behavioral health questions. The numbers that do, however, are anecdotally striking, especially when traditional practices are involved. Finally, this commitment is not new: so prevalent is the “culture as treatment” claim within indigenous communities – often with specific reference to culturally integrative substance abuse treatment – that it has occasioned critique in the literature for more than two decades (11–13).

At least in part, this skepticism toward scientific knowing depends on the *kind of evidence* deemed necessary by culturally diverse constituencies for establishing therapeutic claims such as the assertion that participation in traditional practices can bring about (i.e., *effect* or *cause*) recovery from substance abuse problems in a reliable and observable manner. Although disagreements about evidentiary kinds need not rise to the level of differences in overarching epistemologies, there is good reason to believe that, in the domain of AI/AN substance abuse treatment, epistemic divergences may well be in play. Within tribal communities in North America, the term *indigenous traditional knowledge* (ITK) has come to represent distinguishable forms of exploring, explaining, and understanding the world that have been employed by Native peoples for millennia. ITK has been most clearly articulated for environmental–ecological phenomena, but it presumably extends to any interface with Western knowledge production, including health and health services research (14,15). Specifically, ITK is said to encompass both particular truth claims about the world as well as particular logics for arriving at these. Moreover, these knowledge traditions – along with indigenous cultural practices and lifeways more generally – were forcefully subjugated through a variety of institutional practices

associated with European colonization, often in the name of science. For this reason, many of these traditions have been lost. As a result, the remnants of ITK are zealously protected by their local proponents today; consequentially, they are not especially well studied or documented.

THE PRIMACY OF PERSONAL EXPERIENCE

In light of indigenous claims that science is superfluous for assessing intervention efficacy, it is important to consider the authority of *personal or first-hand experience* in indigenous ways of knowing. Mohawk educator Marlene Brant Castellano has summarized several attributes of ITK that have achieved a “measure of consensus” among proponents of these forms of knowledge (16, p. 25). Specifically, she has characterized ITK as *personal, oral, experiential, holistic, and narratively conveyed*. By emphasizing that ITK is personal and experiential, for example, Castellano explained that for indigenous communities knowing does not conventionally involve general and abstract truth claims about the world (Deloria concurred on this point (17)). Instead, indigenous forms of knowing are said to consist of deeply contextualized and “felt” understandings grounded in holistic experience that others evaluate in terms of the credibility and trustworthiness of the individual knower. Collective analysis and consensus, rather than direct contradiction and argument, characterize communal consideration of knowledge claims. In fact, it is the inviolate autonomy of the individual knower that serves as the point of departure for any assessment of truths that ultimately become valued and accepted when they resonate with the personal experience of others. In sum, no person is positioned to arbitrate the significance of anyone else’s personal experience; rather, the knowledge based on such experiences is adopted and promoted by others as legitimate (or not) without infringing on the autonomy of the original knower through, say, directive and intrusive attempts to argue the point or change another’s mind.

These principles are echoed in anthropologist Regna Darnell’s summary of 39 postulates comprising a Cree cultural model of interaction. She observed that “eye-witness accounts based on personal experience are privileged over the theoretical, abstract, and second-hand.” She proceeded to explain that “abstraction not tied to first-hand experience is deemed superficial and unimportant” (18, p. 95). Moreover, according to Darnell, Cree individuals are expected to formulate their own interpretations of the narrated experiences of others, which she characterized as “a question of experience being valued over words, or the words being valued as constellations of experience” (p. 98–99). Thus, again, within this indigenous frame of reference personal experience can be recognized as an important – perhaps the most important – arbiter of knowledge claims. For substance abuse researchers who have partnered with AI/AN communities, this epistemic formation should be readily recognizable. It is visible in dismissals by locals of the validity of “book knowledge,” or in deferrals to elders whose authority stems from a greater cache of lifelong personal experience, or in preferences for qualitative data

analysis that might better preserve experiential narrative accounts, or, indeed, in laughter at the seeming absurdity of a scientific researcher who, in a gathering of traditionalists comprised of recovered substance abusers, does “not yet know” whether Native cultural traditions can remedy substance abuse problems. It is thus on the basis of a locally salient association between the participation of many former AI/AN substance abusers in indigenous traditional practices and their subsequent recovery – as readily represented through first-person narratives – that the culture-as-treatment claim rests (19,20).

