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Sweat Lodge Ceremonies for Jail-Based Treatment†

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Clayton LoneTree*****; Carol Leonard, M.P.H.***** & Philip A. May, Ph.D.*

Abstract—Sweat lodge ceremonies (SLCs) have been an integral part of Navajo culture for hundreds of years. The Dine' Center for Substance Abuse Treatment staff utilized SLCs as a modality for jail-based treatment. Data were collected from the Spring of 1996 through the Spring of 1999 from 190 men ranging in age from 18 to 64. These inmate/patients (IPs) provided information at intake on a broad range of questions which were important in understanding the problems these men were having with alcohol and other drugs. Experiential data were collected from 123 IPs after each SLC. Several cultural variables showed improvement in the IP's world view following the SLCs. Even though there were few areas where data were statistically significant, several drinking measures changed in a positive direction. For example, among those subjects who were followed-up, analysis revealed a decrease in the number of drinks consumed in drinking sessions from a mean of 6.7 drinks at intake to a mean of 5.3 drinks. This article examines the role of SLCs in traditional counseling in jail-based treatment of alcohol abuse.

Keywords—alcoholism, Dine', Navajo, sweat lodge, traditional healing

There is relatively little empirical data that explains the nexus between substance abuse and crime by American Indians (May & Gossage 1998). The literature suggests however, that alcohol was a factor in 59% to 95% of all types of crime committed by Indians (May & Gossage 1998). American Indians are overrepresented in arrests, court proceedings, and correctional institution populations (Waldram 1996). Once released from prison, estimates are that from one third to 80% of all prisoners will reoffend and be returned to prison (Bureau of Justice Statistics 1993; Clark 1971; President's Commission 1967). The social and

economic cost of crime is enormous. Public health and criminal justice officials everywhere are continually looking for ways to effectively provide treatment, to lower recidivism, and to control costs.

Most substance abuse treatment programs inside and outside of prisons utilize western psychoanalytic or cognitive behavioral therapy methods. These modalities are frequently ineffective for Indians (Stewart, May & Muneta 1980). The Navajo Nation began a demonstration substance abuse treatment program in October 1993 titled the Dine' Center for Substance Abuse Treatment (DCSAT). The

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DCSAT was one of six Rural, Remote and Culturally Distinct (RRCD) population projects funded by the Center for Substance Abuse Treatment (CSAT). The DCSAT's focus was to provide culturally competent counseling to their patients. The sweat lodge ceremony (SLC) was one of 12 traditional healing ceremonies used by DCSAT to treat patients with alcohol and substance abuse problems.

In Navajo culture, the ideal state for an individual is tranquillity and harmony (*Ho'zho'na'hasdli'i'*) through being in "balance" within self, family, community, and Mother Earth. The Dine' (the Navajo people) believe that abuse of alcohol or use of drugs is a symptom of a loss of balance. The primary objective of the DCSAT project was to help individuals return to a state of balance through the use of traditional healing ceremonies (THCs).

Berger (1998) advises that sweat bathing has been practiced for thousands of years in many cultures throughout the world. According to Hall (1986), the SLC provides the means to bring the individual closer to the elemental forces of life. It nurtures unity between humans and other living beings, inorganic matter, and physical forces—all components of the universe. The SLC is considered a core ceremony in Navajo spirituality. Sweats are cleansing ceremonies and are intended to give a newness of soul, spirit, and body to those who participate in them. Important to the DCSAT project, they are also intended to teach patience, strength and forbearance (Bartlett 1998). There are two types of SLCs used on the Navajo Nation: the Dine' and the Native American Plains model. The Dine' sweat lodge is made with dirt and wood and permanently situated in camp settings. It is a dry sweat with heated rocks placed on the north side. The Plains model is mobile, and made with willow branches, blankets, canvas and/or tarps. It is circular and when fully constructed it has the shape of an igloo. Super-heated rocks are placed in the center of the sweat lodge and water is poured on the rocks to create steam. The intense heat one experiences during a sweat makes it a trying ordeal. Individuals who attend a sweat must be willing to suffer and be prepared to give all of their strength, prayers and songs to their Creator. Only in this way can one expect to receive a blessing and benefit from the ceremony. Tribal elders say that "the purer a man becomes, the closer to the Creator he is" (Bartlett 1998).

