Preventing Substance Abuse in American Indian and Alaska Native Youth: Promising Strategies for Healthier Communities

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Substance abuse has had profoundly devastating effects on the health and well-being of American Indians and Alaska Natives. A wide variety of intervention methods has been used to prevent or stem the development of alcohol and drug problems in Indian youth, but there is little empirical research evaluating these efforts. This article is an overview of the published literature on substance use prevention among Indian adolescents, providing background epidemiological information, a review of programs developed specifically for Indian adolescents, and recommendations for the most promising prevention strategies currently in practice.

Substance abuse, particularly alcohol misuse, is consistently cited as one of the most critical health concerns facing American Indian and Alaska Native communities (Beauvais, 1996; French, 2000; Indian Health Service, 1977; King, Beals, Manson, & Trimble, 1992; Mail, Heurtin-Roberts, Martin, & Howard, 2002; U.S. Department of Health and Human Services, 2001; Young, 1988). It has had profoundly harmful consequences on both individual and societal levels, and it is widely believed that few Indian families remain unaffected, either directly or indirectly. The historical and political context surrounding alcohol use among American Indians and Alaska Natives is far too complex to address in the scope of this article (see E. H. Hawkins & Blume, 2002, for a more in-depth discussion of this topic). Although many communities have experienced social and cultural devastation that can be directly attributed to alcohol use, it is essential to note the large variance in actual rates of alcohol use and related problems experienced in Indian Country. Alcohol has and continues to be damaging to Native communities, yet there is a sizeable population of Native Americans who do not drink or who are nonproblem drinkers (Mail & Johnson, 1993; Myers, Kagawa-Singer, Kumanyika, Lex, & Markides, 1995). Although some degree of alcohol use is extremely common among American Indian youth, often it is not the first substance used or the primary drug of choice (Beauvais, Oetting, Wolf, & Edwards, 1989; Novins, Beals, & Mitchell, 2001).

This article is intended as an overview of the published literature on substance use prevention among American Indian adolescents, focusing on the most widely used drugs: tobacco, inhalants, alcohol, and marijuana. Because research focusing on Native Americans has had relatively little representation in mainstream psychological journals, the field as a whole is largely unaware of many salient issues. For this reason, this article focuses exclusively on this underserved and often at-risk population. Information on other ethnic groups is presented when it is useful for making relevant comparisons or providing context in terms of the general alcohol and substance use literature. It may appear that some of the research focusing on Native populations presented in this review is outdated or lacks comprehensiveness. However, it is important to bear in mind that this reflects the current state of the published research literature, emphasizing the need for more attention and resources to be directed toward the Native community.

The article is organized into three sections. The first section provides an introduction to the American Indian/Alaska Native population and background information on prevalence rates, patterns and consequences of use, and risk and protective factors for the substances most commonly used by Indian youth. In the second section, the published prevention outcome research literature found in the MEDLINE and PsycINFO databases is reviewed, and
selected programs that were developed specifically to reduce substance use among Indian adolescents are described. In the last section, recommendations are offered for the most promising prevention strategies currently in practice, and a recently developed substance abuse prevention program for urban Indian adolescents that incorporates these recommendations is introduced.

Substance Use and Abuse Among American Indian and Alaska Native Adolescents

Brief Introduction to Native Populations

According to U.S. population estimates, there are 2.5 million people who report their sole race to be American Indian/Alaska Native, and 4.1 million people who report being American Indian/Alaska Native in combination with one or more other races (U.S. Census Bureau, 2001b). American Indians are an incredibly diverse group, currently representing 562 federally recognized tribal nations and Alaska Native villages and corporations that range in membership from less than 100 to more than 350,000 (Bureau of Indian Affairs, 2002). There are additional tribes recognized only by individual states, and numerous tribes, bands, and American Indian villages that are not formally recognized by the federal government for political reasons. Federally recognized Native American tribes are located in 35 states within 10 distinct cultural areas. More than 200 tribal languages are currently spoken (Fleming, 1992).

A common stereotype depicts Native Americans as residing on remote reservations, well removed from the rest of America. In reality, the majority (63%) live in urban areas, and only 22% of Native Americans live on reservations and tribal trust lands (U.S. Census Bureau, 1993). The American Indian population is a young one, with a median age of 28.0, 34% being under 18 years old. In contrast, the median age for the overall U.S. population is 35.3, with 26% younger than 18 (U.S. Census Bureau, 2001a). About 10,000 American Indian and Alaska Native children today attend federal boarding schools. First started in the 1870s as a method of forcibly assimilating Indians into American society, the aim of boarding schools was to systematically “kill the Indian, save the man” (Richard Pratt, founder of the first off-reservation boarding school in 1879, as cited in Kelley, 1999, section 3. para. 1). Intergenerational historical trauma and grief has been the result. The mission of federal Indian boarding schools has greatly changed, and 52 remain open today (44 on reservations and 8 in off-reservation locations).

Although some similarities and commonalities among Native American groups do exist, there is significant heterogeneity among communities and individuals according to tribal-specific factors; degree of Indian ancestry or blood quantum; residential pattern; and cultural affiliation, identity, and participation. When considering the issue of substance use and misuse, it is important to take into consideration the diversity of American Indians and Alaska Natives and the implications it has for the development and implementation of prevention efforts.

