

## AMERICAN INDIAN AND ALASKA NATIVE SUBSTANCE ABUSE: CO-MORBIDITY AND CULTURAL ISSUES

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*Abstract: The devastating impact of substance abuse on American Indians and Alaska Natives (AI/ANs) is reviewed with an emphasis on psychological and physical effects. Co-morbidity of substance abuse, trans-generational trauma, Post-Traumatic Stress Disorder, and depression among AI/ANs is also discussed since each condition may cause, impact, and/or exacerbate the others. The Medicine Wheel, one respected and accepted treatment approach developed by AI/AN communities, is described in detail since it helps address all of the co-morbid issues discussed.*

### Diversity and AI/AN Nations

Although AI/ANs are reportedly less than 1% of the total U.S. population, they comprise over 280 separate cultural groups consisting of 478 tribes (Liepman, et al., 1996). While the research literature frequently reports that alcohol abuse and its consequences are the primary health problems faced by AI/ANs today, one must remember that the patterns of substance use vary widely from group to group and that research has been conducted with only a limited number of AI/AN nations. Furthermore, the specific issues related to the cultural and individual history of each person must be considered as research findings may vary for that particular individual. It is also important to emphasize that substance abuse is only one of many problems experienced by a number of AI/AN Nations. As substance abuse progresses, however, it may become an all-encompassing disease. Substance abuse and its consequences may be seen as a cyclic result and cause of trans-generational trauma, depression, poverty, and a powerful destructive force in the lives of individuals, families, and communities.

This paper will review some of the research on substance abuse and co-morbidity in the general population along with similar research conducted among specific AI/AN groups. Deloria (1995) has clearly defined the problems related to scientific research and how it is frequently not applicable to AI/ANs. Therefore, in this paper an attempt will be made to maintain an awareness of the heterogeneity among AI/AN nations and an understanding that research methodology cannot adequately explore the depth of these issues in their lives.

### Substance Abuse Prevalence and Patterns

Prevalence rates of alcohol abuse among adults in AI/AN Nations may be unreliable due to measurement error and stereotypes associated with alcohol use. However, we do know that death related to alcoholism is higher for American Indians and Alaska Natives than for any other ethnic category (Shalala, Trujillo, Nolan, & D'Angelo, 1996). Young (1988) reported that 75% of all AI/AN deaths can be traced to alcohol and that 80% of suicides and 90% of homicides have alcohol as a factor. In the general U.S. population, males abuse alcohol more frequently than women. Among AI/AN Nations, alcohol mortality is greater among men than women (Shalala, Trujillo, Hartz, Skupien, & D'Angelo, 1997).

Although the use of non-alcoholic substances is generally less for women than for men (Kandel, Davies, Karus, & Yamaguchi, 1986), it is associated with crime among women as well as among men (Lex, 1996). However, when women have alcohol problems, they are at increased risk for polydrug use (Lex, 1996). A study of AI/AN adolescents in treatment for substance abuse showed that females were more likely than males to use cocaine and amphetamines, and they reported using more total substances than males (Novins, Beals, Shore, & Manson, 1996).

Comparing AI/AN groups in several urban and rural settings, Weibel-Orlando (1986-1987) found that women tend to drink less than men. In addition, women in urban settings were found to drink less than women in rural settings, providing further evidence for potential ecological influences on drinking behavior.

Regarding substance abuse among AI/AN youth, Swanson, Bratrude, and Brown (1971) reported several case studies of chronic alcohol use among AI/AN children ages 2–16 in one northwestern tribe, and Sherwin and Mead (1975) reported a case of a nine-year-old AI/AN with delirium tremens. Recently, one of the authors of this paper conducted an informal survey of 20 Substance Abuse Counselors from two southwestern tribes and found that most of their clients started regular abuse of substances such as alcohol, marijuana, and inhalants at age 10 or 11, many by age 7 or 8, and no counselor would be surprised to hear a client report that they had regularly abused substances at age 5 (P.S. Nye, personal communication, February 9, 2000).