Waldram (1996) notes there is no concrete evidence concerning if and how traditional medicine actually works. Only one study provides a discussion of the impact of SLCs on recidivism. In 1989, data were analyzed for 100 inmates who participated in SLCs and revealed a recidivism rate of only 7%, compared to an estimate of 30% to 40% for other inmates who did not participate in SLCs (Amnesty International 1992). That study, however, left unanswered many important questions where SLCs were the only treatment modality offered to inmates. For example, it would be important to know the average time that had elapsed when the 7% recidivism rate was calculated. Secondly, it would be

important to know how closely arrest records of tribal, state, or federal law enforcement agencies were monitored for rearrests of those 100 men. Data being reported in the present study are intended to provide an improved replication of this earlier work and advance current knowledge about the efficacy of SLCs. SLCs have been conducted in correctional institutions since the early 1980s and became available to inmates in the Navajo Nation's Window Rock Jail (WRJ) in June of 1994. Since June 1994, about 1,000 different inmates have participated in SLCs in the WRJ. The WRJ houses both male and female prisoners; the majority of prisoners are male. Only male prisoners were included in this study.

METHODS

Four self-administered questionnaires were developed to gather data from the inmate/patients (IPs) during stages of the therapeutic cycle. These questionnaires were developed uniquely and specifically for the DCSAT. The first questionnaire (with 200 variables) gathered a comprehensive history (pretest) of the IP before he participated in SLCs in the WRJ. Variables included: demographic and socioeconomic information, culture, acculturation, social network, previous sweat lodge participation, IP's world views, boarding school experiences of parents and subjects, domestic violence, military service, norms and values about the use of alcohol, drinking behaviors (including reasons for drinking, the social context of drinking, and quantity and frequency of drinking), use of tobacco and other drugs, consequences of drinking, sources for obtaining alcoholic beverages, history of involvement with the criminal justice system, information about how alcohol or drugs contributed to the current offense(s), reflections on the age when alcohol and/or drugs became a problem in IP's life and the severity of those problems, history of alcohol and substance abuse treatment, intergenerational trauma and living in "two worlds" as possible causes for current problems with alcohol or drugs, physical health at time of intake, risky behaviors related to HIV/AIDS, level of ambivalence toward one's use of alcohol, readiness and taking steps to change alcohol-using behaviors, measures of risk within IP's social network (number of friends who drink as well as prevalence of family members and friends who also have drinking problems), and intentions to seek additional help upon release from the jail.

A second questionnaire (with 21 variables) was used multiple times to collect the IP's feelings about each sweat lodge experience. Third and fourth questionnaires (with 56 variables each) were designed to collect follow-up data three and nine months after the IP was released from the WRJ. Several sets of identical questions were included in the green, yellow, blue and pink questionnaires to provide the opportunity to measure change over time and treatment outcome.

Treatment in the WRJ followed essentially this sequence: as soon as was practicable, one of DCSAT's Traditional Counselors (co-author Louie Barton), contacted prospective patients in the WRJ and informed them of the opportunity to receive SLCs while they are incarcerated in the jail. Once an individual consented to participate in the DCSAT study, each IP completed the baseline/preintervention assessment questionnaire. Those IPs in maximum security were not allowed to participate (although these men probably needed the SLCs the most).

On each Tuesday afternoon, co-author Larry Etsitty conducted alcohol education classes in the WRJ. Then on each Thursday afternoon, Etsitty and/or Barton conducted group psychotherapeutic sessions within the SLC experience. Thereafter, data were collected from each participant via the yellow questionnaires to record IPs' experiences, thoughts, and feelings immediately following the ceremony (post test #1). Follow-up began three months after they were released from the WRJ.

It is appropriate to mention here some of the limitations of this research. This component of the DCSAT project did not start until two years into the grant period. There was no pure control group, and IPs were not randomly assigned to differing treatment modalities. Recruitment was uneven and may have biased the sample. Some IPs chose to not answer substantial numbers of questions. A prisoner escape (not the fault of the DCSAT team) led to a suspension of SLCs for a period of time. In some instances, IPs were released shortly after a SLC and before experiential data could be collected. We were unable to control for the possible impact the alcohol education classes had on each IP. And despite considerable effort, half of the IPs, once released from the WRJ, could not be followed-up.

RESULTS

With the exception of follow-up in the field, data collection was reasonably smooth. Sample size does vary somewhat from assessment question to assessment question, as the green questionnaire was improved upon in three stages.

