

# Using Motivational Interviewing to Promote HIV Testing at an American Indian Substance Abuse Treatment Facility

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## Abstract (Summary)

Alcohol and drug use are associated with increased risk of HIV/AIDS. American Indians and Alaska Natives (AI/AN) have high rates of alcohol and other drug use, as well as a high incidence of unsafe sex behaviors and injection drug use practices. Indicators of AI/AN HIV risks involving sexual activity include high rates of STDs, such as gonorrhea, chlamydia, and syphilis. Despite these facts, the prevalence of HIV infection among AI/AN is not well known. The present study is part of a HRSA-funded SPNS HIV/AIDS health initiative, one goal of which is to increase the number of HIV-positive individuals who know their HIV status. To meet the goal of the SPNS project, patients in an inpatient alcohol and drug treatment center were provided with an HIV prevention educational presentation followed by one-on-one HIV counseling. Motivational interviewing was used in the counseling sessions to aid participants in recognizing their risk status and making a decision to be HIV tested. Results show that of the 134 who agreed to one-on-one HIV counseling and 105 (78%) returned for their results.

## Full Text

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Abstract-Alcohol and drug use are associated with increased risk of HIV/AIDS. American Indians and Alaska Natives (AI/AN) have high rates of alcohol and other drug use, as well as a high incidence of unsafe sex behaviors and injection drug use practices. Indicators of AI/AN HIV risks involving sexual activity include high rates of STDs, such as gonorrhea, chlamydia, and syphilis. Despite these facts, the prevalence of HIV infection among AI/AN is not well known. The present study is part of a HRSA-funded SPNS HIV/AIDS health initiative, one goal of which is to increase the number of HIV-positive individuals who know their HIV status. To meet the goal of the SPNS project, patients in an inpatient alcohol and drug treatment center were provided with an HIV prevention educational presentation followed by one-on-one HIV counseling. Motivational interviewing was used in the counseling sessions to aid participants in recognizing their risk status and making a decision to be HIV tested. Results show that of the 134 who agreed to one-on-one HIV counseling and 105 (78%) returned for their results.

Keywords-drug use, HIV, motivational interviewing, Native American, STD, testing

One of the more troubling aspects of HIV/AIDS in Indian Country is not having a definite sense of the number of individuals infected with HIV (Bertolli et al. 2004; Vernon 2001 ; Weaver 1999; Metier, Conway & Stehr-Green 1991; Hall et al. 1990). The Centers for Disease Control (CDC) estimate that, overall, 25% of HTV-infected individuals in the United States know their HIV status (Bertolli et al. 2004). According to a report published in 2004, the HIV infection rate for American Indians/Alaskan Natives (AI/AN) is estimated at 11.7 per 100,000, a rate 1.5 times higher than that of Whites (Drug Development and STD News 2004). The number of AI/AN individuals with AIDS is low compared with other racial/ethnic groups in the U.S. (CDC 2005c). The majority of these cases are located in urban areas, although AI/AN with AIDS are more likely to reside in rural areas compared with other racial/ethnic groups (Vernon 2001). Many urban AI/AN return to tribal lands and reservations for ceremonies and visits. This leads to concerns that circular migration may lead to increases in HIV/AIDS cases in rural

populations (Bertolli et al. 2004; Ramirez et al. 2002; Vernon 2001; Weaver 1999; Brassard, Smeja & Valverde 1996; Metler, Conway & Stehr-Green 1992).

AI/AN have suffered epidemics throughout the centuries of contact with European and other invaders. Entire native populations were decimated due to illnesses such as measles and small pox (Vernon 2001). In the twenty-first century, HIV/AIDS is a contemporary threat to AI/AN health and survival (Naranjo 2002; Ramirez et al. 2002; Vernon 2001). In order to successfully confront this threatened epidemic, AI/AN individuals should be aware of HIV/AIDS prevention, follow prevention behaviors, and for those who suspect they were exposed through risky behaviors, get tested to know their HIV/AIDS status.