Case studies are supported by several survey studies. Rebach (1992) found that White and AI/AN youth have the highest lifetime and annual prevalence rates and the highest rates of heavy use of alcohol among the major U.S. ethnic categories. May (1986) has reported that 50% - 90% of AI/AN youth, depending on their tribe, have experimented with alcohol. There is evidence of substance abuse related mortality in the 5–14 year old age range of AI/AN youth (Trujillo, Nolan, McCloskey & D'Angelo, 1996). Another survey study reported by Beauvais, Chavez, Oetting, Deffenbacher, and Cornell (1996) examined substance use and violence among students in good and poor academic standing and dropouts by ethnicity and gender. The lack of interactions between ethnicity, gender, and academic status on use of any drug indicated that, regardless of gender and ethnicity, differences in drug use among dropouts and the other groups are basically the same. The significant effects of ethnicity with use of specific drugs indicated that American Indian youth had higher rates of inhalant use only. Across all ethnic and academic status groups, greater numbers of males were heavily involved in drug use than females. Clearly, more research is needed regarding the prevalence of substance abuse among AI/AN youth. Since use in childhood or adolescence may be related to chronic use and abuse in adulthood, it is important to examine prevention and early intervention methods in our work with AI/AN youth.

Although frequently overlooked, some studies have verified that there are both abstainers and heavy drinkers among AI/ANs, with fewer numbers of those who drink in moderation (Heath, 1989). Other studies have shown that approximately 50% of abstainers had been heavy drinkers when they were younger. This pattern of “maturing” out of drinking is more common for women than for men, and sometimes occurs when family responsibilities begin (Lemart, 1982; Leland, 1978). In a study of 174 Navajo women and men (May & Smith, 1988) with an age range of 16–60+ years and of which 51% were women, 64% of the men and 40% of the women reported drinking. Drinking peaked in the 20–29 year age group with 80% of the men reporting drinking compared to 52% of the women in that age range. Drinking declined with age to 22% of the men and none of the women drinking at age 60.

Other studies with non-AI/AN groups have indicated that marriage consistently reduces alcohol consumption among both young women and men (Fillmore et al., 1997). Differences between men and women do occur in risk of alcohol abuse and are related to marital status. Young men who have never been married drink more per occasion than women who have not been married. However, when young women are separated or divorced, their consumption of alcohol per occasion increases more than young men's (Fillmore et al., 1997).

May (1995) determined that the drinking pattern among some southwestern AI/AN groups is bimodal, with a high proportion not drinking at all and another proportion drinking heavily. In other words, among the

group that drinks, there are a high proportion of heavy and abusive drinkers. The heavy drinkers are likely to be part of a subculture that engages in long binges that lead to very high blood alcohol levels over several days. Women in the heavy drinking subculture are frequently stigmatized and socially isolated, which sometimes leads to further entrenchment of heavy drinking and contributes to a high frequency of Fetal Alcohol Syndrome (FAS), alcohol related birth defects (ARBD), and alcohol related neurological defects in birth.

Individual and cultural attitudes regarding substance use also influence rates of use and associated problems. Historically women's drinking behavior has been associated with deviance, abnormality, and "evil" in comparison to the drinking practices of men. Women's drinking has been linked to prostitution, promiscuity, and abnormality. It has also been seen as a means by which women could move away from their traditional feminine roles (Fillmore et al., 1997). As we consider gender issues related to substance use, we cannot ignore the impact of gender role stereotypes and the history of cultural perceptions of women's drinking behavior. Research regarding gender roles, substance use, and AI/AN women are extremely rare. There is some research that considers the relationship of women's need to cope with others in her family who use alcohol and has shown that AI/AN women tend to have no alternatives but to passively adjust (Leland, 1978). This may be closely associated with more recent findings showing that AI/AN women who feel they must fit into traditional female roles are significantly more depressed than those who view themselves as androgynous (Napholz, 1995).