THE PROBLEM OF EPISTEMIC DIVERGENCE

In contrast, the rationale supporting the adoption of scientific methods for the evaluation of substance abuse treatments depends on fundamentally different premises. According to intervention scientists, casual inferences about causal relationships – especially between interventions and outcomes in the complex flow of experience for substance abusing clients who participate in treatment activities – are hopelessly confounded with the usual threats to internal validity that yield mistaken conclusions about efficacy. The formidable obstacles here are the demonstrated biases and limitations of human cognition that render everyday causal reasoning subject to inferential error (21). The scientific solution is thus to augment and extend the powers of human rationality using the methodological tools of the experiment as a cognitive prosthesis of sorts to enable reliable causal inference for complex problems such as the evaluation of treatment outcomes. Moreover, an important attribute of scientific experimentation in treatment outcome studies is that its advocates need not believe in any particular theory or mechanism of change. In principle, once the specific claims to be tested are thoroughly understood – and this is a crucial first step in defining efficacy (22) – the method may be applied to a wide variety of “treatments” on virtually any measurable outcomes irrespective of experimenter commitment to the intervention proper (13). In sum, as a concrete tool for furthering knowledge, the scientific experiment seems widely adaptable even to nonconventional forms of intervention.

And yet, in considering two kinds of knowing – scientific experimentation and ITK – it is time to acknowledge a potential problem, namely that these diverse approaches can lead to direct contradictions between competing knowledge claims. On the basis of an extensive psychological literature on cognitive heuristics and biases, scientific knowers express deep skepticism that it is possible – even for AI/AN community members – to reliably infer that an intervention is efficacious for remedying substance abuse in the absence of controlled evaluation. In short, adoption of scientifically rigorous efficacy tests is premised on the notion that inferences based on personal experience are *utterly inadequate* for discerning cause-and-effect relationships between interventions and outcomes. In contrast, on the basis of traditional reverence for deeply contextualized and holistic personal experience, many AI/ANs

express incredulity that research expertise and scarce resources need ever be devoted to scientific evaluation of purported interventions – including traditional practices – for remedying substance abuse. In short, community expression of ITK is premised on the notion that inferences based on personal experience may be *all that recommends* a given treatment in terms of its purported efficacy. Clearly, the potential for contradiction between these knowledge systems as applied to treatment efficacy in substance abuse intervention fundamentally depends on radically different appraisals of the value of personal experience. What then are the prospects for resolution or rapprochement in the face of such evident epistemic divergence?

THE PROSPECTS FOR EPISTEMIC RAPPROCHEMENT

There are at least four possibilities for negotiating the epistemic divergence between intervention science and ITK relative to inferences about efficacy for substance abuse treatment: solipsism, deference to science, deference to ITK, and pluralism. The first possibility for negotiating this epistemic divergence is solipsism. Solipsism is the view that each knowledge system is so deeply structured by its foundational assumptions and interests (i.e., “we have our truths, while they have theirs”) that meaningful dialogue between them is not really productive (or even possible). On this view, no common ground for discussion can be identified, and divergent ways of knowing are adopted and deployed largely as matters of epistemic faith and familiarity. Presumably, there are important ways in which both yield useful knowledge, but even the criteria for epistemological utility are distinct and irreconcilable. Clearly, with regard to potential rapprochement between divergent forms of efficacy inference, solipsism offers none.