There is abundant evidence that AI/AN are knowledgeable about HIV/AIDS (Duran & Walters 2004; Simoni, Sehgal & Walters 2004; Mitchell & Kaufman 2002). However, there is also sufficient evidence that AI/AN do not always practice the sexual and injection drug use prevention techniques they have learned. One indicator of high HIV-risk sex practices is the rate of sexually transmitted diseases (STDs) that are contracted annually (Bertolli et al. 2004; Vernon 2001). Among minorities, AI/AN have the second highest rates of gonorrhea, chlamydia and primary and secondary syphilis (Bertolli et al. 2004). Evidence suggests STDs are a precursor for HIV/AIDS (CDC 2005b; Vernon 2001) making the risk of HIV infection two to five times greater when other STDs are present (CDC 1998). For males and females, chlamydia and gonorrhea are apparently more conducive to HIV shedding and can be indicators of HIV infectiousness (CDC 2005d). Viral shedding refers to the presence of HIV or other STI virus or bacteria in body fluids such as vaginal secretions or semen. Between 1989 and 1998 in a study that included 151 HIV-infected AI/AN, it was found that acute STDs were more likely to be diagnosed in HIV-infected AI/AN than other non-AI/AN participants (Bertolli et al. 2004).

Abuse of alcohol and other drugs is another risk factor in exposure to HIV/AIDS for AI/AN, as it is thought to decrease inhibitions and interfere with preventive behaviors (Naranjo 2002; Ramirez et al. 2002). The CDC's Supplement to HIV/AIDS Surveillance (SHAS) (Bertolli et al. 2004) indicated that of the HIV-infected individuals interviewed in the CDC-sponsored interview study twice as many AI/AN were potentially alcohol dependent compared to non-AI/AN participants. Additionally, a higher percent of AI/AN participants reported ever using illicit drugs than non-AI/AN participants. Furthermore, of those who reported illegal drug use, a higher percentage of AI/AN used intravenous drugs than non-AI/AN. Of these participants, 76% reported they had engaged in needle sharing, and 13% reported they shared needles with HIV-positive individuals (Bertolli et al. 2004). A study of injection drug users (IDUs) in Canada suggested that aboriginal men and women were at higher risk of HIV seroconversion than nonaboriginals, finding that over the four years of the study, HIV incidence was twice as high among aboriginals (Craib et al. 2003).

Some AI/AN populations have high rates of alcoholism and other drug abuse (Duran & Walters 2004; Baldwin et al. 2000). Beals and colleagues (2005) conducted research with two American Indian groups residing on or near tribal lands to explore the prevalence of DSM-IV disorders. They found that alcoholism was the most common disorder among the males, and posttraumatic stress disorder the most predominant among females, and stated that "alcohol and post-traumatic disorders were more common in [the AI sample populations] than in other populations" (Beals et al. 2005). Baldwin and colleagues (2000) found that many of their AI/AN informants reported drinking alcohol or injecting drugs to the extent of blacking out and later learning that they had engaged in unsafe sex. Simoni, Sehgal and Walters (2004) suggested that trauma, both as experienced in individuals' lives and cultural/historical trauma, are associated with HIV risk behavior among AI/AN, including substance abuse behaviors that AI/AN may use as a way to cope with trauma. In their study of HIV risk behaviors

among American Indians, Walters, Simoni and Harris (2000) found that 44% of drug users had experienced physical and/or sexual assault, or domestic violence during their life time, and that trauma and alcohol or other drug use were predictors of HIV risk behaviors in their sample.

Risky behaviors create vulnerabilities to HIV infection. There is no cure for HIV/AIDS infection, but medications and diet can extend the interval between HIV infection and an AIDS diagnosis. If one suspects an exposure to HIV infection, appropriate testing can provide a determination of one's HIV status, and if it is positive lead one to seek medical treatment early in the disease (CDC 2003). Testing to determine one's HIV status can be simple and quick (CDC 2005a). However, reluctance, resistance or lack of access to HIV/AIDS testing is a phenomenon found among different populations. A study of AI/AN risk behaviors indicated AI/AN were more likely to report HIV/AIDS risk than other minorities-9% of the sample reported medium risk and 7% reported high HIV risk. The study also revealed that AI/AN in the Southwestern U.S. were more likely to report never having been tested for HIV than AI/AN from other U.S. locations (Denny, Holtzman & Cobb 2003).