Although the official terminology as set by the federal government’s Office of Management and Budget dictates that this collective group be referred to as American Indian/Alaska Native (Robbin, 2000), it is common practice to also use the terms American Indian, Indian, Native American, and Native. Most generally, these terms are used to identify American Indians and/or Alaska Natives. In contrast, when Alaska Native is used alone, it generally refers only to Indians of that region. In this article, these terms are used interchangeably, but every effort is made to distinguish between regional and cultural groups when appropriate. In working with Indians, community confidentiality is often considered equal in importance to the protection provided to individuals. Therefore, in most instances individual tribes and communities are not specifically referenced, and instead more general terms are used.

Prevalence of Substance Use

Large-scale national surveys provide comprehensive epidemiological data on alcohol, tobacco, and illicit drug use trends among youth. However, because of small sample sizes, they often do not include analyses of substance use patterns for American Indians. Fortunately, though, much is known about trends in Indian adolescent drug use because of research from three main sources. The first is school-based surveys conducted by the Tri-Ethnic Center for Prevention Research at Colorado State University (http://triethniccenter.colostate.edu). For more than 25 years, these anonymous surveys have been administered annually to a nationally representative sample of 7th through 12th graders living on or near reservations. Each year more than 2,000 youth respond to questions about their drug use, risk and protective factors, violence, and victimization. The second source of information comes from an examination of data from the Monitoring the Future (MTF) project, which has been in existence since 1975 (www.monitoringthefuture.org). Almost 45,000 adolescents and young adults from more than 400 schools across the country annually complete a survey about their substance use and related attitudes and beliefs. Wallace et al. (2002) analyzed data collected between 1996 and 2000 from approximately 64,000 high school seniors, thus sufficiently increasing the sample size of Native Americans to perform analyses of substance use trends. The last source includes reports that combine multiple years of data from the Substance Abuse and Mental Health Services Administration’s (SAMHSA) National Household Survey on Drug Abuse (NHSDA; www.drugabusestatistics.samhsa.gov). The NHSDA is designed to provide drug use estimates for all 50 states plus the District of Columbia over a 5-year sampling period. Every year the NHSDA is administered as an in-person interview to more than 68,000 people who are representative of the civilian, noninstitutionalized U.S. population age 12 or older.

Using these three national databases, plus supplementary research where available, prevalence data are reviewed for the substances most commonly used by American Indian and Alaska Native youth across the country, namely tobacco, inhalants, alcohol, and marijuana.

Tobacco

Tobacco is one of the most frequently used drugs by Native youth. According to data for 12–17-year-olds from the last available NHSDA, 27.5% of American Indians/Alaska Natives were current smokers, compared with 16.0% of Whites, 10.2% of Latinos, 8.4% of Asian Americans, and 6.1% of African Americans (SAMHSA, Office of Applied Studies, 2002). A study using MTF
data (Wallace et al., 2002) reported that among 12th graders, the 30-day prevalence of cigarette smoking for American Indians is 46.1%, as compared to 34.3% for the overall population. Native American 12th graders also have the highest rate of smoking half a pack or more of cigarettes a day, at 17.1% versus an overall total rate of 12.7% (Wallace et al., 2002).

LeMaster, Connell, Mitchell, and Manson (2002) used data from the Voices of Indian Teens Project to determine the prevalence of cigarette and smokeless tobacco use among Native adolescents. Their sample consisted of 2,390 youth ages 13 to 20 attending high schools in five Indian communities west of the Mississippi. Approximately 50% of the youth reported having smoked cigarettes, with 30% smoking "once in a while." Slightly less than 3% (2.8%) reported smoking 11 or more cigarettes a week, and only 1.2% said that they smoked a pack or more a day. The lifetime prevalence of smokeless tobacco use was 21%, with 3.6% reporting use 4–6 days a week and 6.7% reporting use every day.

Inhalants

Inhalants are commonly among the first substances used by Indian youth, often preceding the use of alcohol (Beauvais et al., 1989). Beauvais (1992a) reported that Indian youth living on reservations had higher lifetime inhalant use rates than did Indian youth not living on reservations or White youth. Among 8th graders, 34% of reservation Indians reported lifetime inhalant use, compared with 20% for nonreservation Indians and 13% for Whites. The 12th graders surveyed reported lifetime use rates of 20% for reservation Indians, 15% for nonreservation Indians, and 10% for Whites. Reservation Indians in the 8th grade also had the highest rates of 30-day inhalant use (15%), followed by nonreservation Indians (8%), and Whites (5%). Among 12th graders, nonreservation Indians had the highest rate (3%), with reservation Indian and White students using at the same rate (2%).

Native youth living apart from their families in boarding schools were also found to have extremely high prevalence rates, with 44% of students reporting that they had used inhalants (Okwumabua & Duryea, 1987). In contrast, a study conducted with urban American Indian adolescents found that 12.3% of the youth surveyed reported some lifetime inhalant use (Howard, Walker, Silk Walker, Cottler, & Compton, 1999).

MTF survey data reviewed by Wallace et al. (2002) revealed that American Indian 12th graders had the highest past-year prevalence rate for inhalant use at 9.4%, as compared with 12th graders of all other ethnic groups combined at 6.6%. The 30-day prevalence rate was also higher than all but one other ethnic group at 4.3%, in contrast to an all-ethnic groups rate of 2.4% (Cuban Americans were the only group with a higher 30-day prevalence, at 6.6%).

