HHS Public Access

Author manuscript

J Subst Abuse Treat. Author manuscript; available in PMC 2019 July 01.

Published in final edited form as:

J Subst Abuse Treat. 2018 July ; 90: 57–63. doi:10.1016/j.jsat.2018.04.014.

Focus Groups to Increase the Cultural Acceptability of a Contingency Management Intervention for American Indian and Alaska Native Communities

Katherine A. Hirchak, MS[1,2], **Emily Leickly, BA**[3], **Jalene Herron, BA**[1], **Jennifer Shaw, PhD**[4], **Jordan Skalisky, BA**[1,2], **Lisa G. Dirks, MLIS, MAdm**[4], **Jaedon P. Avey, PhD**[4], **Sterling McPherson, PhD**[2,5,6], **Jenny Nepom, BS, BA**, **Dennis Donovan, PhD**[7,8], **Dedra Buchwald, MD**[1,5], and **Michael G. McDonell, PhD**[1,2,5] **the HONOR Study Team**

[1]Initiative for Research and Education to Advance Community Health, Washington State University, Spokane WA, USA

[2]Program of Excellence in Addictions Research, Washington State University, Spokane WA, USA

[3]Department of Psychology, Portland State University, Portland, OR, USA

[4]Southcentral Foundation, Anchorage AK, USA

[5]Department of Medical Education and Clinical Sciences, Washington State University Elson S. Floyd College of Medicine, Spokane WA, USA

[6]Providence Medical Research Center, Providence Health Care, Spokane WA, USA

[7]Alcohol and Drug Abuse Institute, University of Washington, Seattle, WA, USA

[8]Department of Psychiatry and Behavioral Sciences, University of Washington, Seattle, WA, USA

Abstract

Introduction—Many American Indian and Alaska Native (AI/AN) people seek evidence-based, cost-effective, and culturally acceptable solutions for treating alcohol use disorders. Contingency management (CM) is a feasible, low-cost approach to treating alcohol use disorders that uses "reinforcers" to promote and support alcohol abstinence. CM has not been evaluated among AI/AN communities. This study explored the cultural acceptability of CM and adapted it for use in diverse AI/AN communities.

Methods—We conducted a total of nine focus groups in three AI/AN communities: a rural reservation, an urban health clinic, and a large Alaska Native healthcare system. Respondents included adults in recovery, adults with current drinking problems, service providers, and other

Correspondence: Michael G. McDonell, Ph.D., Elson S Floyd College of Medicine, PO Box 1495, Washington State University, Spokane, WA 99210-1495, Phone: 509 368-6967, mmcdonell@wsu.edu.

Declaration of interest: The authors report no conflicts of interest. The views expressed do not necessarily represent the views of any participating Tribe or partnering organization. The funding source was not involved in the preparation of the article.

interested community members (n=61). Focus group questions centered on the cultural appropriateness of "reinforcers" used to incentivize abstinence and the cultural acceptability of the intervention. Focus groups were audio-recorded, transcribed, and coded independently by two study team members using both *a priori* and emergent codes. We then analyzed coded data.

Results—Across all three locations, focus group participants described the importance of providing both culturally specific (e.g., bead work and cultural art work supplies), as well as practical (e.g., gas cards and bus passes) reinforcers. Focus group participants underscored the importance of providing reinforcers for the children and family of intervention participants to assist with reengaging with family and rebuilding trust that may have been damaged during alcohol use. Respondents indicated that they believed CM was in alignment with AI/AN cultural values. There was consensus that Elders or a well-respected community member implementing this intervention would enhance participation. Focus group participants emphasized use of the local AI/AN language, in addition to the inclusion of appropriate cultural symbols and imagery in the delivery of the intervention.

Conclusions—A CM intervention for alcohol use disorders should be in alignment with existing cultural and community practices such as alcohol abstinence, is more likely to be successful when Elders and community leaders are champions of the intervention, the intervention is compatible with counseling or treatment methodologies, and the intervention provides rewards that are both culturally specific and practical.

Keywords

American Indian/Alaska Natives; contingency management; alcohol use treatment; treatment adaptation

1. Introduction

1.1 Background

Although American Indian/Alaska Native (AI/AN) people have some of the highest rates of alcohol abstinence in the nation (National Institue on Alcohol Abuse and Alcoholism, 2006; Cunningham, Solomon, & Muramoto, 2016; Substance Abuse and Mental Health Services Adminstration, 2010), alcohol is also associated with many of the current health disparities experienced by AI/AN communities. Certain social determinants of health, such as unemployment, incarceration, violence, suicide and homelessness, are more prevalent in AI/AN communities than in the general US population (Gone & Trimble, 2012; Grant, 2009; Naimi, 2008; Shore, 2006; Indian Health Service, 2014). In addition, AI/AN communities experience higher alcohol-related mortality, as well as medical and behavioral morbidity, compared to the overall U.S. population (Indian Health Service, 2014). AI/AN communities also have a higher prevalence of liver disease, diabetes and depression. Historical and political factors including forced relocation, boarding schools, lack of funding, and inadequate healthcare services further compound health inequities (Gone & Trimble, 2012; Whitesell, Beals, Big Crow, Mitchell, & Novins, 2012).