### Physiological Effects of Substance Abuse

Sex differences are evident in the physiological effects of substance abuse, with most studies focusing on the effects of alcohol. Some research has shown that the drinking levels of women are increasing and are becoming more similar to those of men (Mercer & Khavari, 1990). This potential increase in consumption makes it especially important to consider the impact of heavy drinking on women, especially since some research indicates that women may have a greater susceptibility to the development of alcohol-related medical disorders than men. For example, women develop cirrhosis, gastric ulcers, cardiomyopathy, and brain impairment at the same rate or sooner than men despite lower lifetime levels of alcohol consumption (Lieber, 1997; Rabinovitz, Van Thiel, Dindzans, & Gavalier, 1989). Some researchers attribute women's vulnerability to the medical consequences of alcohol to their higher blood alcohol concentrations (Wilsnack, 1995). Overall, there appears to be an increased "bio-availability" of alcohol in women, and this may have a medical impact on women at all levels of alcohol consumption (Lieber, 1997).

Pre-menopausal women have less alcohol dehydrogenase (an enzyme that oxidizes or breaks down alcohol) in their gastric lining and therefore may initially have higher concentrations of alcohol in their bloodstream. Men's gastric alcohol dehydrogenase decreases with age, while women's does not (Lieber, 1997). Although women have an initially higher blood and tissue concentration of alcohol per unit of alcohol than men, women are able to clear the alcohol from their bodies more rapidly. However, alcohol may increase estrogen-related hormones such as estradiol (Wilsnack, 1995), and the higher estrogen concentration caused by alcohol, combined with the high tissue concentrations (even for a relatively short period of time), may have a synergistic effect on body tissues, resulting in more devastating physical damage sooner in women than in men (Lieber, 1997).

The oxidation or breakdown of alcohol results in an increase in the metabolic co-factor NADH (reduced nicotinamide adenine dinucleotide or nicotinamide adenine dinucleotide plus a hydrogen atom from alcohol), which results in several metabolic and hormonal changes. Increased NADH not only inhibits gluconeogenesis (the formation of blood glucose from amino acids), which may result in alcoholic hypoglycemia but also causes an increase in uric acid, which may cause gout and a decrease in testosterone production. Men with cirrhosis or other hepatic disease may no longer have the capacity to metabolize or breakdown estrogens to maintain the normally low level of estrogens found in the male body. The result of a relative decrease in male hormones and a relative increase of female hormones is the "feminization" of the male body: gynecomastia (breast development), less body hair, and a decrease in the size of male genitalia. In addition, there may be decreased libido and impotence. Alcohol also causes endocrine abnormalities in women, including menstrual irregularities, amenorrhea, infertility, and decreased libido (Project Cork Institute, 1989).

There is minimal research delineating any genetically related physiological differences between AI/AN and other ethnic groups' metabolism of alcohol (Long et al., 1998). These studies show some evidence for genetic linkage to alcohol dependence (Long et al., 1998) and there are some ethnic differences in the enzymes necessary for the metabolism of alcohol that most likely have a polygenic basis (Gill, Eagle Elk, Liu & Deitrich, 1999; Novoradovsky et al., 1995; Reed, 1985; Wall, Garcia-Andrade, Thomasson, Carr, & Ehlers, 1997). However, more research is needed, as the meaning of these studies is very unclear.

Use of cocaine, marijuana, and opiates has been associated with female reproductive problems such as amenorrhea, anovulation, and spontaneous abortion. The effects of alcohol abuse on a fetus are well substantiated. However, the effects of substance use on reproductive capacity in general needs to be examined further in conjunction with the influence of nutrition and trauma (Lex, 1996).