The second possibility for negotiating this epistemic divergence is to concede that scientific knowing is in fact superior to ITK for this kind of inferential task. In other words, AI/ANs could simply concede that personal experience is inadequate for assessments of psychosocial treatment efficacy and instead embrace scientific knowing as a better means for addressing these kinds of questions in these kinds of contexts (i.e., ones so deeply structured by the commitments of modernity). Of course, it is important to acknowledge that this solution remains vexed by the historical subjugation of ITK, which has been thoroughly dismissed and even denigrated throughout the colonial encounter on the grounds of the presumed superiority of scientific inquiry as the only authoritative means to knowledge that matters. As a result, these competing knowledge claims do not meet on equal terms, but instead in ideologically contested encounters rife with power asymmetries. Such concessions are thus politically sensitive. Nevertheless, the fact that colonial subjugation of ITK has occurred in the name of science does not warrant the (obviously selective) repudiation of the benefits of science.

The third possibility for negotiating this epistemic divergence is to concede that ITK is in fact superior to

scientific knowing for this kind of inferential task. I am unaware of any scholarly arguments on behalf of this position, but I presume that such an argument would partake liberally of extant critiques of scientific knowing. For example, consider the recent demonstration by Ioaniddis with reference to the medical literature that “most claimed research findings are false,” which he attributed in part to small samples (23, p. 0696). Indeed, in his review of 49 highly cited intervention studies in medicine, he found that positive outcomes from randomized controlled trials were more likely upon replication to be attenuated or overturned if original samples were small. The median sample size of these vulnerable studies was 624 subjects (range = 403–1500) (24). Thus, the prospects for a fair test of intervention outcomes in AI/AN communities would seem daunting indeed. Juxtaposing these critiques with even deeper skepticism about the validity of positivist applications of “natural science” methodologies to human affairs (13), one might well conclude that confidence and progress in intervention science is vastly overrated, resulting (by default) in epistemic reinforcement of the primacy of personal experience (as in ITK).

The final possibility for negotiating this epistemic divergence is pluralism. Like solipsism, pluralism acknowledges striking differences in foundational assumptions and interests between these knowledge systems that render them irreconcilable at certain levels. Unlike solipsism, however, pluralism recognizes the potential for valuable contributions from each approach and makes room for coexistence and dialogue (without necessarily expecting resolution). In this vein, proponents of ITK remain extremely reluctant to acknowledge direct contradiction between indigenous and Western – especially scientific – ways of knowing. For example, with regard to health matters, Durie has asserted that “indigenous knowledge cannot be verified by scientific criteria nor can science be adequately assessed according to the tenets of indigenous knowledge,” arguing that contestations over the “relative merits” of these knowledge systems are a distraction from opportunities to create new knowledge at their interface (15, p. 1138). In the present instance, it would seem that Durie’s assertion requires some final speculation as to what ultimate shape this pluralistic interface might take.

THE CONTOURS OF EPISTEMIC PLURALISM

The precise means by which scientific knowing and ITK might find rapprochement relative to efficacy claims for substance abuse treatment has yet to be fully explored. This is so because AI/ANs – given their commitments to protecting endangered forms of indigenous knowing – have thus far declined to systematically articulate the epistemological parameters surrounding causal reasoning beyond general statements of confidence in ITK and lived valorizations of personal experience. In the absence of clear explications of an ITK alternative, scientific knowing becomes the default epistemic position for researchers investigating these matters. Perhaps this is not a problem

(13). More specifically, the possibility that ITK is not suited to questions of causal inference in the evaluation of psychosocial interventions should not be especially surprising given that such concerns emerged from a Western interest in instrumental rationality without elaborate precedent in indigenous North America. Thus, the inapplicability of ITK on this front need not undermine its validity in other relevant spheres of experience or inquiry, including additional facets of intervention-focused investigation beyond questions of causal efficacy proper (e.g., inclusion of more broadly defined outcome criteria (6)). Moreover, on this side of a brutal colonial encounter, the fact the ITK has survived these past centuries suggests that AI/ANs may overestimate its fragility in the face of modernity. Finally, it is only fair to acknowledge that all current “ways of knowing” – whether “Western” or indigenous – have evolved through cross-cultural contact and interaction for centuries. As a consequence, neither scientific knowing nor ITK likely exists in pure form as a bounded system of knowledge; rather, it seems probable that each has incorporated aspects of the other in disjointed and hybrid fashion over time.