Baseline (Time 1)—Enrollment Data

One hundred ninety IPs were enrolled in DCSAT's jail-based treatment program. For purposes of this article the sample was divided into two groups: those IPs who were followed-up (IPsFU), and those not followed-up (IPsNFU). Selected demographic and cultural variables are reported in Table 1. The IPs ranged in age from 18 to 64. Among the entire sample, the mean age was 30.2, the median age was 29, and the modal age was 36 (the two groups were similar with respect to age).

The data are consistent concerning the level each IP achieved in school. Almost half of the IPs did not finish high school or earn a GED. More IPsFU did not finish high

school or receive a GED, while more IPsNFU graduated from high school or received a GED. The two groups are very similar in that roughly a quarter of each group matriculated beyond high school.

A stable marriage or marriage-like relationship can be an important source of support for individuals in alcohol or drug treatment. However, the largest subset of this sample were single (41%). About 30% of the IPsFU and IPsNFU were married and living with their spouses or living with a woman in a common-law relationship.

The degree of connectedness one has with the Dine' culture would likely be important in internalizing the benefits from the SLCs. While the groups varied modestly on this variable, the majority of IPs rated themselves as "medium" in their level of traditionality with Dine' culture.

Alcohol is by far the drug of choice among the Navajo (May & Del Vecchio 1993; May & Smith 1988). Forty-four variables were included in the intake assessment tool to obtain a thorough understanding of the IPs' use of alcohol. The variables covered topics including the circumstances of their earliest exposure to alcohol; age started drinking; age at which they began drinking regularly; reasons for drinking; quantity, frequency and variability of drinking; places the IPs go to obtain alcohol; the amount spent each month on alcohol; with whom the IPs drank; where they usually drank; and consequences of drinking alcohol.

The earliest exposure to the use of alcohol often times occurs in the home. Even though possession and use of alcohol is prohibited on the Navajo reservation, 48% of all IPs advised that they observed the use of alcohol in their home when they were children. The data are quite different between the two groups, with a higher exposure to alcohol in the homes of the IPsNFU (60% versus 39% for IPsFU). The two groups of IPs are also a bit different in terms of the age at which they were initiated into the use of alcohol. The IPsNFU started drinking a half year earlier (14.3 versus 13.8). Similarly, IPsNFU began drinking alcohol on a regular basis one year earlier than IPsFU (19.7 versus 18.7 respectively).

Quantity and frequency of alcohol use are important variables in planning treatment. Both sets of IPs would be considered to be severe binge drinkers (meaning they usually consume more than three drinks per occasion: 6.7 and 8.6 respectively). While the IPsNFU drank the most number of drinks, the difference across the two groups of IPs was not statistically significant. About 30% of all IPs reported drinking alcohol two to four times a month (see Table 2).

Several questions were included in the intake questionnaire to determine whether or not the IP had ever participated in a Navajo religious ceremony, the age of first attendance, the last ceremony each IP attended, and the number of Navajo and Plains SLCs each IP had attended before the current jail sentence.

TABLE 1
Demographic and Cultural Variables for Men in Jail-Based Treatment (N = 190)

Variable	Inmate/Patients Followed-up (IPsFU)	Inmate/Patients NOT Followed-up (IPsNFU)
Age (on day of interview)		
Number interviewed	95	94
Range	18- 61	18- 64
Mean (SD)	30.8 (8.5)	29.5 (9.4)
Mode	36	20
<i>t</i> = 1.056, <i>p</i> = 0.293		
Educational attainment (%)		
Number interviewed	94	90
Less than high school or GED	54.3	43.3
High school graduate or GED	19.1	32.3
Schooling beyond high school or GED	26.6	24.4
$\chi^2 = 4.28$, 2 df, <i>p</i> = 0.118		
Marital Status (%)		
Number interviewed	91	90
Never married	40.7	41.1
Divorced	4.4	10.0
Living with person in common law relationship (previously divorced)	5.5	7.8
Widowed	1.1	0.0
Living with person in common law relationship (previously widowed)	2.2	2.2
Married and living with spouse	25.3	23.3
Married but separated from spouse	6.6	4.4
Married but separated from spouse and living with person in common law relationship	1.1	1.1
Separated from common law wife	5.5	5.6
Other	7.7	4.4
$\chi^2 = 4.56$, 9 df, <i>p</i> = 0.871		
Level of traditionality (%)		
Number interviewed	93	92
Not at all traditional	7.5	9.8
Medium	51.6	57.6
Very traditional	40.9	32.6
$\chi^2 = 1.43$, 2 df, <i>p</i> = 0.488		