Fetal Alcohol Syndrome (FAS) presents a unique physiological effect of alcohol in women during pregnancy. It is important to remember that alcohol crosses the placenta freely, so when the mother drinks the developing baby also drinks, and alcohol may destroy the tissues of the developing fetus resulting in: a) a spectrum of neurological sequelae [ranging from learning disorders to mental retardation], b) a characteristic facial dysmorphism [flat mid-face, thin upper lip, small chin, short palpebral fissures (eye openings), epicanthal folds (folds of skin at the inner eye opening), and ear anomalies], and c) growth retardation, including the baby's length, weight, and head circumference. Alcohol also is available in mother's breast milk, so when a breastfeeding mother drinks the baby drinks too and further damage may occur (Mitchell, 1993).

Cocaine use by the mother during pregnancy may result in fetal microcephaly, growth retardation, fetal high blood pressure and stress, risk of stroke, and even fetal demise. At birth, a baby who has been exposed to cocaine during gestation may have cocaine intoxication or withdrawal symptoms, cardiovascular dysfunction, irritability, tremors, jitters, inconsolability, increased risk of seizures, abnormal sleep patterns, and a much higher risk of SIDS. There are important implications for the increased risk of trauma and neglect for such potentially "difficult" babies born to addicted mothers (Mitchell, 1993).

Mothers actively addicted to opiates have increased risk of fetal death and put the developing baby at great risk for HIV as well as other STDs. Babies born to opiate addicted mothers may have low birth weight, meconium aspiration, neonatal opiate withdrawal symptoms, and delayed effects such as restlessness, agitation, irritability, and poor socialization. It is probably best for mothers who are established on methadone maintenance to continue methadone at the lowest effective dose because they will be more likely to seek more consistent pre-natal care and have a decreased risk of HIV, STDs, and fetal loss. However methadone exposed babies may have low birth weight, neonatal opiate abstinence syndrome, thrombocytosis, hyperthyroid, and a rate of SIDS 3–4 times that of the general population (Mitchell, 1993).

As a protective factor for developing babies, it may be wise for men to consider that when their spouses or partners are pregnant, they could regard themselves "pregnant" as well. This mindset is important because if the male partner or spouse is alcohol/substance free, it may be much easier for the pregnant woman to remain alcohol/substance free as well—a tremendously important and effective prevention plan. There is also a need for research into the effects of paternal drinking and substance abuse on the sperm, which may contribute to fetal and infant morbidity and mortality as well (Passaro & Little, 1997).

Substance abuse may put individuals at higher risk for developing cancers. In both men and women, chronic heavy alcohol use is associated with a higher risk of nasopharyngeal, laryngeal, thyroid, esophageal,

melanoma, and hepatic (liver) cancers. Many studies have shown that women who abuse alcohol are at much greater risk of developing breast cancer (Lieber, 1997).

Finally, alcohol abuse has effects on sexual arousal and function in both men and women. At high levels of alcohol consumption, men self-report decreased sexual arousal, whereas women self-report increased sexual arousal (although this may be a result of a misinterpretation of unrelated physiological responses). Alcohol increases testosterone in women, but not in men, which may produce increased feeling of sexual arousal in women. Drinking alcohol may be interpreted as a sexual signal because potential sexual partners are more likely to engage in sexual activity if they have been drinking alcohol, and alcohol consumption is positively correlated with increased sexual activity. Under the influence of alcohol, sex may become a high-risk activity with individuals exposing themselves to the possibility of HIV, STDs, sexual assault, and pregnancy (Wilsnack, Plaud, Wilsnack, & Klassen, 1997).

Although most of the studies cited above focus on non-Native populations, the second author, and her AI/AN colleagues, have found them clinically relevant for AI/AN men and women clients. It would be useful if research were conducted on gender-related physiological differences with specific AI/AN Nations.

### Co-morbidity of Substance Abuse and Psychiatric Disorders

#### **Post-Traumatic Stress Disorder (PTSD)**

In our clinical work with southwestern AI/ANs, we have learned that the experience of chronic psychological trauma is intertwined with depression and alcohol and drug abuse. We see PTSD as the umbrella disorder that may cause, or at least exacerbate, the co-morbid problems of addictions, depression, and violence. There is extensive evidence that trauma frequently occurs in the lives of AI/ANs. According to IHS data from 1990-1992 (Shalala, Lee, Trujillo, Reyes, & D'Angelo, 1995), "accidents and adverse effects" at 15.1% of total mortality were the second leading cause of death among all age groups in all IHS cases. This is in comparison to the 1992 "U.S. All Races" data, which rated "accidents and adverse effects" as the fifth leading cause of death at 4.1% (p. 47).