<b>TABLE 1</b>	
<b>Use of Stage of Change (SOC) to Develop an STD/HIV Behavioral Intervention*</b>	
1. <b>Precontemplation</b> - Has no intention to take action within the next six months.	
2. <b>Contemplation</b> - Intends to take action within the next six months.	
3. <b>Preparation</b> - Intends to take action within the next 30 days and has taken some behavioral steps in this direction.	
4. <b>Action</b> - Has changed overt behavior for less than six months.	
5. <b>Maintenance</b> - Has changed overt behavior for more than six months.	
6. <b>Termination</b> - Overt behavior will never return, and there is complete confidence that you can cope without fear of relapse (this stage is probably not applicable to substance dependence).	
<b>Motivational Interviewing Skills</b>	
Express EMPATHY through reflective listening.	
Develop discrepancy or inconsistencies between client goals and current behavior.	
Avoid argument and direct confrontation.	
Adjust to client's resistance rather than opposing it directly.	
Support self-efficacy and optimism.	
*Sources: Prochaska, Reddings & Evers 2002; Miller & Rollnick 1991	

TABLE 1  
Use of Stage of Change (SOC) to Develop an STD/HIV Behavioral Intervention\*

In a study of non-AI/AN alcohol and other drug users, Hughes (2002) found that reasons for not getting tested included fear of being HIV positive and not believing one is at risk. This study found that reasons for testing included thinking of the welfare of significant others, wanting to know one's HIV/AIDS status, and using testing as "a substitute for condom use." Furthermore, the researcher found that users under 25 years of age were more likely to consider themselves not at risk compared to those over 25 years of age (Hughes 2002). Other studies also found that participants were hesitant to be tested either because of fears of having HIV/AIDS and stigma if the results were HIV-positive (Flowers & Church 2002), or because they did not consider themselves to be at risk (Fernandez et al. 2005; Kellerman et al. 2002; Downing et al. 2001). Research studies have found that some common reasons for being tested are: feeling ill (Bertolli et al. 2004; Wong et al. 2004); having access to medical care (Flowers & Church 2002); perceiving themselves to be at risk (Downing et al. 2001); and because testing is a part of regular health care (Leaity et al. 2000). Confidentiality issues have often been noted in the literature as reasons that rural AI/AN resist getting tested, as rural tribal communities are generally close knit and everyone knows each other (Vernon 2001).

Getting tested may be perceived as an admission of engaging in risky behaviors (Hughes 2002), and testing for HIV/AIDS among AI/AN in rural areas meets with difficulties on many levels. Individuals are reluctant to be tested in areas where they can be identified because of confidentiality concerns. Communities may stigmatize not only the individuals suspected of these behaviors but their families as well (Vernon 2001). Many tribes' historical acceptance of a variety of gender classifications is eroding and homophobia is becoming more common, which is a factor influencing readiness to be tested. In addition, in some areas health clinics are distant and access to testing facilities may be difficult.

Many people have trouble acknowledging that their behaviors may put them at risk of contracting HIV. Alcoholics and other drug abusers in particular are likely to deny the possibility that they were exposed to the virus or are HIV positive (Vernon 2001). Personal resistance to being tested can be addressed using a psychological approach such as motivational interviewing (MI). This approach has been shown to impact resistance to changing behavior and/or attitudes. It is reported to be successful in a variety of settings for conditions including addiction to alcohol, other drugs, or gambling (McCambridge & Strang 2004; Takushi et al. 2004; Stotts et al. 2001; Handmaker, Miller & Manicke 1999); weight control and diet (Resnicow et al. 2001); exercise program compliance (Scales & Miller 2003); diabetes control (Channon, Smith & Gregory 2003; Smith et al. 1997); contraceptive counseling (Petersen et al. 2004); education for safe water use (Thevos et al. 2000); and promotion of dental care (Skaret et al. 2003).