Overall, the IPs had attended a mean of seven Navajo SLCs before starting the current jail sentence; however, even though SLCs are considered an important component of Navajo spirituality, 43% had not attended any Navajo SLCs. The IPsFU participated in twice as many Navajo SLCs as did the IPsNFU (9.5 versus 4.0 respectively) and this difference is statistically significant ($t = 2.15$, $p = 0.033$; see Table 3). The number of Plains Indian culture SLCs (the type most commonly offered in pan-Indian settings) attended before the current jail sentence by IPsFU was greater, with a mean of 6.1 versus 5.6 for IPsNFU. Again, over 50% of the IPs had not participated in a Plains SLC before coming to jail this time. When the number of Navajo and Plains SLCs are totaled, the data reveal that the IPsFU had

attended 50% more ceremonies than did the IPsNFU (a mean 15.8 versus 9.8 respectively).

One way to measure the IPs' level of "balance" was to query them regarding their feelings of relationship with the Navajo concepts of the mineral, plant, animal, and human worlds. The responses to these four questions were represented on a Likert scale with a range of 1 to 5, with 1 meaning little feeling and 5 meaning very deep feeling. Before receiving any form of treatment (Time1), almost all in the sample expressed medium to very deep feelings of attachment with each of these components of Navajo culture. Scores at the time of assessment were as follows: for the mineral world variable, the mean score was 3.7 (SD 1.175); for the plant world variable, the mean score was

TABLE 2
Measures of Drinking Behaviors by Men in Jail-Based Treatment

Variable	Inmate/Patients Followed-up (IPsFU)	Inmate/Patients NOT Followed-up (IPsNFU)
Alcohol consumed in home when IP was a child		
Number interviewed	36	25
Yes (%)	38.9	60.0
$\chi^2 = 2.64, p = 0.104$		
Age began drinking alcoholic beverages		
Number interviewed	88	82
Range	5- 23	5- 27
Mean (SD)	14.3 (4.2)	13.8 (4.1)
Mode	15	16
$t = 0.834, p = 0.406$		
Age began drinking regularly		
Number interviewed	87	80
Range	10- 35	11- 31
Mean (SD)	19.7 (4.9)	18.7 (4.3)
Mode	18	16
$t = 1.44, p = 0.151$		
Number of drinks usually consumed per occasion		
Number interviewed	84	76
Range	2- 36	2- 72
Mean (SD)	6.7 (5.3)	8.6 (9.4)
Mode	2	2
$t = 1.523, p = 0.130$		
Frequency of drinking (%)		
Number interviewed	83	85
At most, once a month	27.7	32.9
More than once a month	16.9	18.8
Two to four times a month	34.9	24.7
More than once a week	14.5	16.5
Daily	6.0	7.1
$\chi^2 = 2.12, 4 \text{ df}, p = 0.713$		

3.9 (SD 1.127); for the animal world variable, the mean score was 4.0 (SD 1.100); and for the human world variable, the mean score was 4.2 (SD 1.100). Across the two groups, the scores were almost identical. These scores reflect the degree to which each IP has knowledge of, and respect for, stones which are sacred in Navajo culture, knowledge of herbs used in healing, respect for domestic and wild animals, and for all individuals and the clan system. A low score for a particular IP on any one or all dimensions may mean that the IP has not been fully taught about these important aspects of Navajo culture, or may mean that the IP is under considerable stress over his fate. High scores would reflect a strong foundation in Navajo cultural and an internalization of traditional teachings. These measurements were taken at three different times: at the time of enrollment (Time1) into the DCSAT jail-based

treatment part of the project, after the SLCs in the WRJ (Time2), and at follow-up (Time3).