Alcohol

Estimates of the prevalence of alcohol use among American Indian adolescents vary significantly. On the basis of national data of American Indian students collected from 1975 to 1994, Beauvais (1996) reported that 15% of Native youth had consumed alcohol or used drugs at least once by the age of 12, 62% had been intoxicated at least once by age 15, and 71% of 7th through 12th graders had used alcohol during their lifetime. May (1986) reported that approximately one third of Native Americans had tried alcohol by 11 years of age. This latter rate is substantiated by another study, which found that 44% of 4th and 5th graders surveyed in the Pacific Northwest and Oklahoma (mean age = 10.3 years) had tried alcohol (Moncher, Holden, & Trimble, 1990). Among American Indian boarding school students, the lifetime prevalence rate of alcohol use was found to be 93%, with 53% of these considered to be at risk for serious alcohol abuse (Dinges & Duong-Tran, 1993). A longitudinal study following urban American Indian adolescents in Seattle showed that at Year 5 (mean age = 15.8 years) 41.5% of the youth reported having drunk alcohol to the point of intoxication (Walker et al., 1996).

Beauvais (1992a) compared drinking rates for reservation Indians, nonreservation Indians, and White students in the 8th and 12th grades. Nonreservation Indian 8th graders were more likely to report lifetime alcohol use (80%) than reservation Indian (70%) or White (73%) 8th graders. However, lifetime prevalence rates for 12th graders were highly comparable among these three groups. Reservation Indians in both the 8th and 12th grades were most likely to report having been drunk in their lifetime (49% of 8th graders, 87% of 12th graders), followed by nonreservation Indians (42% and 76%) and Whites (27% and 73%). A similar pattern was found for the 30-day prevalence of having been drunk, with 8th and 12th graders on reservations having the highest rate, followed by nonreservation Indians, and then Whites.

In 1998 the National Institute on Drug Abuse reported slightly higher rates of alcohol use for American Indian youth as compared with youth from other ethnic groups. They reported that 93% of American Indian and 87% of non-American Indian high school seniors had tried alcohol during their lifetime. The rates for past-month use were 56% and 51%, respectively. More recently, Wallace et al. (2002) reported a past-year alcohol use prevalence of 76.5% and a 30-day prevalence of 55.1% for American Indian 12th graders, rates similar to other ethnic groups. In comparison to all other ethnic groups combined, however, American Indian students had the highest rate of daily alcohol use (6.1% vs. 3.5%) and were the group most likely to have consumed five drinks or more in a row in the previous 2 weeks (37.0% vs. 30.8%).

Marijuana

Marijuana use is also significantly higher among American Indian and Alaska Native adolescents than other groups. Beauvais (1996) found that nearly 50% of Indian students in the 7th through 12th grades reported having used marijuana on at least one occasion. In another study (Beauvais, 1992a) he found that of the 8th graders surveyed, 47% of reservation Indians, 26% of nonreservation Indians, and 13% of Whites reported lifetime marijuana use. For 8th graders, 30-day prevalence was also highest for reservation youth (23%), followed by nonreservation (10%) and White youth (5%). Twelfth-grade adolescents living on reservations had higher lifetime (77%) and 30-day (33%) rates of use than did nonreservation Indian (58% and 21%) and White students (38% and 13%).

Data from the MTF surveys (Wallace et al., 2002) also show that American Indian teens had the highest annual (45.3%) and 30-day (29.6%) marijuana prevalence rates as compared with teens of other ethnic groups. In addition, they were more likely than teens of other ethnic groups to use on a regular basis. Almost 10%
of Indian 12th graders said that they use marijuana daily, compared with 5.4% of the total 12th grade population.

A study using data from the Voices of Indian Teens Project sampled 9th to 12th graders in seven predominantly American Indian schools in four western communities. Using a total sample size of 1,464 youth, Novins and Mitchell (1998) found that 55.7% of Native teens reported using marijuana at least once during their lifetime, and 40.0% had used marijuana in the past month. Among those adolescents who had used marijuana in the past month, 42.5% reported using 1 to 3 times, 27.5% reported using 4 to 10 times, and 30.0% said that they had used 11 or more times.

**Summary**

Epidemiological research indicates a high level of normative adolescent substance use. However, it suggests that much of this use is experimental or episodic in nature, with only a small minority of adolescents qualifying as heavy users. Within the Native American population, youth tend to initiate substance use at a younger age, continue use after initial experimentation, and have higher rates of polysubstance use (Beauvais, 1992a; U.S. Congress, Office of Technology Assessment [OTA], 1990). Substance initiation in Indian communities typically occurs between the ages of 10 and 13, with the onset for some individuals beginning as early as 5 or 6 years of age (Beauvais, 1996; Okwumabua & Duryea, 1987).

The stage, or gateway, theory has been proposed to explain the progression of adolescent drug involvement (Golub & Johnson, 1994; Kandel & Faust, 1975; Kandel & Yamaguchi, 1993; Kandel, Yamaguchi, & Chen, 1992; Weinberg, Radhert, Collier, & Glantz, 1998). This theory postulates that for most individuals, initiation of drug use follows a specific sequence: (a) legal substances, such as tobacco and alcohol; (b) marijuana; (c) other illicit drugs; (d) cocaine; and (e) crack. However, an adolescent’s use of substances at one stage does not necessarily mean that he or she will move on to the next stage. The applicability of stage theory to American Indian and Alaska Native adolescents has been questioned. One study found that among American Indian youth (ages 9–15) living in South Carolina, the use of alcohol predicted subsequent use of tobacco and illicit drugs, similar to what might be expected given the stage theory (Federman, Costello, Angold, Farmer, & Erkanli, 1997). However, Novins et al. (2001) found that among users of both alcohol and marijuana, approximately 35% reported using alcohol first, whereas 35% reported using marijuana first. Further, these researchers found that 75% of adolescents using substances from three or more classes reported patterns of use inconsistent with stage theory. They recommend that a modification which categorizes substances as initiating (tobacco, alcohol, inhalants, marijuana) or heavy (other illicit drugs) more accurately and appropriately captures the drug use trends of Indian youth.