Despite the need for effective alcohol use disorder (AUD) treatments for AI/AN people, a disparity in the availability and retention of treatment remains (Dickerson et al., 2011; Gone

& Trimble, 2012). AI/AN adults are less likely than non-AI/AN adults to complete alcohol treatment (Evans, 2006), which may be due in part to the lack of culturally grounded treatment options available to AI/AN people (Gone & Trimble, 2012). The Tribal Law and Order Act of 2010 called for more research on treatment for AUDs and implementation of evidence-based care in AI/AN communities (TAP, 2011). Policies of sovereignty and self-determination have also led AI/AN communities to develop health research with, for, and by AI/AN people. In other efforts, AI/AN organizations have established their own research enterprises, such as the Southcentral Foundation in Alaska, and have partnered with university-based researchers to develop, test, and implement evidence-based SUD treatments that are effective, culturally appropriate, and sustainable (Boyd-Ball, 2003; Gossage et al., 2003; Naquin, 2008).

1.2 Substance misuse interventions for American Indian/Alaska Native people

Few interventions for AUDs have been rigorously examined among AI/AN people (Gone & Trimble, 2012). One recent study is adapting and evaluating the effectiveness of SUD interventions in AI/AN communities with promising results (Venner, 2016). Only two randomized controlled trials (RCTs) of alcohol and drug disorder interventions among AI/AN adults have been published (Greenfield, 2012; O'Malley, 2008; Woodall, 2007). Although both studies (O'Malley, 2008; Woodall, 2007) found evidence for effectiveness of the tested interventions, only one incorporated cultural values and practices (Woodall, 2007) and neither study assessed cultural acceptability of the interventions.

1.3 Cultural adaptation of substance misuse interventions

The importance of adapting and assessing interventions for cultural acceptability has become increasingly evident and practiced in health science research (Allen et al., 2006; Barrera, 2013; Boyd-Ball, 2003; Lau, 2006; Naquin, 2008). Cultural adaptation of an intervention includes two components: efficacy and acceptability (Lau, 2006). Efficacy adaptations are needed when evidence suggests an intervention is less effective for a specific cultural group, relative to the original target population. In this case modifications to the "active ingredients" (e.g., specific techniques or core principles) of an intervention may address cultural factors that influence efficacy (Barrera, 2013; Lau, 2006).

Adaptations related to cultural acceptability on the other hand, involve modifying "non-active treatment ingredients" of the intervention, such as the style or language of the intervention, the person delivering the intervention, or the treatment setting. Cultural acceptance is defined as the extent to which a treatment is relevant and engaging among a cultural group in which the intervention has not been previously implemented (Barrera, 2013; Etz, Arroyo, Crump, Rosa, & Scott, 2012; Lau, 2006). Effective interventions consider both acceptability and efficacy within the context of the specific population the intervention targets. Culturally unacceptable interventions are less likely utilized and therefore less likely to result in improved health outcomes. Not considering the cultural acceptability of an intervention results in low rates of recruitment and enrollment and high rates of attrition in AUD treatment studies (Beals et al., 2006).

1.4 Contingency management

Contingency management (CM) is an effective intervention for the treatment of substance use disorders (SUDs) (Dutra, et al., 2008; Roll, 2007). It is based primarily on the principle of operant conditioning. In CM, tangible positive reinforcers (for the remainder of the paper referred to simply as “reinforcers”), such as gift certificates or other desirable items (e.g., toiletries, household items, recreational items), are given to individuals each time they demonstrate alcohol or drug abstinence, typically measured using a urine drug or alcohol test (Lussier, 2006; Prendergast, 2006). Reinforcers can be modified to meet the preferences of participants or tailored to the intervention setting. Further, non-clinicians can deliver CM, a strength in under-resourced areas such as AI/AN communities, where trained addiction counselors are typically scarce.

CM is equally effective in groups as socially and culturally diverse as African American adults, White Americans, Brazilians, and Chinese populations (Barry, Sullivan, & Petry, 2009; Bride & Humble, 2008; Hser, 2011). Despite being an effective intervention for many populations, to our knowledge qualitative methods were not used to maximize the cultural acceptability of CM for the previously mentioned populations. Doing so might maximize the acceptability of CM for AI/AN communities and potentially increase engagement in the intervention.

Given the efficacy of CM among a wide-range of populations and settings, a community-university partnership identified CM as an intervention with potential for cultural adaptation to reduce alcohol use among AI/AN people with AUDs in several geographically and culturally diverse communities. The university-based research team engaged stakeholders in each community through interviews, informal conversations, and meetings between clinicians, service providers, researchers, community members and tribal leaders to determine the potential fit of CM at each site resulting in the implementation of the RCT in three AI/AN communities. The result was the Honor Our Native Ongoing Recovery (HONOR) Study. The HONOR Study includes two phases. Focus groups to inform the adaptation of the CM intervention followed by an RCT of the modified CM intervention in three AI/AN communities, as described in McDonell et al. (2016).

2. Methods

2.1 Participants and recruitment

Focus group recruitment included three research sites: an urban Indian health organization in the Pacific Northwest, a large tribal healthcare system in Alaska serving both rural and urban communities, and a rural reservation community in the Great Plains region. We conducted focus groups with 61 participants, including individuals with AUDs, treatment providers, and other community members knowledgeable or interested in the topic. We recruited participants through flyers posted in healthcare organizations, SUD treatment facilities, social service agencies, and by word-of-mouth and emails to providers. Eligibility criteria included being an adult (age 18+), an AI/AN community member in recovery or with an interest in discussing AUD treatment, or a healthcare provider and/or leader.