Not only do potentially traumatizing events occur at an overwhelming rate in the lives of AI/ANs today, but also each generation has faced the impact of cumulative trans-generational stressors related to genocide, racism, poverty, death, and alcoholism. Historical trauma of much earlier generations may accumulate and affect the cultural and emotional strength of each Nation, leaving its people more vulnerable to using alcohol or other drugs as a means of coping. Thus, it is important to address lifetime trauma in the prevention and treatment of alcohol abuse

as well as the cultural and spiritual aspects of trans-generational trauma. Addressing issues of trauma in alcohol prevention and treatment programs for AI/ANs may enhance the beneficial programmatic effects (Gray, 1998).

Traumatic experiences often result in PTSD, which is believed to contribute to rates of substance abuse among some groups (Evans & Schaefer, 1987; Fullilove et al., 1993; Zweben, Clark, & Smith, 1994). Substance abuse, especially alcoholism, has been described as a common complication of PTSD (Blank, 1994). Substance abuse has been viewed not only as a behavioral response to childhood traumatization (Briere, 1992; McCann, Sakheim & Abramson, 1988), but also several studies have shown strong associations between substance abuse and sexual, physical, or emotional abuse. In a study examining histories of incest in participants in substance abuse treatment, Janikowski and Glover (1994) found 48% of their sample of both women and men reported a history of at least one incident of incest. Approximately 30% of their sample believed that there was a causal relationship between incest and the substance abuse problems they experienced subsequent to the incest. However, only 8% of the sample reported receiving any treatment regarding the incest during their treatment for substance abuse. A national survey on women's drinking (Wilsnack, Vogeltanz, Klassen, & Harris, 1997) found that a history of child sexual abuse was strongly related to drinking behaviors, such as intoxication, alcohol dependence symptoms, and other drinking-related problems. Their findings suggest, "women's experiences of sexual abuse in childhood may be an important risk factor for later abuse of alcohol and illicit drugs" (p. 268).

These studies conducted with non-AI/ANs are now being substantiated in other research with some southwestern AI/AN Nations. In a small study of adult AI/ANs in substance abuse treatment in the Southwest (Gutierrez, Russo, & Urbanski, 1994), 84% of the women and 56.5% of the men reported a history of emotional abuse. There were also gender differences related to the prevalence of physical and sexual abuse. The women in the study reported high rates of past physical abuse (74.1%) and sexual abuse (51.9%), while the men reported lower rates. For men in this treatment program, 26.9% reported a history of physical abuse, and 3.7% reported a history of sexual abuse.

In a recent study (Robin, Chester, Rasmussen, Jaranson, & Goldman, 1997) of a southwestern AI/AN group that was not selected for clinical or trauma history, the prevalence of PTSD was 21.9% ( $n = 247$ ). This rate is comparable to rates for groups experiencing severe and extreme events, such as survivors of mass shooting, major burns, and combat. Prevalence of PTSD in non-AI/AN non-clinical populations usually ranges from 1% to 9% (Norris, 1992). In this study (Norris, 1992), 81.4% of the subjects reported at least one traumatic event, and of those, one in four was diagnosed with lifetime PTSD. For men, the risk of developing PTSD was significantly greater for individuals with a history of multiple traumatic



events, which is consistent with other findings. Robin et al. (1997) suggest "the high prevalence of PTSD in this community is, therefore, more likely due to a high rate of exposure to trauma and the types of traumatic events than to any specific vulnerability to PTSD" (pp. 1585-1586).