Of course, beyond this *provisional* pluralistic rapprochement I optimistically imagine a future in which the contours of epistemic pluralism are more fully elaborated. Such elaboration will depend on robust appraisals of the contribution of ITK to inferences of intervention efficacy vis-à-vis scientific knowing. My expectation of this exercise would be that the apparent advantage of scientific evaluation for authorizing efficacy inferences will be seen as fundamentally dependent on the particular construal of the endeavor in the first place. That is, once the question to be answered has been formulated in terms of the *nomothetic assessment of mechanistic causal processes* that reliably effect narrowly targeted, *statistically significant outcomes* that differ between *probabilistically equivalent comparison groups*, then the superiority of scientific knowing has already been conceded. In contrast, a more fruitful and illuminating epistemic comparison will require “backing out” of such technically refined problem formulations to recognizable common ground. My suspicion is that the most productive dialogue between scientific knowing and ITK will begin with the stance of the individual knower. For ITK, this will invoke indigenous ideas of personal autonomy, in which individual intentionality (i.e., desire, will, or wish (25)) is seen as the most basic and important constituent of the cosmos. As such, the relative significance of *agentive intentionality* (vs *impersonal mechanism*) as an active influence in the world will become overwhelmingly apparent, motivating an emphasis on nongeneralizable particularities in individual experience that privilege idiographic over nomothetic truth statements. But all this remains quite speculative. I am thus hopeful that AI/AN communities – under ethically appropriate conditions – will come to value open and respectful dialogues addressed to articulating distinctive forms of ITK on behalf of indigenous contributions to cross-cultural understanding around the globe.

ACKNOWLEDGMENTS

I am grateful to the following individuals for commenting on an early version of this article: Michael J. Chandler, Regna Darnell, Kathy Etz, Laurence J. Kirmayer, Scott R. Lyons, Gregory A. Miller, Erica Prussing, Joshua D. Sparrow, Brent D. Slife, Kamilla L. Venner, Dennis C. Wendt, and James B. Waldram.

Declaration of Interest

The author reports no conflicts of interest. The authors alone are responsible for the content and writing of this article.