Past law-breaking behavior is often an indicator of future law-breaking behavior. The IPs have had considerable involvement with the criminal justice system; 94% had been in jail at least one time previously, and 26% had been in jail five times or more. Numerous researchers have found a link between alcohol or drug use and involvement in criminal activity. In the present sample, over 70% of the IPs were drinking or drunk on alcohol at the time of their index arrest. Sixty-seven percent of the IPs acknowledged that alcohol was a major factor in their arrest. Most IPs were serving time for multiple offenses; the mean number of offenses for the IPsFU was 2.3 while the mean for IPsNFU was higher at 2.9 offenses. Jail sentences for the index crimes ranged from 0 to 545 days, with IPsFU

TABLE 3
Measures of Ceremonial Participation Among Men in Jail-Based Treatment

Variable	Inmate/Patients Followed-up (IPsFU)	Inmate/Patients NOT Followed-up (IPsNFU)
Number of Navajo sweat lodge ceremonies attended before index jail sentence		
Number interviewed	73	86
Range	0-100	0-50
Mean (SD)	9.5 (22.3)	4.0 (7.3)
Mode	0	0
<i>t</i> = 2.151, <i>p</i> = 0.033		
Number of Plains sweat lodge ceremonies attended before index jail sentence		
Number interviewed	70	87
Range	0-60	0-53
Mean (SD)	6.1 (13.4)	5.6 (10.9)
Mode	0	0
<i>t</i> = 0.235, <i>p</i> = 0.815		
Total number of sweat lodge ceremonies attended before index jail sentence		
Number interviewed	69	83
Range	0-160	0-70
Mean (SD)	15.8 (31.6)	9.8 (15.3)
Mode	0	0
<i>t</i> = 1.526, <i>p</i> = 0.129		

having a slightly longer sentence (mean 138 days versus 131 respectively).

Interestingly, over 99% of the IPs had not received any form of substance abuse treatment (inpatient, residential, outpatient, or self-help) prior to their current stay in the WRJ. The intake data reflected minimal differences between the two groups of IPs. Analysis did reveal statistical significance between the IPsFU and IPsNFU on some of the variables. For example, the IPsNFU were more bicultural; on average, IPsFU attended twice as many Navajo SLCs before the current jail sentence; IPsNFU were less knowledgeable about how the forced relocations in the 1950s had impacted on members of their families; IPsNFU were more likely to feel that society was changing too fast; IPsFU tended to consume alcohol faster, which would result in higher blood alcohol concentrations; and IPsFU were two times more likely to have wives, girl friends or partners who also had problems with alcohol.

The Sweat Lodge Ceremonies—Experiential (Time 2) Data

Experiential data were collected from IPs soon after the completion of sweat lodge ceremonies. Questions were intended to describe some thoughts and feelings about the sweat lodge experience while being respectful of Navajo culture. Most IPs participated in at least one SLC; some

who had longer sentences participated in many SLCs. For a variety of reasons, experiential data were not collected from some IPs. Experiential data were available for 123 IPs. As with the intake data, the experiential data was divided into two comparison groups, IPsFU and IPsNFU.

The IPs were asked to rate how deeply the just-completed SLC touched their mind, body, and spirit. The IPs experienced very deep feelings. For the mind variable, the mean score was 4.6 (SD 0.7), and the modal score was 5. For the body variable, the mean score was also 4.6 (SD 0.7), and the modal score was 5. And for the spirit variable, mean score was 4.6 (SD 0.8), and the modal score was 5. There was minimal difference between the two groups, and accordingly, the data were not statistically significant. These data support the argument that IPs were fully engaged in the SLC and that their senses were touched by the information they learned during the SLC. Low scores could indicate the IP was not fully trained in his Navajo culture by his parents and others, or that the IP was discouraged by the length of his sentence, and these factors or other emotions were clouding his participation in the SLC. Encouragingly, the data showed balance across the three dimensions, which is a desired state.

IPs were asked to indicate the feelings they had during, or as a result of, the SLC which they had just

TABLE 4
Feelings During or as a Result of Sweat Lodge Ceremonies Among Men in Jail-Based Treatment