As in previous national studies, there were strong relationships between PTSD and other psychiatric disorders, such as depression and substance abuse and dependence (Robin et al., 1997). Of the subjects diagnosed with lifetime PTSD, 83.3% were also diagnosed with at least one other lifetime psychiatric disorder. Women with PTSD were more likely to be diagnosed with a mood disorder, to have drug use disorders, and to be diagnosed with antisocial personality disorders.

There were no statistically significant gender differences in the prevalence of PTSD in this study (Robin et al., 1997). However, there were differences in the impact of specific events on men and women. Physical assault was the most predictive variable for PTSD in the women. Women who had been sexually abused as children (at age 15 or less) were more likely to receive a lifetime diagnosis or current diagnosis of PTSD than women who had not been sexually abused as children. For men, the most predictive factors of lifetime PTSD were a history of combat and having experienced more than 10 traumatic events.

As non-Native therapists experienced in working with AI/ANs, the authors feel that ultimately, such factors as gender, ethnic background, and personality type of the therapist may not be crucial factors in the therapeutic process as long as the therapist is skilled, kind, empathic, and professional. However, patients with trauma histories have varying degrees of hypervigilance (decreased trust, and increased defenses for self-preservation). So when such clients are initiating therapy, their preferences in this regard should be respected and provided for whenever possible. Therapist preference by AI/AN clients is an important aspect of the healing process that warrants further study.

### **Mood Disorders**

Since approximately 70% of the patients who use Indian Health Service (IHS) mental health services report drug or alcohol problems (Walker, Lambert, Walker, & Kivlahan, 1993), it is clear that general mental health is also related to alcohol/drug abuse and dependence among some AI/AN peoples. In a study examining psychiatric symptoms among AI/AN women with and without a history of alcohol dependence, Walker et al. (1993) found that women with such a history scored significantly higher on scales measuring obsessive-compulsive behaviors, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoses.

Although there may be a strong association between mental health and drug or alcohol problems among AI/ANs, results are mixed regarding

whether there is a higher prevalence of depression among some Nations than among non-AI/ANs. As we consider the issue of depression among AI/ANs, we must remember that it may be conceptualized differently within different cultural groups. In fact, the same words are seldom used to describe and interpret the similar physiological changes that occur across cultures. Furthermore, the social responses of others to so-called depressive symptoms usually vary (Marsella, 1980).

Recent research has examined rates of depression and factors associated with it in several AI/AN nations. These studies utilized measures of depressive symptoms and associated concepts that were created with non-AI/AN groups. However, they may provide new information that will be useful in the diagnosis and treatment of depression as well as allow the development of a database related to AI/AN nations. In a recent study of the relationship between childhood abuse and depression in young women of four ethnic groups in Arizona, including AI/ANs (Roosa, Reinholtz, & Angelini, 1999), it was found that the only predictor of depression was childhood physical abuse, not child sexual abuse. The authors suggest these results may be related to the potentially chronic nature of physical abuse. In another study of 104 southwestern AI/ANs at a primary care clinic (Wilson, Civic, & Glass, 1994), 8.9% met the criteria of major depression. This rate is similar to non-AI/AN clinic populations studied; however, it is important to note that a much higher percentage (20.7%) responded positively to questions related to specific symptoms of depression. This study also reported the prevalence of alcohol abuse (40%), trauma (37%), and assault (20%) within this small group.

In a unique study, Napholz (1995) examined how 148 professional AI/AN women in an urban mid-western setting characterized themselves in terms of sex role behavior (i.e., androgynous, sex-typed, etc.). Women who characterized themselves as androgynous had similar rates of depression (21.7%) as non-AI/AN professional women. However, women who were sex-typed (i.e., felt they had to fit into traditional female roles) had double the rate of depression (48%). The author of this study notes that it is important to examine the impact of the pressures of acculturation and multiple roles on the mental health of AI/AN women. There may be a type of synergistic effect between traditional and majority cultural demands that can increase the likelihood of depression for women.