**Patterns of Substance Use**

According to the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000), substance abuse is characterized by a maladaptive pattern of use leading to recurrent and significant impairment or distress. For example, criteria for alcohol abuse include problems at work or school due to drinking, or repeatedly driving while intoxicated. Substance dependence is a more severe disorder and is additionally marked by the development of tolerance or withdrawal symptomatology (American Psychiatric Association, 2000). Terms such as addiction or alcoholism generally refer to substance dependence disorders.

Whereas diagnostic criteria for adults are clearly defined, there is less standardization for the diagnosis of substance use disorders in adolescents. To a large extent, this is the result of significant developmental, physiological, and social differences between adult and adolescent substance use and misuse. For example, research indicates that young people drink less frequently than adults but that they tend to consume larger amounts when they do drink (Oetting & Beauvais, 1989; White & LaBouvie, 1989). Among youth, drinking and drug use is more likely to be associated with “partying.” This pattern decreases the likelihood that substance-abusing youth will experience tolerance or withdrawal symptoms, which are necessary criteria for a diagnosis of substance dependence.

May (1996) reported that both American Indian youth and adults frequently consume large amounts of alcohol in a short period of time, a style often referred to as binge drinking (commonly defined as five or more drinks in a row for males and four or more drinks in a row for females; Wechsler, Lee, Kuo, & Lee, 2000). Beauvais (1992c) has observed two distinct types of drinkers among American Indian adolescents. He reported that approximately 20% of American Indian youth in the 7th through 12th grades begin heavily using alcohol and other drugs at an early age and continue this use into adulthood. These adolescents are at high risk for lifelong problems with alcohol abuse and dependence. The second type of drinker, which is also estimated to account for 20% of American Indian youth, uses alcohol socially and recreationally. Drinking for this group is often experimental in nature and highly dependent on the environment. This pattern is less likely to lead to long-term problems.

It has been noted that in addition to using alcohol and other drugs at high rates, American Indian and Alaska Native youth often tend to use in ways different from other adolescent groups. Numerous studies have examined gender and regional or cultural differences. However, research findings often contradict one another, highlighting the complexities of making general statements about this very heterogeneous group.

**Gender Differences**

Within the general adolescent population, boys usually have higher rates of drug use, particularly higher rates of frequent use, than do girls. In particular, they tend to have higher rates of heavy drinking, smokeless tobacco use, and steroid use (Johnston, O’Malley, & Bachman, 2002). From his research using school-based surveys, Beauvais (1992c) reported that there does not appear to be a significant difference in alcohol use rates between American Indian adolescent boys and girls. Furthermore, it has been reported that American Indian male and female adolescents experience drinking problems at equally high rates (Beauvais, 1992c; Cockerham, 1975; Oetting & Beauvais, 1989), and in a sample of urban Native youth, gender may not have influenced which youth abused alcohol (Walker, 1992).
Regional and Tribal Differences

The NHSDA found no significant gender differences in cigarette smoking rates for American Indians and Alaska Natives, in contrast to data for other ethnic/racial groups which indicated that smoking rates were higher for female than male adolescents (SAMHSA, Office of Applied Studies, 2002). Similarly, LeMaster et al. (2002) found no gender differences in the rate of cigarette use but did find a significant difference in the use of smokeless tobacco between American Indian male and female adolescents (27% and 15%, respectively).

Inhalant use was roughly equal among boys and girls surveyed in the Voices of Indian Teens project (May & Del Vecchio, 1997). However, it was suggested that this might differ on the basis of the age of the participants sampled. A survey conducted with boarding school students showed that boys tended to begin experimenting with inhalants earlier than did girls. The peak period of risk for inhalant use for boys was between 10 and 11 years of age, whereas for girls it was between 12 and 13 years (Okwumabua & Duryea, 1987).

Novins and Mitchell (1998) reported that although there were no gender differences at low frequency of marijuana use, defined as using one to three times in the past month, boys were significantly more likely to use marijuana at a high frequency, defined as using 11 or more times in the past month (odds ratio = 2.37, 99% confidence interval = 1.52, 3.69). Further, it was found that low frequency marijuana use among girls was indicative of a more severe pattern of substance use than was low frequency use among boys. For both boys and girls, more frequent marijuana use was associated with the increased use of other illicit drugs as well (Novins & Mitchell, 1998).

Consequences and Correlates of Substance Use

Research shows that although American Indian teens may have lifetime alcohol use rates similar to non-American Indian teens, they tend to drink more frequently and to consume alcohol in larger quantities when they do drink. In addition, they are more likely to have tried tobacco, inhalants, and marijuana, and to use these substances on a regular basis. Furthermore, the age at which American Indian youth initiate substance use tends to be younger than what is found in other groups. These trends are likely to significantly impact the development of American Indian adolescents by interfering with the learning of age-appropriate behaviors and skills (Bentler, 1992). In addition, these trends place them at increased risk for participating in potentially dangerous behaviors and for experiencing acute negative consequences of use (May, 1982). Substance-abusing youth have a greater likelihood of suffering social and interpersonal consequences because of their violation of parental, societal, and legal norms.