Variable	Inmate/Patients Followed-up (IPsFU)	Inmate/Patients NOT Followed-up (IPsNFU)
Feelings during or as a result of the SLC (%)		
Number interviewed	59	64
Feelings of cleanliness	83.1	90.6
Feelings of purity	62.7	71.9
Feelings of spiritual awareness	83.1	73.4
Feelings of goodness	86.4	95.3
Peace of mind	86.4	82.8
Feelings of peace	62.7	76.6
At peace with self	83.1	82.8
Feelings that IP could stop drinking	72.9	71.9
Other feelings	50.8	67.2
$\chi^2 = 2.74, 8 \text{ df}, p. 0.950$		
Selected comments about the first skill or knowledge learned in the SLC		
Number interviewed	59	64
"Control of self and emotion"		
"Learning how to pray/speak in front of others"		
"Learning how the mind works"		
Selected comments about the second skill or knowledge learned in the SLC		
Number interviewed	59	64
"Be humble"		
"History of the sweat lodge"		
"Why life is hard"		
Selected comments about the third skill or knowledge learned in the SLC		
Number interviewed	59	64
"More to life than drinking and drugs"		
"Coping with others"		
"Praying, holistic perspective, honesty"		

experienced. They did so by circling preprinted items and/or handwriting more personal responses on the data collection sheet. Those feelings and the percentage of IPs who indicated they had those feelings are listed in Table 4.

The IP must fully involve himself in the SLC to realize its benefits. IPs were asked to rate their satisfaction with their SLC participation on a scale of 1 to 5, where 1 meant not very satisfied, 3 corresponded to medium satisfaction, and 5 meant the IP was very satisfied with his participation. Analysis revealed that the IPs rated their SLC participation at a mean score of 4.7. A SLC typically consists of four "rounds" of instruction by the individual leading the SLC, accompanied by intense wet heat, prayer, and song. The entire ceremony takes about two hours. Only three of the IPs were not able to complete all four rounds. Completing all four rounds enhances the spiritual outcome. IPs were asked to identify the three skills or pieces

of knowledge they learned in the SLC which they felt would be most helpful to them. Navajo teachings, prayers, culture, and the like were common responses.

IPs also rated their relationship with the mineral, plant, animal, and human worlds. At Time 2, almost all of the sample expressed medium to very deep feelings of attachment with each of these components of Navajo culture. The mean scores following the SLCs were as follows: for the mineral world variable, the mean score was 4.47 (SD 0.7); for the plant world variable, the mean score was 4.47 (SD 0.8); for the animal world variable, mean score was 4.45 (SD 0.8); and for the human world variable, mean score was 4.56 (SD 0.8). These measurements were collected again during follow-up (Time3).

The experiential data (at Time 2) was the first opportunity to observe whether the SLCs were successful in helping the IPs get in touch with four aspects of their

Navajo culture (their view in terms of the mineral world, plant world, animal world, and human world) and thus bringing the IPs back into harmony and balance. There was improvement on all four of the dimensions as reflected in higher mean scores. There were only modest differences between the two groups of IPs on these four variables; however, the difference on the animal world variable was statistically significant ($t = 2.18, p = 0.031$).

Follow-up (Time 3) Data

Coauthors Louie Barton and Clayton LoneTree followed up on the IPs after they were released from the WRJ. While an arduous task, data were collected from about 50 IPs during the first follow-up cycle, and about 50 during the second follow-up cycle. The questionnaires were identical in content. These questionnaires included questions to determine if the IPs had been arrested by any police official—anywhere—since the IP was released from the WRJ; participation in SLCs since release from jail; whether or not the IP had constructed his own sweat lodge and/or had intentions to do so; the lasting effect of the knowledge the IP learned in the alcohol prevention classes in the jail; the IP's current feelings about his level of traditionality; whether or not the IP had participated in other traditional Navajo ceremonies; the benefits derived from those ceremonies; current marital status; level of family support and how the family has provided that support; current employment and satisfaction with one's job; use of tobacco, alcohol, and other drugs; prevalence of domestic violence; physical health; and reasons given by IPs for relapse. Thirteen IPs were followed up twice. However, to increase the potential for greater statistical power, these data were merged into a single follow-up data set. Where two follow-ups were completed, data from the earlier one were used for analysis.

A word of caution is directed to the reader here. A quick read will suggest improvements on many of the variables. However, the reader must keep in mind that questions relating to some variables were asked of IPsFU at follow-up but not at intake, and therefore, data collected at intake and at follow-up for the same variable were collected from two similar but different samples of IPs. The sample at follow-up is about 66% different from that at intake. Follow-up efforts began three months after an inmate's release from the WRJ. For efficiency of time and effort, the initial attempt to contact the IP was by letter, followed by a telephone call and then by personal visits to the home or place of employment. The IPs proved very difficult to contact, in large measure because of the vast distances on the Navajo Reservation. Via correspondence or telephone, or by personal visits to the individual's home, DCSAT staff made four attempts to follow-up with each individual before the case was closed.