MI is a process used by therapists or counselors to aid individuals in behavioral change by assisting clients to individually reflect on their behavior by asking nonjudgmental questions about the effects of risky behaviors on themselves and others (Harvard Mental Health Letter 2005; Miller & Rollnick 1991). The clients explore their values and may recognize how their behavior is not aligned with these values. This recognition may lead to cognitive dissonance—a state in which the mental and/or emotional state and cognition are in contradiction and the client experiences discomfort. The client resolves this cognitive dissonance by identifying what behaviors or thoughts to change in order to restore an alignment of values and behavior. The role of the therapist or counselor in MI is to act as a nondirecting guide by posing questions that have the potential to urge the client to reflect on behavior and values. Therapists or counselors do not attempt to lead the client in a particular direction, but assist the client's search for resolution of cognitive dissonance (Britt, Blampied & Hudson 2003).

Graham (2004) criticized the counselor's ability to practice the four principles of MI: to express empathy; develop discrepancy; roll with resistance; and support self-efficacy. Empathy, argues Graham, requires a much longer time to develop than that provided in the training period of MI, in most cases an average of two days.

MI was linked to the Transtheoretical Model/Stages of Change Theory in the present project because many clients do not seek testing since they are in a precontemplative stage of change (see Table 1). The six stages of change includes precontemplation (in which individuals do not recognize the seriousness of a problem or the importance of changing behavior, sometimes termed denial), contemplation (in which individuals are aware of a problem but have not decided to act); and the action stage, in which individuals change behavior associated with a problem (Harvard Mental Health Letter 2005; Prochaska, Reddings & Evers 2002).

Motivational interviewing as an intervention strategy targets individuals and groups in the precontemplative stage of change. By reducing ambivalence, pointing out inconsistencies between behavior and values, supporting self confidence and optimism and rolling with resistance in a nonconfrontation manner, motivational interviewers move people towards concrete actions steps in

reaching new, healthier behavioral goals. MI appears to be successful in HIV counseling, although few studies have been identified that examine this use of MI. One study concerned a pilot project among sex workers in Tijuana, Mexico that impacted risk behaviors and intentions (Patterson et al. 2005). In another study of gay men in London, peer educators were used to administer on-the-spot risk assessment and MI in locations where gay males congregated, such as parks and bars (Harding et al. 2001). The main goal of the study by Harding and colleagues was to raise awareness about risk reduction and encourage subjects to think about what they could do to reduce their HIV risks. Effectiveness was determined based on comments made by subjects during the intervention; however, there was no follow-up to ascertain whether subjects changed their behavior.

Encouraging alcohol and other drug users to learn their HIV status involves a process of change in which they transition from being ambivalent about their risk or fearful of the results or not wanting to encounter anticipated stigma to realizing how HIV may be a risk to themselves, their loved ones and the larger community, and finally, deciding to get tested. Using MI is one method to assist clients to realistically confront their HIV risk behavior and progress through stages to change.

The present study examines the effectiveness of an HIV/AIDS intervention that aims to increase the numbers of substance-abusing individuals who know their HIV/ AIDS status.

## METHODS

### Program Site Background

The project studied here was part of a AI/AN HIV/ AIDS health initiative funded by the Health Resources and Services Administration (part of the United States Department of Health and Human Services) Special Projects of National Significance Program. Participants were AI substance users in a residential treatment program who were at high risk for HIV due to their sexual risk behaviors. The treatment provider, a private, not-for-profit border town facility serving predominately AI/AN clients, offers substance abuse and traditional Native American counseling services in three residential treatment settings and a small outpatient component. It is the largest community-based provider of substance abuse services in the study region. The 23 1/2-day structured program is based on the culture and history of the tribe and aims to teach "client-relatives" to better respect themselves and others. Clients are referred to as "relatives" to be congruent with the Native American value of unity and to break down the strict therapist/client dichotomy used in other treatment programs, as well as to acknowledge the sense of relation that members of the tribe share. The program has traditional healers and medicine men on staff and integrates traditional ceremonies into the recovery program. There are two psychologists on staff as well as several counselors certified by the National Association of Alcoholism and Drug Abuse Counselors (NAADAC) and the State Counseling and Therapy Practice Board as Licensed Alcohol and Drug Dependency Counselors (LADDC).