Although most teenage substance use is believed to “mature out” (Kandel & Logan, 1984; Mitchell, Novins, & Holmes, 1999), early onset of substance use and problem drinking has been linked to a multitude of negative outcomes. Adolescent alcohol use is associated with a wide range of high-risk behaviors, such as driving while drinking (Beauvais, 1992b), delinquency and running away (U.S. Congress, OTA, 1990; Zitzow, 1990), and unprotected sexual activity (Rolf, Nansel, Baldwin, Johnson, & Bernaly, 2002). It is also associated with psychiatric distress, including concerns such as depression, conduct disorder, and suicide (Dinges & Duong-Tran, 1993; Grossman, Milligan, & Deyo, 1991; Manson, Shore, & Bloom, 1985; May, 1987; Nelson, McCoy, Satter, & Vanderwagen, 1992; O’Nell, 1992–1993; U.S. Congress, OTA, 1990); academic difficulties (Beauvais, 1996; U.S. Congress, OTA, 1990); and later problems with substance abuse (J. D. Hawkins et al., 1997; May & Moran, 1995).

Substance misuse is directly implicated in the disproportionately high morbidity and mortality rates found among American Indian teens. American Indian youth (ages 15 to 24 years) have an all-cause mortality rate 2.1 times higher than that of the general population (196.5 vs. 95.3 per 100,000 population) and 2.3 times higher than that of Whites, the group with the lowest rate (196.5 vs. 84.3 per 100,000 population; Indian Health Service, Office of Public Health, Program Statistics Team, 1999). Of the 10 leading causes of death for American Indian adolescents, at least 3 are related to heavy use of alcohol: accidents, suicide, and homicide (Indian Health Service, Office of Public Health, Program Statistics Team, 1999). In addition, the alcoholism death rate for Native youth served by Indian Health Services was 11.3 times higher than the combined all-races rate (Indian Health Service, Office of Public Health, Program Statistics Team, 1999). This statistic does not include alcohol-related deaths due to accidents, suicide, or homicide.

Risk Factors

Research suggests that the etiologic influences of American Indian adolescent substance use are similar to those found for other
ethnic groups. Higher levels of alcohol and drug use among American Indian youth can be attributed to poverty and extremely poor social conditions that have exposed them to significantly more risk factors, which may directly or indirectly lead to more alcohol and drug use (Beauvais & LaBoueff, 1985). Life stress is a demonstrated risk factor for substance use (Dick et al., 1993; King et al., 1992; King & Thayer, 1993; LeMaster et al., 2002; Wills, McNamara, Vaccaro, & Hirky, 1997), and adolescence is a period of time when stress pertaining to social, physical, cognitive, and academic growth is enhanced (Dick et al., 1993). As a result, youth are particularly vulnerable to developing potentially harmful methods of coping with stressors that arise within themselves, their immediate environment, or their cultural milieu.

**Intrapersonal Variables**

Factors rooted within an individual, such as beliefs and attitudes, tendency to engage in risk behaviors, and psychological distress, contribute to increased rates of adolescent substance use. Among American Indian teens, the perception that substance use is an indicator of adulthood has been suggested as an explanation for an increased tendency to use (Schinke et al., 1985). Similarly, positive expectancies of alcohol’s effects were predictive of higher rates of alcohol problems among urban American Indian teens (E. H. Hawkins, 2002).

High-risk behaviors and psychological distress potentially serve as both risk factors for and consequences of substance use. Inhalant users in a sample of urban American Indian youth exhibited higher rates of lifetime conduct disorder and alcohol dependence, more aggressive behavior, more sensation seeking, greater negative emotionality, and lower perceived self-worth than did nonusers (Howard et al., 1999). In another study, distressing life events of death and loss were linked to increased use of cigarettes and smokeless tobacco (LeMaster et al., 2002).

**Environmental Influences**

Environmental contexts (including community, family, and peer variables) have great impact on the development of substance use and misuse among American Indian and Alaska Native adolescents. These sources of primary socialization directly and indirectly communicate social norms and values. The community, which includes elders, schools, law enforcement, and health agencies, among other institutions, plays a vital role in the transmission of what is considered acceptable substance use behavior (Oetting & Donnemeyer, 1998). Youth learn which actions are tolerated or even sanctioned, as well as the consequences for engaging in behavior that falls outside the community’s norms.

Likewise, the family conveys powerful messages to youth regarding substance use. Adult models of substance abuse (LeMaster et al., 2002; Weibel-Orlando, 1984) and lack of clear-cut familial sanctions against substance abuse (Oetting, Beauvais, & Edwards, 1988) are associated with increased rates of use among youth. Some researchers have noted that drinking within families may be one way of maintaining a sense of cohesion and solidarity (O’Neill, 1992–1993; Spicer, 1997). Studies have also suggested that a lack of stability in the home (Garcia-Mason, 1985) and disorientation within family relationships (Albaugh & Albaugh, 1979) are risk factors for substance use.

During adolescence, peer influences may be as or more important than family variables in the development of substance use problems. Participation in positive peer clusters is less likely to lead to deviant behaviors, whereas antisocial peer associations and pressures can serve as risk factors for substance use (Oetting, Swaim, Edwards, & Beauvais, 1989).