In a larger study with 605 AI/AN college students (Beals, Manson, Keane, & Dick, 1991), 45% scored above the criterion for clinical depression on a self-report measure. There were no significant differences between sexes on their total depression scores, but women did report more "crying spells" than men. There were lower rates of depression reported in AI/AN adolescents in juvenile detention (10%) (Duclos et al., 1998) and in substance abuse treatment (more than 1/3) (Novins, Beals, Shore, & Manson, 1996), than among college age AI/ANs. The Novins et al. (1996) study also revealed a number of gender differences in that females reported

abusing more different types of substances than males and more emotional, physical, and sexual abuse. In addition, Dion, Gotowiec, and Beiser (1998) found no significant differences in the level of depressive symptoms between AI/AN and non-AI/AN children in the 2<sup>nd</sup> and 4<sup>th</sup> grades.

### **Suicide**

Although these studies do not clearly indicate a consistently higher rate of depression among AI/AN peoples than non-AI/ANs, there is considerable evidence that the rates of suicide are higher (Van Winkle & May, 1993) and may be related to alcohol abuse (Johnson, 1994). The age-adjusted suicide death rates per 100,000 in 1992-1994 for American Indians and Alaska Natives was 19.2, which is 70% higher than the U.S., all races, rate of 11.3 in 1993. As in non-AI/AN populations, American Indian males have a higher suicide death rate for all age groups in comparison with American Indian females (Shalala, Trujillo, Hartz, Skupien, & D'Angelo, 1997). One author (Strickland, 1997) has noted that the problem of youth suicide among AI/ANs continues to climb after two decades of work focusing on its reduction. EchoHawk (1997) has suggested that the high suicide rate may be related to historical and cultural factors that have weakened and fragmented tribal unity. A study examining protective factors among sexually abused AI/AN adolescents has highlighted the associations between sexual abuse and hopelessness, suicidal thoughts, and suicide attempts in both females and males (Dexheimer Pharris, Resnick, & Blum, 1997). Thus, the potential impact of substance abuse among AI/ANs, coupled with trans-generational, childhood, and current abuse may be a life and death issue worthy of more research.

### **The Medicine Wheel as a Treatment Modality**

One useful treatment approach for AI/AN substance abusers with co-morbid physical and psychological disorders may be the Medicine Wheel. The Medicine Wheel model differs from community to community and from family to family, and may be unfamiliar to some AI/AN communities. It is a useful tool that helps address the individual in a holistic manner with a focus on balance of the spiritual, physical, mental/emotional, and social/cultural aspects of the whole person. The Medicine Wheel is a simple, elegant circle with a cross bar in the center and may be enhanced by creative local artists. At each of the four directions—north, south, east, and west—an element of a balanced life is assigned. This differs from community to community, but the variations in assignments of the elements of balance to one of the four directions makes no difference. The Medicine Wheel is another creative, rich approach that is the hallmark of a healthy, balanced AI/AN approach to life.

It may be helpful to have substance abuse clients graphically demonstrate on the Medicine Wheel the extent of their wellness in each area by marking their status or progress from the inner circle to the outer rim in each of the four directions. Imagine the wheel spinning, blurring the aspects to an integrated whole; the client's Medicine Wheel drawing is a momentary snapshot of a dynamic process. The beauty of the wheel concept is that it doesn't matter which geographic direction is used to designate the aspects of life that are balanced; communities or programs create the Medicine Wheel that reflects their unique approach to life. It is the very opposite of the Cartesian model of mind/body split; rather it is a method of incorporating many life aspects into a balanced whole. Some activities or attitudes may not fit into rigid categories. The Medicine Wheel allows for a free-flowing, individual interpretation, which enhances the client's participation in staging themselves and planning their treatment. For example, running may be most meaningful for a client in any one of the four directions, or all four! The Medicine Wheel is a model of balance and wholeness in which all aspects of life blend into each other.