2.2 Data collection

We conducted nine one-hour focus groups across the three locations, ranging in size from four to thirteen participants. We convened one provider group, seven community groups, and one combined group. The AI/AN study staff at each site had training from the university research team in qualitative research methods prior to moderating the focus groups. A Community Advisory Board (CAB) was established with the primary focus to review the protocol for the randomized controlled trial in addition to guiding the focus group questions and processes. Members were community leaders, clinicians and service providers formed prior to study implementation. The CAB convened yearly and consisted of five members from across all three sites. We did not collect participant demographic information over concerns in protecting confidentiality even though the collection of such data is standard practice in qualitative research. Each participant received a $20 gift card.

Each group began with a brief PowerPoint presentation that provided information about CM, described the study, and presented a 2-minute video demonstrating study procedures. Next, the moderators asked participants for feedback on the study design and content, including eligibility criteria, recruitment strategies, and culturally appropriate and engaging items to use as reinforcers, as well as language for describing these items (Appendix A). Focus groups were audio recorded and transcribed verbatim.

2.3 Data analysis

The two lead authors conducted thematic coding of the de-identified focus group transcripts. These individuals independently read and coded each transcript using Qualitative Data Analysis Miner software (LITE v1.4.6; Provalis, 2014). They met to discuss an initial list of codes, then agreed upon a hierarchy of themes and sub-themes, which was used in coding each transcript. Theoretical saturation was achieved when no new themes emerged. Content was identified as a theme or sub-theme and data saturation achieved when it was discussed at least twice across focus groups or if participants discussed an idea for more than several minutes. This process was repeated until consensus was reached between the two coders (Johnson, 2004). We entered the coded text into an Excel database with frequencies of the overarching themes and sub-themes examined, along with differences across sites.

3. Results

3.1 Focus group data, overarching themes and sub-themes

The average focus group transcript page length was 17, with an average number of 7 focus group participants. We conducted five focus groups in the two urban areas and four focus groups in the rural reservation community. Table 1 summarizes the overarching themes. Overarching themes included: 1) CM Material and Experiential Reinforcers, 2) Cultural Considerations and Adaptions, 3) Community Environment, Recovery and Reinforcer Concerns, 4) Recruitment and 5) Historical Context and Research. Each theme had additional and corresponding sub-themes. For CM Material and Experiential Reinforcers sub-themes included: practical, work-related, self-care items, experiential-changing behaviors, and experiential-traditional. There were five sub-themes under Cultural

Considerations, including gifting, Elders, traditions, language and symbolism, in addition to the importance of cultural reinforcers.

Community Environment sub-themes included community re-entry, community effects of alcohol, repairing trust, and recognition/respect. Under the theme of Recovery and Reinforcer Concerns, there were three sub-themes: abstinence, reinforcers, and issues with gift cards. Recruitment sub-themes centered around word-of-mouth, social media, direct outreach, and advertising. Finally, the sub-themes for Historical Context and Research included historical trauma, mistrust, exploitation and unethical research, and healing. All the themes and sub-themes were endorsed across the three sites with the exception of one. Historical context and research was the only distinct theme, endorsed in Alaska and the rural reservation community.

3.2 CM material and experiential reinforcers

Two main themes emerged from the focus groups related to the type of reinforcers that might be provided as part of CM. The primary reinforcers were material and experiential (Table 2). Material reinforcers were tangible including practical items, work-related items, and self-care items. Participants generally agreed that all reinforcers should function to: 1) enhance daily living of individuals attempting to reduce alcohol consumption, 2) support self-care of these individuals, and 3) engage their families and the community. Popular practical reinforcers included transportation, such as gas vouchers and bus passes, groceries, diapers, tools, and work clothes. Focus group participants noted that individuals with AUDs often neglect self-care behaviors. Therefore, focus group participants suggested that reinforcers could also include clothes, manicures, pedicures, journals, and fragrances. The most useful reinforcers identified however, were gift cards to stores where the participants could choose items they needed.

The second overarching theme was experiential reinforcers to facilitate and support intervention participants in engaging in activities as an alternative to alcohol use. Experiential reinforcers centered around the point that the intervention should benefit not only the individual, but their family and children, and repair trust between family members that was damaged during alcohol use. Positive experiential reinforcers included a family dinner at a local restaurant, an outdoor activity, or a family entertainment opportunity, like going to the movies (Table 2). Other reinforcers mentioned were community events where families would attend, and traditional foods served in honor of those in recovery, framed participation certificates, daily affirmations, and mentoring. These reinforcers identified to build the participant’s self-esteem or to notify others that they are taking steps to become healthy members of the community. As illustrated by the quotes in Table 2, participants also highlighted that an important way to reinforce abstinence was through respecting and recognizing the study participant’s successes and healthy choices.

3.3 Cultural considerations and adaptations

Participants offered various suggestions for increasing the acceptability of CM in the participating communities (Table 3). Themes for cultural adaptations to the intervention included the importance of: 1) gifting as a cultural value and practice in AI/AN

communities, 2) reinforcing cultural engagement, and 3) incorporating intervention participants' AI/AN languages. Culturally, gifting is not simply about the gift but may be indicative of a deeper meaning of cultural connection and community. The focus groups in the rural reservation communities discussed at length the reinforcing effect of an honor song modeled after traditional songs to sing to intervention participants and those in recovery.