At the time the intake data were collected, each IP was asked if he was likely to participate in SLCs after his release from jail. Follow-up data revealed that over half of

the men participated in one or more SLCs after release from jail. Individuals were also asked if they had access to a sweat lodge or if they planned to build one. Twenty percent of the IPs planned to construct a sweat lodge, another 20% already had access to a lodge, but a high percentage indicated they had no intention to build a sweat lodge. Some of the IPs (13%) intended to construct a sweat lodge in three months subsequent to their follow-up interview.

It was hoped, of course, that the IPs would continue to participate in traditional Navajo ceremonies after their release from jail. A good many of the 92 IPsFU had participated in one or more Navajo ceremonies (e.g., a sing, a prayer, or Native American Church ceremony) following their release from jail. Some of the IPs provided concrete examples of how those ceremonies contributed to their wellness.

An important source of support for individuals following alcohol or drug treatment is a stable marriage. The majority of individuals (56%) had no change in their marital status after release from jail. Social support can be measured in the size of one's family as well as by the level of support the respondent feels he has received from his family in helping him deal with the problem(s) which caused him to be incarcerated in the WRJ this last time. At follow-up, these IPs rated their family's support at seven on a scale from one to 10. Family members were helping the former inmate/patient by being available for discussion, helping with prayers, or offering words of encouragement. For recovery to last, one generally must be surrounded by family and friends who are supportive of behavioral change. However, these same individuals may be very powerful factors in inhibiting change or recovery. Ninety-two percent of the IPs were surrounded by at least some friends who drank alcohol.

Employment status was measured and revealed that a third of the IPs were not working before going to jail, and were still not working at follow-up. The next largest subsample (27%) started a new job, and the other largest subsample (21%) lost their old job and were looking for a new job. IPs who were employed rated their job satisfaction at two on a scale of one to five.

The follow-up questionnaire included another measure of how much and how often the individual has been consuming alcohol since his release from jail. The 91 IPs who participated in follow-up reported drinking a mean of four drinks per occasion, and the majority were drinking one time a month. A few of the men reported drinking substantial amounts of alcohol with each drinking episode. The pattern among those drinking alcohol was to drink between 6 PM and bedtime. Small numbers of IPs reported drinking early in the morning and between noon and 6 PM.

Eight questions explored whether or not domestic unrest or violence has occurred in the IP's family since his release from jail. Responses to these questions suggest

some domestic unrest was continuing. Some of these events occurred when alcohol was a factor.

The follow-up questionnaire included some questions to obtain self-reports about what other drugs the IP was currently using. As at intake, the IPsFU were not using many other drugs at all. A few men in this sample were smoking cigarettes or chewing smokeless tobacco, using peyote outside of Native American Church ceremonies, sniffing lacquer thinner or paint solvents, or drinking "Ocean," a combination of Listerine mouthwash and water, Lysol and water, or Aquanet hairspray and water. "Ocean" is often consumed on Sundays when bars and package stores are closed in McKinley County, New Mexico; it is popular at other times as well because of its low cost. While not a serious problem, these other drugs deserve continued attention by Navajo health officials.

The follow-up questionnaire collected more information about each individual's feelings about his relationship with the mineral, plant, animal, and human worlds. On each of these measures, the IPs rated their relationship with these aspects of Navajo culture at around four on a scale of one to five.

As at intake, three questions explore each IP's physical health status. Only a couple of the individuals had experienced medical problems in the past 30 days, and a few were "slightly" or "moderately" bothered by those medical problems. Overall, this small sample of individuals was feeling "very good" on the days that the follow-up data were collected.

The next-to-last question on the follow-up questionnaire attempted to gain some perspective about why people relapse. The individuals gave a variety of responses ranging from marriage problems to no employment, to not enough teachings from elders, to needing more counseling in traditional ways, to reflecting on the hopelessness of one's living conditions; some commented about the many obstacles and hard times these men were experiencing.

Finally, the last question asked what specific help the individual needed from his family, chapter, or the Navajo Nation. Again, a range of responses were provided and included: good counseling, a lot of trust and support, a new home, and more financial resources for DCSAT to be able to assist with the conduct of ceremonies were all mentioned.