The project is located in a large rural area in the southwestern United States with a population of approximately 250,000 residents. Stigma still pervades the tribal community on the issue of HIV/AIDS. The recent rise of conservative religious efforts has further compounded and complicated this problem. Many community members incorrectly believe that only gay/bisexual (two spirit) men can contract HIV, and blame them for HIV in general. For this reason, tribal individuals with HIV are discouraged from accessing testing and services, and may not even know their HIV status. Many have a sense of separation between traditional tribal teachings and their self-identification as gay or bisexual. This separation often leaves them isolated and lacking support, resulting in risk behaviors such as problem

drinking and unprotected sexual activity. Significant problems related to "coming out" such as depression may also result, perhaps leading to additional risk behavior. On the other hand, since the inception of the first SPNS project in 1996, there has been considerable progress in educating the general population, traditional and western care providers, tribal leadership and people with and at risk for HIV/AIDS. Many individuals who have an HIV/AIDS diagnosis access both IHS and traditional Native healing services with a high level of client satisfaction with services.

The local Indian Health Service collects a variety of demographic and medical data on its patients. Since 1987 a total of 136 clients with HIV/AIDS had been served, including 16 new cases in 2001. During 2001, 40 patients received ongoing care in the HIV/AIDS facilities. This was roughly double the agency's caseload compared to recent years. Gay/bisexual men and men who have sex with men (MSM) accounted for the largest proportion of HIV/AIDS cases in the area, making up almost 60% of the total cases. MSMs also accounted for 10 of the 16 new cases in 2001 (63%). Heterosexual transmission and IDU each accounted for less than 20% of cumulative cases. Information on the disease status of new cases showed that many individuals entered into care late in their disease. This is an indicator that testing should be a priority for early identification of HIV infections and medical treatment.

### Alcohol and Drug Background

Alcoholism and drug abuse have increased in the project area over the past several decades, and concurrently so have substance abuse-related problems including violence, morbidity and mortality related to alcohol and its social problems. Overwhelmingly, the drugs of choice in the service area are alcohol and (drinking) hairspray. Hairspray is used largely due to its low cost. Local data and reports from alcohol/other drug treatment providers confirmed that use of illicit drugs such as heroin and methamphetamine, as well as injection drug use, remain rare on and near the project area. However, indicators of alcohol use are alarming. Between 1973 and 1992, law enforcement in the projects service area picked up an average of 32,000 publicly intoxicated individuals each year and placed them in protective custody. This number dropped 30% in 1993, the first full year of operation for the residential substance abuse treatment facility. During 1987 to 1993, another location in the project area ranked among the top five areas in America for per capita DUI-related crashes. In 1997, mortality due to substance abuse was 160 per 100,000.

### Sample

Between 2002 and 2004, 105 individuals agreed to participate in the project, received testing and returned for their results. This sample constituted approximately 78% of clients approached for participation who met the inclusion criteria of enrollment in either inpatient or outpatient substance abuse treatment. The majority of the clients at the treatment facility present for short-term detoxification services and are not eligible for HIV/AIDS prevention services. Of those participating, 71 (67.6%) were male, 33 (31.4%) female and one was transgender (see Table 2). Ages of individuals in the sample were between 20 and 62, with the majority from 31 to 40 years of age. Participants were recruited while in residence at a drug and alcohol treatment center or attending day treatment and were either voluntary admissions or in court ordered treatment.

**TABLE 2**  
**Sample Demographics (N = 105)**

	<b>Number</b>	<b>Percentage</b>
<b>Gender</b>		
Male	71	67.6
Female	33	31.4
Transgender	1	1.0
<b>Age</b>		
20-30	32	30.5
31-40	37	35.2
41-50	29	27.6
50+	7	6.7
<b>Sexual orientation</b>		
Gay/Lesbian	3	2.9
Bisexual	3	2.9
Heterosexual	81	77.1
Missing	18	17.1

TABLE 2  
Sample Demographics (N = 105)

#### Intervention

The first part of the intervention is a 60-minute group HIV risk and protective factor knowledge presentation. A bilingual English/Navajo speaking Health Educator conducts these sessions. The curriculum has a standard content of HIV risk and protective knowledge, but is flexible enough to also include current newspaper articles and other literature on and around the reservation dealing with HIV and STD issues. The second part of the intervention is a 30-minute individual Mi-inspired session with the same health educator. In that session, substance abuse treatment clients are provided with a one-on-one behavioral risk assessment followed by an individualized educational session tailored to each person's risk behaviors. The HIV/AIDS Risk Knowledge Scale (Kelly et al. 1989), a standardized 40-item test, is used to determine pre and post intervention increases in HIV/AIDS risk knowledge. It was selected because HIV risk behavior knowledge may serve as a useful dependent measure when evaluating the impact of applied or experimental HIV prevention programs, especially with groups who

are at potential risk for the syndrome. The post-intervention test is given when clients come in for their test results approximately two weeks after the initial education session.