Suggestions that supported cultural engagement included beading supplies, beaded items such as wallets and barrettes, regalia, cedar bags, and hosting community events serving traditional foods. Elders were identified as important role models for those in recovery, underscored by the second quote in Table 3. Alaska focus group participants endorsed serving traditional foods such as moose meat, and using Athabascan, Yup'ik, Aleut, and other Alaska Native languages in the process of providing reinforcers to intervention participants. In the Alaska and the reservation communities, participants proposed that local language equivalents for "good job," replace "reinforcers" or "prizes," terms utilized in CM studies, to encourage recovery and cultural engagement. When using English, the Alaska focus group participants recommended referring to reinforcers as "recognitions" or "rewards," underscoring the potential of CM to foster a sense of self-respect and accomplishment among intervention participants.

3.4 Community environment and recovery and reinforcer concerns

In all focus groups, participants discussed the fit of CM in their respective community and the potential misuse of the reinforcers. When asked if the study communities would find CM enticing, participants in the rural reservation community agreed that rewarding people for abstinence is a prosocial behavior congruent with traditional values. As highlighted by the first two quotes in Table 4, participants suggested CM would be positive for those in the beginning stages of recovery but ultimately, abstinence and recovery are personal choices.

Gift cards were the most frequently recommended reinforcers across the three sites. Gift card incentives align with community practices regarding gift-giving. For example, money is appropriate compensation for the advice of Elders or community spiritual leaders, although participants noted that a cash gift might be offensive to some people. Participants in the Alaska focus groups mentioned the potential perception that reinforcers were bribes to abstain from alcohol use. A consistent major concern across sites was that intervention participants would sell the gift cards to friends and family and the cash used to purchase alcohol, drugs, and tobacco (Table 4).

Conversations about community context occurred more frequently in the rural and Alaska locations. Themes included challenges around recovery and the importance of being a contributing member of the community. The theme of *Community Reentry* (Table 5), refers to the potential negative family and community perceptions of individuals in recovery returning from residential programs or institutions. Though an opportunity for healing, alcohol interventions can be perceived as problematic due to the stigma associated with alcohol misuse. Discussions noted that in tight-knit tribal communities, it takes work to prove that you are serious about changing. Community members may be unsupportive of participants in the CM intervention if their alcohol misuse history is known. External factors may motivate changes in behavior, but ultimately abstinence is a personal decision.

Considering the perception that alcohol misuse is widespread in participating communities, changing drinking behaviors is extremely difficult both on the individual and at the environmental level (Table 5).

3.5 Recruitment

Focus groups also explored strategies for engaging community members in the CM intervention. Participants agreed that recruitment efforts should 1) include word-of-mouth, 2) social media, 3) direct outreach and 4) advertising. Elders or community leaders should spearhead recruitment and community outreach to champion the intervention. Focus groups most commonly cited word-of-mouth as the best way to attract people to the study. Participants believed the feeling of accomplishment experienced by CM intervention participants would spread to their social networks, generating interest in the intervention with opportunities to recruit through social media. Participants recommended posting eye-catching flyers, brochures, and posters at local stores and social service agencies. Across the sites, participants recommended conducting direct outreach and recruitment from libraries, bus stops, laundromats, treatment centers, homeless shelters, casinos, churches, and grocery stores. Focus group participants recommended distributing flyers to parents experiencing issues related to alcohol misuse through the public-school system. Advertising in the newspaper, tribal newsletters, and bulletins was another mode of outreach.

3.6 Historical context and research

We conducted separate focus groups with providers. Provider focus groups in Alaska highlighted mistrust and wariness of research as a potential issue. Themes that emerged included 1) research and historical trauma 2) overall mistrust of research, 3) exploitation and unethical research. Providers acknowledged that research has been harmful to AI/AN people and therefore takes thoughtful consideration. Providers expressed some apprehension about collecting urine samples for biomarker testing because participants might feel like a “guinea pig” or the subject of unethical research.

Both the Alaska provider and rural community member focus groups discussed historical trauma. Historical trauma refers to the cumulative effects of colonization that has created a soul wound, manifesting as the physical and psychological health inequities among many AI/AN individuals and communities (Duran & Duran, 1995; Heart, Chase, Elkins, & Altschul, 2011). Focus group participants emphasized the importance of healing from historical trauma. The groups discussed the widespread physical and sexual trauma in the participating communities and if the CM intervention would address such traumatic events among participants.

> “We’re not always aware of what that looks like because it happened in our childhood…all that was forced on my parents which I inherited and my children inherited, and now…the boat has turned sideways so we have to relearn all these things and be proud again about culture.”

> “….Because of historical trauma, we all have a lot of things stuck in us…because of the forced, assimilation, forced religion…we lost a lot of stuff…when a program

like this comes in…you have to consider all that for it to work. You have to indigenize it."

Participants in the provider focus group mentioned the forced sterilization of AI/AN women through the 1970s performed by Indian Health Service without informed consent and sometimes under duress (Temkin-Greener, Kunitz, Broudy, & Haffner, 1981; Torpy, 2000). To further illustrate this point, another participant mentioned the 2004 lawsuit brought by the Havasupai tribe against the Arizona State University researchers who collected and misused tribal members' DNA samples without proper informed consent (Drabiak-Syed, 2010). Providers emphasized that research must be transparent and implemented with strict adherence to informed consent procedures, both of which are crucial to rebuilding relationships between researchers and community members.