**Cultural Factors**

Cultural epidemiologists have suggested that the stresses of forced acculturation, urbanization, and cultural disruption have increased the vulnerability of American Indian youth for developing psychological problems (Beauvais & LaBoueff, 1985; Kemnitzer, 1973; Spindler & Spindler, 1978). Among American Indians and Alaska Natives there is a historical and generational trauma that underlies this risk (see Brave Heart & DeBruyn, 1998, for a comprehensive discussion of historical trauma and grief). Many Indian communities share similar experiences of warfare and colonization, coercive methods of assimilation, loss of traditional land and customs, boarding school educations and abuses, longstanding struggles to maintain treaty rights, poverty, and high rates of unemployment and disease. These factors, plus many more that are tribe or community specific, are often viewed as risk factors for substance use, as tobacco, alcohol, and other drug use may offer a method of coping with these stressors.

Specific cultural factors that have been associated with increased substance use include ethnic dislocation (May, 1982; Oetting, Beauvais, & Velarde, 1982; Trimble, Padilla, & Bell-Bolek, 1987), acculturation stress (LaFromboise, 1988), alienation from the larger culture (Moncher et al., 1990), and an excessive amount of unstructured time on reservations, during which drinking is often a response to boredom (E. D. Edwards & Edwards, 1988). In addition, Whitbeck, Hoyt, McMorris, Chen, and Stubben (2001) have found perceived discrimination to be a risk factor for alcohol and drug use. In their study, 49% of fifth–eighth-grade students from three reservations in the upper Midwest reported experiencing significant discrimination. This was strongly associated with early onset substance abuse, a relationship that was mediated by adolescent anger and delinquent behaviors.

**Protective Factors**

Although risk is a widely understood and agreed upon concept, protection is not, and there has been little consensus on the definition and operationalization of protective factors (see Jessor, VandenBos, Vanderryn, Costa, & Turbin, 1995). Some define risk and protection as opposite ends of a single dimension. A protective factor, then, is the absence of or a low level of risk. Others argue that the concept of protection is orthogonal and extends beyond the mere absence of risk. These scholars contend that a protective factor is an independent variable that can have a direct effect on behavior and can also moderate the relationship between a risk factor and behavior (J. D. Hawkins, Catalano, & Miller, 1992; Rutter, 1987). Both definitions of protection are represented in the studies presented here.

**Universal Factors**

Among adolescents in the general population, protective factors include stable and supportive relationships with parents and proso-
societal adults, self-efficacy in social relations, bonding to conventional society, community resources, cultural involvement, participation in organized group activities, and involvement in religious activities (Barrett, Simpson, & Lehman, 1988; Elder, Leaver-Dunn, Wang, Nagy, & Green, 2000; J. D. Hawkins et al., 1992; Newcomb & Felix-Ortiz, 1992; Tyler & Lichtenstein, 1997). Comparatively little is known about factors that serve to protect Indian youth against the development of substance use problems. There is no compelling reason to believe that the factors listed here would not also be protective for Indian adolescents. Indeed, strong bonds with the family and school are believed to serve as protective factors against deviance, whereas peer associations can serve as sources for either prosocial or deviant norms (Oetting, Donnermeyer, Trimble, & Beauvais, 1998). In one of the few published studies of protective factors among American Indian youth, Le-Master et al. (2002) found that academic orientation served to lower the risk for cigarette smoking.

**Culture-Specific Factors**

Much is unknown about protective factors that are specific to the cultural and community context of Native Americans. Despite the strongly held belief in the positive power of Indian cultural identity and participation, research has yielded conflicting findings. For example, one study demonstrated that inhalant abuse rates were lower for youth who participated in structured activities such as traditional tribal activities and ceremonies (Thurman & Green, 1997). Similarly, Mason (1995) found that a positive culturally oriented self-concept was associated with lower rates of substance use. However, attendance at cultural events has also been linked to marijuana and cigarette use (Petoskey, Van Stelle, & De Jong, 1998), and in one study traditional orientation was highly correlated with problem behaviors such as getting drunk or high (Mail, 1997). In a sample of urban Native youth, increased report of alcohol-related problems was associated with identification with the “Indian way of life” (E. H. Hawkins, 2002). Still other studies have found no relationship between cultural identity and substance use (Bates, Beauvais, & Trimble, 1997).

There remains strong support for the idea that bicultural competence serves to decrease risk for substance misuse. *Bicultural competence* has been defined as the ability to alternate between one’s ethnic and White identities in response to contextual cultural cues (LaFromboise, Coleman, & Gerton, 1993). This capability is widely believed to be instrumental in helping Indian youth successfully negotiate potentially harmful situations by increasing positive coping skills, self-efficacy, and social support, factors that have been linked to positive outcomes in substance abuse treatment (Annis & Davis, 1991; Marlatt & Gordon, 1985; Rychtarik, Prue, Rapp, & King, 1992). A similar model is stake theory, which holds that identifying with, or having a stake in, both Native and mainstream cultures can serve as a protective factor against substance abuse (Ferguson, 1976; Honigmann & Honigmann, 1968).

Among many ethnic groups, positive outcomes in issues of health and adjustment, including addictive behaviors, are associated with higher levels of bicultural competence (LaFromboise et al., 1993). For Native adolescents living on reservations or tribal land, having a bicultural identity has been associated with increased social competencies, personal mastery, self-esteem, and social support (Moran, Fleming, Somervell, & Manson, 1999).

However, it is clear that further research is needed to clarify the role culture plays as a source of risk or protection for substance use problems in this population.