As stated above, during the course of treatment, all participants received an HIV prevention education presentation in a classroom setting. At the conclusion of the presentation, an invitation was made to all participants to visit privately with a HIV counselor for more HIV/AIDS information. Of those invited, 134 responded and visited privately with the HIV counselor. During the one-on-one counseling session, the counselor answered questions about the group presentation, explained the principles of confidentiality and described the research project goals and objectives. She then employed MI techniques to aid clients in reflection about their own risk factors and where they may make changes in their attitudes or behaviors. The counselor used that information to complete a mini risk assessment with the client. If the client agreed to an HIV test, the counselor explained the procedures for the blood draw and provided the informed consent form for the blood draw and an HIV test. A risk reduction plan based on current high-risk behaviors with safer behavioral goals was completed and documented in the nursing notes. The HIV counselor then completed the state HIV assessment form that included a number that was written on a card for the client to claim their test results. If the client agreed to become a research participant, the informed consent form was explained to the client and signed. The HIV/AIDS Risk Behavior Knowledge Scale was administered as a pre-test and the clients were given an appointment card to return for their results. The results were available two weeks from the date of the test. Participants were offered a financial incentive (\$20) to return for test results and to complete the HIV/AIDS Risk Behavior Knowledge again as a post-test.



**TABLE 3**  
**Item by Item Change in Knowledge, Attitude and Behavior Scores (N = 105)**

Question	Pre-test Mean	Post-test Mean	McNamara P-value
Keeping in good physical condition is the best way to prevent exposure to the AIDS virus.	.695	.857	.001
Condoms make intercourse completely safe.	.600	.886	.000
Showering after sex greatly reduces the transmission of AIDS.	.848	.933	.039
When people become sexually exclusive to one another, they no longer need to follow "safe sex" guidelines.	.781	.943	.001
Oral sex is safe if the partners "don't swallow."	.829	.962	.001
Most people who have been exposed to the HIV virus quickly show symptoms of serious illness.	.686	.848	.001
By reducing the number of different sexual partners, you are effectively protected from AIDS.	.733	.895	.001
The AIDS virus does not penetrate unbroken skin.	.390	.610	.000
Sharing toothbrushes and razors can transmit the AIDS virus.	.752	.848	.050
Pre-ejaculatory fluids carry the HIV virus.	.838	.924	.039
Withdrawal immediately before orgasm makes intercourse safe.	.781	.886	.012
Healthy persons in AIDS risk group should not donate blood.	.219	.419	.001
Sharing kitchen utensils or a bathroom with a person with AIDS poses no risk.	.543	.724	.004
Intravenous drug users become exposed to the AIDS virus because the virus is often contained in heroin, amphetamines, and the injected drugs.	.486	.695	.000
A wholesome diet and plenty of sleep will keep a person from becoming exposed to the AIDS Virus.	.867	.952	.039
A cure of AIDS is expected within the next two years.	.838	.962	.002
It is more important to take precautions against AIDS in large cities than in small cities.	.714	.838	.024
A negative result on the AIDS virus antibody test can occur even for people who carry the virus.	.638	.790	.011
A positive result on the AIDS virus antibody test can occur even for people who do not carry the virus.	.505	.657	.014
Coughing does not spread AIDS.	.648	.790	.014
Only receptive (passive) anal intercourse transmits AIDS.	.581	.800	.001
Most persons exposed to the AIDS virus know they are infected.	.638	.752	.014
Donating blood carries no AIDS risk for the donor.	.410	.581	.004
No cases of AIDS have ever been linked to social (dry) kissing.	.638	.914	.000
Mutual masturbation and body rubbing are low risk unless the partners have cuts or scratches.	.724	.838	.029
The AIDS virus can be transmitted by mosquitoes or cockroaches.	.648	.924	.000

**TABLE 3**  
**Item by Item Change in Knowledge, Attitude and Behavior Scores (N = 105)**

Within 10 to 20 days, the clients returned to the HIV counselor for their HIV test results and to receive post-HIV test counseling and interpretation of the test results. The risk reduction plan was reviewed with the client and safer sex procedures were reinforced. If the HIV test was positive (this happened only once), the client was referred to HIV primary care and case management service providers.