4. Discussion

This is the first qualitative study examining the cultural acceptability of CM for the treatment of AUDs among AI/AN people. Results indicated six key areas to consider when adapting the CM intervention with AI/AN communities. This includes the modification of reinforcers to meet the recommendations of the specific community. Prizes should be practical, cultural, and support sober activities for the entire family and community. In addition, focus group participants underscored the importance of the community context when implementing the CM intervention and for recruitment. Researchers must also remain cognizant of the present implications of the history of research among AI/AN communities and how this impacts intervention implementation. Lastly, it is ideal to implement cultural activities or practices along with CM to increase community participation and integration of the intervention.

Although we are not aware of other published qualitative research examining CM among AI/AN people, a recent qualitative study examining CM for opioid misuse in England also found that contextual factors influence intervention implementation, including stakeholder input and buy-in as well as trust in those delivering CM (Neale, 2016). These findings underscore how community acceptance of CM for AI/AN adults is likely to increase when all stakeholders are active in the implementation process. A mixed-methods, community-engaged approach, such as the one used in this study (i.e., focus groups prior to RCT implementation) assists in gaining a richer picture of the adaptation and implementation process as well as areas in need of improvement to maximize RCT implementation success (Allen et al., 2006; Whitesell et al., 2012).

Within the RCT, cultural adaptation is an iterative process in which the application of lessons learned occurs in real time with a focus on continuous quality improvement and in collaboration with community stakeholders. Based upon the qualitative findings described here, community consultations, and feedback from current participants we made the following adaptations to the CM RCT. Focus group results indicated prize options should be specific to each community. In the rural community, adaptations included cultural pieces and regalia, including beads and drumming materials. The rural reservation has also offered beaded prizes such as jewelry and items to assist intervention participants in participating

and engaging in traditional ceremonies. In Alaska, prizes included fishing and outdoor gear to support recreational and subsistence activities. Alaska area intervention participants can also choose prizes including movie passes and passes to family-centered activities. In addition, as underscored by the focus group data, to address issues surrounding transportation that occurred after study implementation, we now provide transportation support at all the sites.

It was also determined from the focus group results that the number of CM visits should be reduced from three to two times a week to further alleviate issues around transportation and participant burden. Another approach implemented at the Alaska Native healthcare system to respond to the concerns expressed by focus group participants about informed consent, was to show participants a reward chart. The reward chart helps to visually see the prize draw process that was not clear to some participants based on informed consent alone and enhances trust between the participant and the researchers.

The focus groups suggested cultural adaptations centered around language (Table 3), so we modified prize draw chips to better reflect each community. Prize draw chips are round tokens that indicate the value of the prize that the intervention participant receives when they draw for prizes after submitting an alcohol-negative urine test, a common CM technique (Petry et al., 2005; Peirce et al., 2006 & Roll et al., 2006). In the unmodified intervention 50% percent of the chips have an encouraging phrase, such as “Good job!” (no prize), 41.8% are smaller prizes, 8% are larger prizes ($20 value), and 0.2% are jumbo prizes ($80 value). Adaptations of the draw chips at the Alaska site included words from the Alaska Native cultural groups of potential participants. The language groups included Yup’ik, Siberian Yupik, Tlingit, Athabascan, Dena’ina Athabascan, Ahtna Athabascan, Tsimshian and Unangam Tunuu (Aleut). Two Alaska Native members of the Alaska research team provided positive affirmation quotes from their cultural groups—Yup’ik and Unangax.

Phrases in Yup’ik for example were nutaan atam “right on!,” piurluten” “keep it up!,” and quyana “thank you.” Unangam Tunuu (Aleut language) words of encouragement included awachxizax! “good job!,” kayutuda “be strong,” kidunachxizax “good help,” and hamang haqachxii “keep it up!” (Figure 1). Lastly, study staff at the rural reservation community modified draw chips to represent the colors of the Medicine Wheel: white, yellow, red, and black. These colors symbolize the harmony and balance of the mental, physical, spiritual, and emotional aspects of individuals and their relationship to their family, community and environment (Coyhis & Simonelli, 2005; Coyhis, 2002).

Limitations of this study include external validity and generalizing the findings to other interventions and communities. Consistent with other studies, this research confirmed the appropriateness of supporting participant choice through providing gift cards as reinforcers. AI/AN communities are heterogeneous with distinct languages, traditions, ceremonies, and community needs. Additionally, in a joint-decision with the tribal partners, we did not collect focus group participant demographic information. Demographic data was not collected out of concerns over confidentiality, although other qualitative research conducted among rural, tight-knit communities has successfully obtained such data without issue. This limits our capacity to examine observed patterns in the qualitative data by age category or

gender, for example. Nonetheless, the study includes a large sample with focus groups in three diverse AI/AN communities.

5. Conclusion

The results of this study suggest that positive reinforcers for abstinence provided through CM should be practical, align with existing cultural and community practices, and facilitate cultural and family engagement of AI/AN individuals' trying to reduce their alcohol consumption. In addition, a CM intervention needs a champion such as an Elder or a community leader to enhance trust, support community fit and increase sustainability.

Acknowledgments

Financial acknowledgements: Funding for this study provided by a grant from the National Institute on Alcohol Abuse and Alcoholism, (R01 AA022070 and AA022070-03S1, PI: McDonell and Buchwald).