A client completing their Medicine Wheel must consider, discuss, and fill in or darken each direction from the center of the wheel to the outer rim in order to display the relative health in that life aspect. In the spiritual direction, for example, the individual may gauge their spiritual life in regard to their participation in activities that feed their spirit such as art, music, drumming, singing, prayer, humor, and gratitude. In the direction of the physical, one might illustrate the extent to which they are clean & sober, engage in preventive medical care, exercise, rest, sleep, and maintain a healthy diet. The social/cultural aspect may be measured by the individual's participation in healthy social activities; the quality of relationships with significant others, family, and community; school/work habits and performance; and knowledge of their culture and participation in ceremonies including tribal, church, or family traditions. Health in the mental/emotional realm may be measured by serenity, joy in their relationships and work, active participation in therapy, respect for self and others, stability of their mood, and their ability to "let go" of inevitable life irritations.

The Medicine Wheel, then, can provide a visual picture of an individual's wellness status and need for balance. The Wheel reminds the provider and the individual client to incorporate the whole person in their journey of wellness. If treatment is to be successful, recovery from the ravages of substance abuse in AI/ANs must address the whole person, their historical intergenerational trauma, the spectrum of additional traumas, all varieties of psychological pain, spiritual expression, the quality of relationships, the knowledge and practice of tradition and culture, physical health and strength, and education/employment. The Medicine Wheel is a clever AI/AN visual device that can be used to incorporate all these vital aspects into treatment. It may be used as a comprehensive staging tool, a strengths/needs list, a goal list, and a treatment plan all in one.

## Conclusion

The results of the holocaust experienced by AI/AN peoples during the past five centuries includes ravaged communities, destroyed families, the brutal murder of hundreds of thousands of AI/AN people, organized attempts to erase rich cultures and beautiful languages, and trans-generational scars that affect AI/ANs to this day. The introduction of alcohol has had a devastating impact on their lives and has served to perpetuate the trans-generational trauma in a variety of forms.

There are a number of gender differences related to substance abuse including different physiological responses to alcohol use and different experiences of trauma. Women's bodies have a more sensitive response to the destructive physical effects of alcohol abuse than the bodies of men. Of particular note is the destructive impact of alcohol and substance abuse during pregnancy. AI/AN men who maintain sobriety may have a positive influence on their pregnant partner/spouse and possibly prevent the occurrence of Fetal Alcohol Syndrome or alcohol related birth defects.

Substance abuse is associated with high rates of sexual trauma, physical trauma and accidents, high death rates from physical complications of substance abuse as well as suicide and homicide, depression and grief, poor school performance, and low employment rates. AI/AN women are more likely to experience emotional, physical, or sexual abuse in their lifetime; AI/AN men are likely to experience a high rate of traumatic events as well. Trans-generational trauma can fracture the spiritual/cultural connections that may be protective against substance abuse, resulting in devastating psychological consequences.

It is crucial to examine historical experiences of the AI/AN client's nation, village, and family in order to understand the possible use of substances to self-medicate and soothe psychological pain and grief. All types of traumatic experiences may be related to substance abuse, and trauma and its aftermath (anger, grief, and depression) must be addressed when developing treatment approaches for AI/AN substance abusers. One traditional AI/AN approach has been described. It would be helpful to conduct research on the efficacy of various traditional healing methods in AI/AN communities, as well as other treatment and prevention modalities. In addition, there is a need for expanded research on ethnic differences related to the absorption, metabolism, and the physiological effects of alcohol abuse.

Understandably, many AI/AN Nations have historically been reluctant to take the role of research subject; the impetus for research such as this must come from AI/AN communities themselves. Research entities (whether Native or non-Native) must include tribal members in planning and implementation of all research activities. Moving from research to practical application of results in treatment and prevention is an integral part of presenting research opportunities to tribal councils. AI/ANs are

deeply invested in prevention, education, treatment, relapse prevention and wellness in their communities. AI/AN communities continue to conduct and participate in research they feel is beneficial to the wellness of their people now and for generations to come.

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#### Authors' Note

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