**Substance Misuse Prevention**

The recognition that substance use among American Indian youth often begins at an early age has resulted in a growing emphasis on prevention rather than treatment efforts. Research detailing epidemiology, etiology, and domains of risk and protection can provide the basis for developing prevention programs and identifying intervention targets. These preventive interventions are designed to reach children early and limit the initiation of substance use and/or the later development of substance abuse and related consequences.

**An Overview of Prevention Concepts**

Prevention services are widely characterized as primary, secondary, or tertiary (Caplan, 1964). Within the health field, primary prevention programs are aimed at reducing the incidence of a particular disorder or risk factor. Secondary prevention programs target early identification and treatment to reduce the prevalence of a particular problem. Tertiary prevention programs focus on reducing the severity or impact of an established condition. Because this framework assumes dichotomous categorization (i.e., present and absent), using this classification system often makes it difficult to distinguish between primary and secondary prevention. Instead, mental health and substance abuse problems tend to be conceptualized as spectrum disorders, with attention focused on the level and severity of functional impairment rather than the strict presence or absence of a disorder.

In 1994, the Institute of Medicine proposed a new model that divides the continuum of care into three categories: prevention, treatment, and maintenance. The prevention category distinguishes between three classifications of prevention programs: universal, selective, and indicated. In a universal program, specific individuals are not singled out for an intervention; rather, all individuals within a defined area or population are offered the service. Examples of this include high school health education classes and anti-smoking media campaigns. Selective prevention targets groups of individuals considered at higher than average risk because of the presence of one or more risk factors. A program designed for children of alcoholics or an after-school mentoring program for youth experiencing behavioral problems are examples of selective prevention. Indicated prevention programs are aimed at specific individuals who have already begun engaging in high-risk behaviors but who do not meet criteria for a substance use disorder. Examples of this kind of intervention might include adolescents screened for problems at school or a physician’s office, or those mandated to treatment. Selective and indicated interventions are also often referred to as forms of targeted prevention.

Universal and targeted prevention programs both have their advantages and disadvantages (Offord, 2000). Universal programs tend to cast a wider net and can, therefore, potentially influence more people. They also tend to be less stigmatizing, as no one individual is singled out for attention. However, they are often expensive, usually have a smaller effect on any one person, and
may have the greatest effect on those at lowest risk. Targeted programs have the potential advantage of efficiency, as available resources are directed only at the high-risk group. In addition, they tend to be more intensive and may have greater impact on an individual level. A common difficulty in indicated interventions, though, is the cost and commitment necessary to screen individuals to determine risk status. Furthermore, risk factors are usually fairly weak predictors of future pathology, so screening may not accurately target individuals in the most need. Finding the balance between sensitivity (the ability to accurately detect those who are at risk) and specificity (the ability to correctly identify those who are not at risk) often presents a challenge for clinicians and researchers.

**Prevention for American Indian Youth**

Universal, selective, and indicated substance abuse prevention programs are all commonly found in American Indian communities. Distinctions between different types of prevention are often blurred, however, as commonly the entire community is considered at risk and is the focus of intervention. Unfortunately, the majority of prevention efforts in Indian Country have not been rigorously evaluated for efficacy. In addition, specific details of these programs are not published or available in a manner that allows them to be easily shared with other communities. Moran and Reaman (2002) provided information on prevention programs that have not been published in the mainstream literature. Limited program information can also be found through SAMHSA’s Center for Substance Abuse Prevention (2003; see also Western Center for the Application of Prevention Technologies, 2002). While many of these programs have the potential for success in combating Indian adolescent substance abuse and for making valuable contributions to the development of prevention efforts in other communities, this article focuses on reviewing those studies that have been evaluated and published in peer-reviewed journals.

The principal source of information in this article comes from searches of the MEDLINE and PsycINFO databases. Information on qualitative findings has been included where relevant, although the emphasis here is on presenting quantitative outcome data. The programs reviewed tend to fall into two categories: those that target entire communities for change and those that focus their efforts primarily on individual behavior change.

**Community-Oriented Approaches**

Several researchers have suggested that programs that target an entire community rather than specific individuals may be more effective for the prevention and treatment of substance abuse in American Indian and Alaska Native adolescents (Beauvais & LaBouef, 1985; E. D. Edwards & Edwards, 1988; Gutierrez, Russo, & Urbanski, 1994; LaFromboise, Trimble, & Mohatt, 1990; Petoskey et al., 1998; Wiebe & Huebert, 1996). A community-based approach may be preferred for a variety of reasons. Some authors have described the inclusion of an entire community in the intervention as consistent with Native values and traditions, which stress collective decision making in resolving community or tribal concerns (E. D. Edwards & Edwards, 1988; LaFromboise et al., 1990). Others have emphasized the role that sociocultural factors play in the development of drug and alcohol abuse and argued that a more comprehensive approach is necessary to address risk factors at familial and community levels (Gutierrez et al., 1994). Most authors agree that whether a curriculum is intended to serve primarily individuals or larger groups, community support for the intervention is vital to the success of any treatment or prevention program (Beauvais & LaBouef, 1985; E. D. Edwards & Edwards, 1988; LaFromboise et al., 1990; Wiebe & Huebert, 1996).

Community empowerment is one approach that is community based in its theoretical underpinnings and has been used to develop substance abuse prevention for Native American youth (Petoskey et al., 1998; Rowe, 1997). Generally, this method utilizes multiple strategies to increase knowledge about drugs and alcohol throughout a community and to change community norms regarding use. Often the initial step in the community empowerment approach is the development of a core group composed of community members who serve as leaders, role models, and decisionmakers regarding the implementation of prevention strategies.