References

Allen J, Mohatt GV, Rasmus SM, Hazel KL, Thomas L, Lindley S. The tools to understand: community as co-researcher on culture-specific protective factors for Alaska Natives. Journal of Prevention and Intervention in the Community. 2006; 32(1–2):41–59. [PubMed: 17000601]

Barrera M, Castro FG, Strycker LA, Toobert DJ. Cultural adaptations of behavioral health interventions: a progress report. Journal Consulting Clinical Psychology. 2013; 81(2):195–206.

Barry D, Sullivan B, Petry N. Comparable efficacy of contingency management for cocaine dependence among African American, Hispanic, and White methadone maintenance clients. Psychology of Addictive Behaviours. 2009; 23(1):168–174.

Beals J, Novins D, Spicer P, Whitesell N, Mitchell C, Manson S, Team AS. Help seeking for substance use problems in two American Indian reservation populations. Psychiatric Services. 2006; 57(4): 512–520. [PubMed: 16603747]

Boyd-Ball AJ. A culturally responsive, family-enhanced intervention model. Alcoholism: Clinical and Exprimental Research. 2003; 27(8):1356–1360.

Bride B, Humble M. Increasing retention of African-American women on welfare in outpatient substance user treatment using low-magnitude incentives. Substance Use Misuse. 2008; 43(8–9): 1016–1026. [PubMed: 18649227]

Coyhis D, Simonelli R. Rebuilding Native American communities. Child Welfare. 2005; LXXXIV(2): 323–336.

Coyhis, D. The red road to wellbriety: In the Native American way. Colorado Springs, Colorado: White Bison, Inc; 2002.

Cunningham JK, Solomon TA, Muramoto ML. Alcohol use among Native Americans compared to whites: Examining the veracity of the 'Native American elevated alcohol consumption' belief. Drug and Alcohol Dependence. 2016; 160:65–75. DOI: 10.1016/j.drugalcdep.2015.12.015 [PubMed: 26868862]

Dickerson DL, Spear S, Marinelli-Casey P, Rawson R, Li L, Hser YI. American Indians/Alaska Natives and substance abuse treatment outcomes: positive signs and continuing challenges. Journal of Addictive Diseases. 2011; 30:63–74. [PubMed: 21218312]

Drabiak-Syed K. Lessons from Havasupai Tribe v. Arizona state university board of regents: Recognzing group, cultural and dignitary harms as legitimate risks warranting integration into research practice. Journal of Health & Biomedical Law. 2010; 6:175–225.

Duran, E., Duran, B. Native American Postcolonial Psychology. Albany, New York: State Univeristy of New York Press; 1995.

Dutra L, Stathopoulou G, Basden S, Leyrow TM, Powers MB, Otto MW. A meta-analytic review of psychosocial interventions for substance use disorders. American Journal of Psychiatry. 2008; 165(2):179–187. [PubMed: 18198270]

Etz K, Arroyo J, Crump A, Rosa C, Scott M. Advancing American Indian and Alaska Native substance abuse research: Current science and future directions. American Journal of Drug and Alcohol Abuse. 2012; 38(5):372–375. [PubMed: 22931068]

Evans E, Spear SE, Huang Y-C, Hser Y-I. Outcomes of drug and alcohol treatment programs among American Indians in California. American Journal of Public Health. 2006; 96(5):889–896. [PubMed: 16571710]

Gone J, Trimble J. American Indian and Alaska Native mental health: diverse perspectives on enduring disparities. Annual Review Clinical Psychology. 2012; 8:131–160.

Gossage JP, Barton L, Foster L, Etsitty L, LoneTree C, Leonard C, May PA. Sweat lodge ceremonies for jail-based treatment. Journal of Psychoactive Drugs. 2003; 35(1):33–42. [PubMed: 12733756]

Grant TM, Huggins JE, Sampson PD, Ernst CC, Barr HM, Streissguth AP. Alcohol use before and during pregnancy in western Washington, 1989–2004: implications for the prevention of fetal alcohol spectrum disorders. American Journal of Obstetrics and Gynecology. 2009; 200(3):271–278. [PubMed: 19136091]

Greenfield BL, Venner KL. Review of substance use disorder treatment research in Indian country: Future directions to strive toward health equity. American Journal of Drug and Alcohol Abuse. 2012; 38(5):483–492. [PubMed: 22931083]

Heart MY, Chase J, Elkins J, Altschul D. Historical trauma among indigenous peoples of the Americas: Concepts, research, and clinical considerations. Journal of Psychoactive Drugs. 2011; 43(4):282–290. [PubMed: 22400458]

Hser YI, Li J, Jiang H, Zhang R, Du J, Zhang B, Evans E, Wu F, Chang YJ, Peng C, Huang D, Stitzer ML, Roll J, Zhao M. Effects of a randomized contingency management intervention on opiate abstinence and retention in methadone maintenance treatment in China. Addiction. 2011; 106(10): 1801–1809. [PubMed: 21793958]

Johnson, BCL. Educational research: Quantitative, qualitative and mixed methods. 2. Boston: Pearson Education, Inc; 2004.

Lau A. Making the case for selective and directed cultural adaptations of evidence-based treatments: Examples from parent training. Clin Psychology: Science and Practice. 2006; 13(4):295–310.