REFERENCES

- Gone JP, Calf Looking PE. American Indian culture as substance abuse treatment: Pursuing evidence for a local intervention. *J Psychoact Drugs* 2011; 43(4):291–296.
- Gone JP, Trimble JE. American Indian and Alaska Native mental health: Diverse perspectives on enduring disparities. *Ann Rev Clin Psych*. 2012; 8:131–160.
- O'Malley SS, Robin RW, Levenson AL, GreyWolf I, Chance LE, Hodgkinson CA, Romano D, Robinson J, Meandzija B, Stillner V, Wu R, Goldman D. Naltrexone alone and with sertraline for the treatment of alcohol dependence in Alaska Natives and non-Natives residing in rural settings: A randomized controlled trial. *Alcohol Clin Exp Res* 2008; 32(7):1271–1283.
- Villanueva M, Tonigan JS, Miller WR. Response of Native American clients to three treatment methods for alcohol dependence. *J Ethn Subst Abuse* 2007; 6(2):41–48.
- French LA. Alcohol and other drug addictions among Native Americans: The movement toward tribal-centric treatment programs. *Alcohol Treat Q* 2004; 22(1):81–91.
- Gone JP. A community-based treatment for Native American historical trauma: Prospects for evidence-based practice. *J Consult Clin Psychol* 2009; 77(4):751–762.
- Gone JP. The red road to wellness: Cultural reclamation in a Native First Nations community treatment center. *Am J Community Psychol* 2011; 47(1–2):187–202.
- Goodkind JR, Ross-Toledo K, John S, Hall JL, Ross L, Freeland L, Coletta E, Becenti-Fundark T. Rebuilding trust: A community, multiagency, state, and university partnership to improve behavioral health care for American Indian youth, their families, and communities. *J Community Psychol* 2011; 39(4):452–477. Last accessed on July 17, 2011.
- Novins DK, Aarons GA, Conti SG, Dahlke D, Daw R, Fickenscher A, Fleming C, Love C, Masis K, Spicer P. Use of the evidence base in substance abuse treatment programs for American Indians and Alaska Natives: Pursuing quality in the crucible of policy and practice. *Implement Sci* 2011; 6–63. Available at <http://www.implementationscience.com/content/6/1/63>. Last accessed on August 10, 2011.
- Echo-Hawk H, Erickson JS, Naquin V, Ganju V, McCutchan-Tupua K, Benavente B, King JJ, Alonzo D. *The Compendium of Behavioral Health Best Practices for American Indian, Alaska Native, and Pacific Islander Indigenous Populations: A Description of Selected Best Practices and Cultural Analysis of Local Evidence Building*. Portland, OR: First Nations Behavioral Health Association, 2011.
- Brady M. Culture in treatment, culture as treatment: A critical appraisal of developments in addictions programs for indigenous North Americans and Australians. *Soc Sci Med* 1995; 41(11):1487–1498.
- Weibel-Orlando J. Hooked on healing: Anthropologists, alcohol, and intervention. *Hum Organ* 1989; 48(2):148–155.
- Gone JP. Is psychological science a-cultural? *Cult Divers Ethn Minor Psychol* 2011; 17(3):234–242.
- Smylie J, Martin CM, Kaplan-Myrth N, Steele L, Tait C, Hogg W. Knowledge translation and indigenous knowledge. *Int J Circumpolar Health* 2003; 63(Suppl. 2):139–143.
- Durie M. Understanding health and illness: Research at the interface between science and indigenous knowledge. *Int J Epidemiol*. 2004; 33:1138–1143.
- Castellano MB. Updating aboriginal traditions of knowledge. In *Indigenous Knowledges in Global Contexts: Multiple Readings of Our World*. Dei GJS, Hall BL, Rosenberg DG, eds. Toronto: University of Toronto Press, 2000; 21–36.
- Deloria V. Power and place equal personality. In *Power and Place: Indian Education in America*. Deloria V, Wildcat, DR, eds. Golden, CO: American Indian Graduate Center/Fulcrum Resources, 2001; 21–28.
- Darnell R. Thirty-nine postulates of Plains Cree conversation, “power,” and interaction: A culture-specific model. In *Papers of the Twenty-Second Algonquian Conference*. Cowan W, ed. Ottawa: Carleton University Press, 1991; 89–102.
- Spicer P. Culture and the restoration of self among former American Indian drinkers. *Soc Sci Med*. 2001; 53:227–240.
- Torres Stone RA, Whitbeck LA, Chen X, Johnson K, Olson DM. Traditional practices, traditional spirituality, and alcohol cessation among American Indians. *J Stud Alcohol*. 2006; 67:236–244.
- Kahneman D, Slovic P, Tversky A, eds. *Judgment Under Uncertainty: Heuristics and Biases*. Cambridge: Cambridge University Press, 1982.
- Waldram JB. The efficacy of traditional medicine: Current theoretical and methodological issues. *Med Anthropol Q* 2000; 14(4):603–625.
- Ioaniddis JPA. Why most published research findings are false. *PLoS Med* 2005; 2(8):696–701.
- Ioaniddis JPA. Contradicted and initially stronger effects in highly cited clinical research. *J Am Med Assoc* 2005; 294(2):218–228.
- Gone JP. “So I can be like a Whiteman”: The cultural psychology of space and place in American Indian mental health. *Cult Psychol* 2008; 14(3):369–399.