Treatment Outcome Analyses

Treatment can help the patient make improvements in a wide range of dimensions, from the personal, familial, job, medical, and legal, to mental health in general and substance abuse in particular. Follow-up data were collected from a bit over half of those originally enrolled in the jail-based treatment study. When those data are "paired" (Time 1 to Time 2 to Time 3 or Time 1 to Time 3) the number of IPs who provided answers on some measures drops to a sample size which is so small as to adversely impact on statistical significance. Data revealed that 47% of the IPs

had been rearrested at some point in the study. Virtually all of the arrests were for alcohol-related offenses. Two other IPs died from alcohol-related circumstances. Another important variable concerns the quantity of alcohol consumed by the IPs when they drank. The data show that the IPsFU were drinking about one and one half drinks less than before the intake data were collected (5.4 versus 6.8), however, this drop is not statistically significant.

World view data were analyzed for 43 IPs. Analysis revealed improvement immediately after the SLCs and then a falling off of the benefit (of the SLCs) at the time the follow-up data were collected. This is a common occurrence. For comparisons concerning IPs relationships to the mineral world, animal world, and human world, the improvement from Time 1 to Time 2 was statistically significant ($p = 0.018$, $p = 0.005$, and $p = 0.007$ respectively). Analysis using the Wilks test also reveals that the data were statistically significant across all three measures (Time 1 to Time 2 to Time 3) for relating to the animal world and human world ($p < 0.02$, and $p < 0.03$ respectively). Aside from statistical significance, for all four measures, the values at follow-up were better than at baseline.

Data pertaining to the level of social support given to the IP by his family before going to jail and at follow-up showed a nearly significant increase in the mean social support score, from 6.5 to 8.3. On five measures pertaining to domestic violence, one of the variables revealed improvements that were statistically significant ($\chi^2 = 4.714$, $p = 0.030$). Those data revealed that the IP was less likely to hit or throw things first, regardless of who had started an argument. Analyses of medical status data showed improvements on all three variables (number of days experiencing medical problems in 30 days preceding data collection; degree to which bothered by those medical problems in the 30 days preceding data collection; and feelings of physical wellness). An improvement from a mean of 5.8 to 7.8 (on a 10-point scale) was statistically significant (paired t -test, $t = 3.16$, $p = 0.003$).

Many IPs continue to surround themselves with risky individuals. Admittedly, changing one's circle of friends is difficult, but not impossible. Some positive improvement was noted in employment status. There was substantial improvement in marital status, and the data overall were highly statistically significant ($\chi^2 = 108.127$, 45 df, $p = 0.000$). The treatment outcome data reviewed in this subsection were mixed. Most of the data showed improvement, however only a few of the analyses are statistically significant.

DISCUSSION

Data were collected from the Spring of 1996 through the Spring of 1999 from 190 men. These IPs provided information at intake on a broad range of questions which the research team felt were important in understanding the

problems these men were having with alcohol and other drugs. Other questions were drawn from the extant and fertile literature about Navajos and substance use and abuse.

Experiential data were collected from 123 IPs after SLCs. Several cultural variables showed improvement in the IP's world view following the SLCs. Obtaining follow-up data posed a considerable challenge and resulted in the collection of follow-up data from only a little over half of the enrolled IPs. Improvements were noted for 18 of 19 variables that were measured at baseline and at follow-up; however, on only five of those variables were the changes statistically significant. Of primary importance, analyses revealed a decrease in the number of drinks consumed in drinking sessions from a mean of 6.7 drinks to a mean of 5.3 drinks. While an improvement, 5.3 drinks per drinking session is still at a level that is considered (in the literature) as problematic. The prevalence of the use of other substances

was generally low at baseline and at follow-up. Forty-seven percent of the IPs were rearrested at some point during the study.

SLCs have been an integral part of Navajo culture for hundreds of years as a treatment modality or for use in conjunction with other therapeutic efforts. The DCSAT staff utilized SLCs as a modality of treatment in its jail-based treatment component of the project. The authors believe that this is the first time that these kinds of data about the sweat lodge experience have ever been collected and analyzed statistically. At best, because of the relatively small sample size, limited outcome data, and absence of a proper control group, this study can only be considered a start in providing empirical insight into the traditional ways of Native Americans. Further research is needed to advance what was learned in this study.

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