Lussier JP, Heil SH, Mongeon JA, Badger GJ, Higgins ST. A meta-analysis of voucher-based reinforcement therapy for substance use disorders. Addiction. 2006; 101(2):192–203. [PubMed: 16445548]

McDonell MG, Nepom JR, Leickly E, Suchy-Dicey A, Hirchak K, Echo-Hawk A, … Buchwald D. A culturally-tailored behavioral intervention trial for alcohol use disorders in three American Indian communities: Rationale, design, and methods. Contemporary Clinical Trials. 2016; 47:93–100. DOI: 10.1016/j.cct.2015.12.010 [PubMed: 26706667]

Moore D, Coyhis D. The multicultural wellbriety peer recovery support program: Two decades of community-based recovery. Alcoholism Treatment Quarterly. 2010; 28(3):273–292.

Naimi TS, Cobb N, Boyd D, et al. Alcohol-Attributable Deaths and Years of Potential Life Lost Among American Indians and Alaska Natives -- United States, 2001–2005. Morbidity and Mortality Weely Report. 2008; 57(34):938–941.

Naquin V, Manson S, Curie C, et al. Indigenous evidence-based effective practice model: Indigenous leadership in action. The International Journal of Leadership in Public Services. 2008; 4(1):14–24.

National Institute on Alcohol Abuse and Alcoholism. Alcohol Use and Alcohol Use Disorders in the United States: Main Findings from the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). Bethesda, MD: 2006.

Neale J, Tompkins CNE, Strang J. Qualitative evaluation of a novel contingencymanagement-related intervention for patients receiving supervised injectable opioid treatment. Addiction. 2016; 111(4): 665–674. [PubMed: 26498274]

The Substance Abuse and Mental Health Services Adminstration. The NSDUH Report: Substance Use among American Indian or Alaska Native Adults. Rockville, MD: 2010.

O'Malley SS, Robin RW, Levenson AL, et al. 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. Alcoholism: Clinical and Exprimental Research. 2008; 32(7):1271–1283.

Peirce JM, Petry NM, Stitzer ML, et al. Effects of lower-cost incentives on stimulant abstinence in methadone maintenance treatment: a National Drug Abuse Treatment Clinical Trials Network study. Archives of General Psychiatry. 2006; 63(2):201–208. [PubMed: 16461864]

Petry NM, Peirce JM, Stitzer ML, et al. Effect of prize-based incentives on outcomes in stimulant abusers in outpatient psychosocial treatment programs: a national drug abuse treatment clinical trials network study. Archives of General Psychiatry. 2005; 62(10):1148–1156. [PubMed: 16203960]

Prendergast M, Podus D, Finney J, Greenwell L, Roll J. Contingency management for treatment of substance use disorders: a meta-analysis. Addiction. 2006; 101(11):1546–1560. [PubMed: 17034434]

Rink E. Partnering with American Indian communities in strength-based collaborative health research: Guiding principles from the Fort Peck ceremony of research project. American Indian Alaska Native Mental Health Research. 2016; 23(3):187–205. [PubMed: 27383092]

Roll JM, Petry NM, Stitzer ML, et al. Contingency management for the treatment of methamphetamine use disorders. American Journal of Psychiatry. 2006; 163(11):1993–1999. [PubMed: 17074952]

Roll J. Contingency management: an evidence-based component of methamphetamine use disorder treatments. Addiction. 2007; 102(Suppl 1):114–120.

Shore JH, Beals J, Orton H, Buchwald D. Comorbidity of alcohol abuse and dependence with medical conditions in 2 American Indian reservation communities. Alcoholism: Clinical and Exprimental Research. 2006; 30(4):649–655.

TAP. Tribal Action Plan Guidelines 2011. 2011. Retrieved from https://www.samhsa.gov/sites/default/files/tribalactionplanguidelines_508c.pdf

Temkin-Greener H, Kunitz SJ, Broudy D, Haffner M. Surgical fertility regulation among women on the Navaho Indian Reservation, 1972–1978. American Journal of Public Health. 1981; 71:403–407. [PubMed: 7468881]

Torpy SJ. Native American women and coerced sterilization: On the trail of tears in the 1970s. American Indian Cultre and Research Journal. 2000; 24:1–22.

Indian Health Service. Trends in Indian Health 2014 Edition. 2014. Retrieved from https://www.ihs.gov/dps/includes/themes/newihstheme/display_objects/documents/Trends2014Book508.pdf

Venner KL, Greenfield BL, Hagler KJ, Simmons J, Lupee D, Homer E, Yamutewa Y, Smith JE. Pilot outcome results of culturally adapted evidence-based substance use disorder treatment with a southwest tribe. Addictive Behaviors Reports. 2016; 1(2)

Whitesell N, Beals J, Big Crow C, Mitchell C, Novins DK. Epidemiology and etiology of substance use among American Indians and Alaska Nativs: Risk, protection, and implications for prevention. American Journal of Drug and Alcohol Abuse. 2012; 38(5):376–382. [PubMed: 22931069]

Woodall WG, Delaney HD, Kunitz SJ, Westerberg VS, Zhao H. A randomized trial of a DWI intervention program for first offenders: intervention outcomes and interactions with antisocial personality disorder among a primarily American-Indian sample. Alcoholism: Clinical and Exprimental Research. 2007; 31(6):974–987.