#### HIV Testing

Many HIV testing facilities are currently using a rapid results testing method. However, in the study site, a test that required a blood draw and a longer time period was selected so that results could be obtained for syphilis, chlamydia, gonorrhea, hepatitis A, B, and C, and HIV. This gave participants an opportunity to practice their newly acquired knowledge of their risk reduction plan.

## Motivational Interviewing

Motivational interviewing (MI) in private counseling sessions was utilized as an aid to the clients as they explored their HIV risk behaviors. Using this technique, the counselor asked questions or made comments that helped the client remain focused on the disconnection between client values and behaviors, with the anticipated result that clients may experience cognitive dissonance. In order to relieve the discomfort, clients searched for ways to resolve the contradiction by identifying areas of behavior they could change. The counselor asked questions of the client in order to help move toward changing behavior, such as HIV testing; these questions confronted the client's fears or resistance to testing. In this study, MI was used in a process of coming to acknowledge risk and modify behavior.

## FINDINGS

Of those in residential drug/alcohol treatment who participated in the HIV educational presentation, 134 met criteria for study inclusion and were asked to continue with HIV counseling and testing. Seventy-eight percent (N = 105) of clients who sought HIV counseling submitted to HIV testing and returned for results.

The pre/post test results indicate that the group and individual interventions were overwhelmingly successful in improving knowledge of risk and protective behaviors, transmission and signs and symptoms of HIV/AIDS (see Tables 3 and 4). Only questions with predominately correct responses at baseline did not show significant knowledge increase (a ceiling effect).

## DISCUSSION

The authors believe that motivational interviewing is a factor in the decision of 78% of clients who received HIV/ AIDS education to agree to HIV testing. Although there are no comparable studies conducted in AI/AN substance abuse treatment facilities, this intervention, a combination of motivational interviewing with other culturally competent approaches, seems to have overcome the well documented lack of trust Native Americans often have in the U.S. mainstream health care delivery system. (U.S. Civil Rights Commission 2004, 2003) However, caution is necessary in interpreting this outcome. The one-group, pre/ post test design of the intervention limits our ability to attribute the results definitively to the intervention. In keeping with the priorities of the tribe and project collaborative, we deliberately chose to offer the intervention to all those who might benefit rather than to privilege the research aims and to use a stronger research design. Of those who agreed to get tested, 105 (78%) returned for results. This result may be due to several factors. All participants were in residential treatment for alcohol or drug abuse, either voluntarily or by court order, and may have been more open to making changes in life threatening behaviors for this reason. Those who were voluntarily in treatment may have had a higher awareness of HIV risk behaviors and therefore were more likely to want HIV testing. Those in treatment due to court order may have reasoned that compliant behavior could gain approval and appeasement of authorities, and therefore would agree to HIV testing. Second, those who agreed to HIV counseling may have been more motivated to change their behavior and may recognize the damage they were doing to themselves and/or their families and communities. Third, they were paid with a \$20 gift certificate as an incentive to return to obtain their results and complete the post-test. Because 99% of those participating in HIV counseling agreed to testing, it appears MI may have had an impact on individuals in alcohol and drug treatment.

**TABLE 4**  
**Total Change in Knowledge, Attitude**  
**and Behavior Scores (N =105)**

	<b>Mean</b>	<b>Standard Deviation</b>	<b>P-value</b>
Pre-test	28.0	6.95	
Post-test	32.6	4.42	
Pre-post	-4.6	6.03	<.0001

TABLE 4  
Total Change in Knowledge, Attitude and Behavior Scores (N =105)

Regardless of the limitations of this study, we are confident that our project has contributed to the literature regarding motivational interviewing and also the adaptation of evidence-based interventions for culturally distinct populations. Further research is needed to definitively determine the effect of this promising intervention for Native populations.

**[Footnote]**

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