Appendix A: Focus Group Questions

What are some of the community or cultural practices around gifting that we should be aware of when we're giving people these rewards in the program?

for other studies like this, the items people can earn have been called 'prizes', 'rewards', and 'reinforcers'. It has also been suggested that we could call them 'gifts'. What do you think we should call these items for the study and why?

How do you think we can we let people with alcohol problems know about the study? How would we find them and tell them about the study?

Do you think people with alcohol problems would be interested in participating in a study like this? Why or why not?

Are there any changes to the way we are planning on identifying people for the study that you would suggest?

Thank you for sharing your views with me. Do you have any more questions about the project and its goals? Or other things you would like to tell us?

Highlights

- Reinforcers for abstinence provided through Contingency Management should be practical, align with existing cultural and community practices, and facilitate cultural and family engagement of American Indian and Alaska Native individuals' trying to reduce their alcohol consumption.
- The Contingency Management intervention needs a champion such as an Elder or a community leader to enhance trust, support community fit, and increase sustainability.
- Implement cultural activities or practices along with Contingency Management to increase community participation and integration of the intervention.
- Present-day implications of the history of research among American Indian and Alaska Native communities must be considered.

Figure 1.
Draw Chips

Table 1

Overarching themes by community

	Frequency counts			
Overarching theme	**Urban**	**Alaska**	**Rural**	**Total**
CM material reinforcers	21	67	101	189
CM experiential reinforcers	10	41	54	105
Cultural considerations and adaptations	12	68	56	136
Recovery and reinforcer concerns	12	22	28	62
Community environment	19	16	18	53
Recruitment	47	56	83	186
Historical context and research	0	19	2	21

Table 2

Material and experiential reinforcers

Theme	Example Quote
Practical items	"Gas vouchers, I think that'd be real important because we live quite a ways out some of us and transportation seems to be a big issue."
	"Diapers, food, food for their whole family to help 'em keep sober and to not feel bad about not having it…Anything to help them with their kids."
	"Tools…for men…maybe for women a gift card for clothing."
Self-care items	"A membership for the gym to keep people busy with like, exercising."
Changing behaviors	"It might reinforce the whole idea of changing behaviors, so instead of buying alcohol to drink…you'd go out to a movie and maybe say you make that every Thursday now. So, it's more changing your behaviors."
Traditional	"Getting out in nature, that's community kinda, traditional, but it's been sort of lost a little bit. People went hiking or camping…get out in nature. So maybe there can be some kind of pack, you know, some kind of reward, some camping equipment…."

Table 3

Cultural considerations and adaptations

Theme	Example Quote
Gifting	"When we get a gift from somebody it's not necessarily the value of whatever, but the symbolic meaning of it, it means I care, or somebody cares…maybe there could be a package of something that has meaning. Cultural meaning."
Elders	"Somebody or something that they respect in their family, identify an Elder or a family member, and they can do something. A token thing to remember…what they accomplished in their life and that'll be like a motivator for them, 'I want to be like this person.'"
Traditions	"Develop an honor song…have somebody to make that honor song, just for your people, who make that circle. That way when that songs sung, they'll know it and they'll remember it. Because that drum touches their heart. That drum touches their spirit."
Language and symbolism	"I know that language…is a good connector…find words that are easier to pronounce in the Native language. Something…short…the word for "good."
Importance of cultural reinforcers	"Anything that you can have that has a traditional meaning or a historical meaning, it might hit on, hit the heart a little more…it might remind them of a good feeling or a thought they had that they earned this and it's also culturally significant as well. Because that's so important, the cultural component to wellness."

Table 4

Community environment: recovery and the CM intervention

Theme	Example Quote
Abstinence	"Can't really shove recovery into someone's, you know, insides. They gotta wanna recover, they gotta wanna stay quit. All those times I went to treatment, I was forced to by the court system and I wasn't ready, and I just keep progressing further and further and this time around I really wanted it, I really wanted to live life and not just survive."
Reinforcers	"But this time you're working it, your prize level goes up, I mean this is grand. This is great. I've never seen anything like this and this study will have a lot of impact on the future as to how…recovery can grow and develop…people might be serious about this because it's kinda unbelievable…you're not getting punished."
Repairing trust	"If you start with the little small things…they see that when they're sober they make that bond again. Build trust."
Recognition/respect	"We want our people to feel successful and just the rewards, the certificates, all of that's important. I had a young guy in the program, he had been to prison and he came through our rehab program… we gave him a certificate and a bag and you know what he said, 'I've never been successful at anything.' He couldn't believe he got that certificate and I was just like, 'oh my goodness'. …. So, it's meaningful if you can do that."
Issues with gift cards	"There are ways to take that gift card hock it, trade it, or something else with it or get the money and buy whatever you want like beer, alcohol."

Table 5

Negative environmental effects of alcohol misuse

Theme	Example Quote
Community re-entry	"Yeah because they're already punished, they've already done their time, when they come out there and they're already pegged…I believe that…they [will] see the rewards, 'man I'm finally getting something,' you know, 'I'm not being looked at, looked down at, ostracized,'…all these guys coming back and they say 'hell with it, I'll just keep on drinking.'"
Community effects of alcohol	"This is alcohol related, let's get something started to help them and in the right direction…because a lot of the people you see out in the streets, the problem began in the villages…I know it began with me in the village."
	"I see a lot of children that grow up like that where their parents go out once and a while and they're having a drink and having a good 'ol time and the children are like 'oh, that looks like fun' and then they want to try it and they get addicted and get stuck…"