Petoskey et al. (1998) described the Parent, School and Community Partnership Program, a project that aimed to reduce alcohol, tobacco, and other drug (ATOD) use among Native American youth living on or near three reservations in northern Wisconsin and Minnesota. A major component of this program was the Red Cliff Wellness School Curriculum, a culturally focused, skills-based substance abuse curriculum that was designed to be implemented by classroom teachers in Grades 4 through 12. In addition, the project involved the following: (a) the training of a small group of community members to be leaders and facilitators regarding community health, (b) a community curriculum offered to all members and designed to increase community involvement and problem solving around ATOD issues, and (c) teacher training in the implementation of the school-based curriculum. Outcome variables such as past-month substance use; attitudes toward use and perceptions of harmfulness; and attitudes toward school, academic achievement, absenteeism, and cultural involvement were assessed prior to curriculum implementation, at the end of the program year, and at 1-year follow-up. Comparison data were provided by similar schools that had agreed to collect data during Years 1 and 2 in order to receive the curriculum in Year 3. Although past-month alcohol use increased for both groups at follow-up, the authors reported a significant two-way interaction of site and time, indicating some slowing in the rise in alcohol use for participants in the intervention group. At all three data collection points, students who received the intervention reported lower levels of past-month marijuana use. Past-month cigarette use increased for both groups over time; however, this outcome was not a specific target of the intervention. Although there were no significant differences in likelihood to accept alcohol from friends between groups, students from the intervention group were less likely to accept marijuana at 1-year follow-up. Interestingly, these authors also found that increased frequency of attendance at powwows was associated with increased use of substances. Cultural affiliation has often been perceived as a protective factor, yet this study found a sex difference in the relationship between Indian identity and substance use: Increased Indian identity was associated with decreased use in girls and increased use in boys.

Rowe (1997) described the Target Community Partnership Project, an effort that utilized the community empowerment approach to address substance abuse with a Native American tribe in
Washington State. Strategies used in this project included (a) creating partnerships among community members, professional services staff, and tribal departments; (b) implementing a process of ongoing training for the community around ATOD issues; (c) organizing community-wide alcohol- and drug-free events; (d) enhancing health, welfare, and youth services for those individuals with substance abuse or children affected by substance-abusing parents; and (e) advocating for new tribal policies restricting the use and abuse of drugs and alcohol. Several types of quantitative and qualitative outcomes were assessed over the course of approximately 4 years with adult and youth surveys conducted in the first and last years. Some of these included adult perception of harm from drugs and alcohol (as measured by an anonymous community survey), youth perception of harm from alcohol (as measured by a school survey), number of individuals referred to substance abuse treatment, number of families receiving services for alcohol and drug-related parenting problems, community perceptions of improvements in drug and alcohol use and drug dealing, community perception of social changes, tribal staff perception of changes in community norms, tribal policies related to ATOD, number of sober adults in the community, current youth alcohol use, current peer alcohol use, and number of alcohol and drug-related juvenile and adult arrests. Although the author described many positive overall changes in the community, including improved social conditions, a shift in social norms regarding drugs and alcohol, the creation of new policies and laws around substance use, and increased collaboration among tribal organizations, no significant change was found in adults’ perceived harmfulness of ATOD use. Because the sample of youth surveyed for quantitative data was likely too small to discern significant change over time, the only significant outcome was an increase in the number of friends that youth reported did not expect them to drink. In addition, Rowe indicated an increase in the number of individuals reportedly seeking abstinence. Although the numbers of drug- and alcohol-related arrests, substance-related referrals, and referrals of families for services all increased, the author suggested that this was an indication of improved awareness among community members rather than an indication of rising use.

Dorpat (1994) described a multi-arm prevention program implemented by the Puyallup Tribe of Indians, a tribe that inhabits a primarily urban reservation located in Tacoma, Washington. Although a description of the program does not indicate that its format was intentionally based on any particular community-based theory, the nature of the program’s development and content appears similar to other community-based interventions reported here. PRIDE (Positive Reinforcement in Drug Education) was a prevention program conceived and developed through the guidance of the Puyallup Tribal Council and local school administration. Its four components included (a) development of students’ cultural identity through both curricular and extracurricular instruction and activities in the schools; (b) implementation of a school-based prevention curriculum dealing with health awareness, drug and alcohol awareness, refusal skills, and life skills; (c) enforcement of a security policy for reducing in-school drug use and development of a drug-free environment on school campuses; and (d) coordinated counseling, referral, and/or case management services for those students identified as drug users. Although the author reported that a formal process evaluation supported program efficacy, only one postintervention student survey was described in terms of outcome evaluation. This survey demonstrated high rates of expected school completion and positive attitudes about health among students. The survey also indicated 22% of high school students reported drinking to get drunk. The author compared this with a public school survey conducted separately from the study in which 46% of local high school juniors reported drinking to get drunk once per month. Although these outcomes appear positive, efficacy is difficult to establish without baseline or comparison group data.

In general, it appears that community-based approaches, and specifically community empowerment, may provide promising ways of developing culturally relevant substance abuse prevention programs for Native American adolescents. Further investigation and outcome data are necessary to better document the efficacy of community-based interventions and to better understand which aspects of these programs are most helpful.

**Individual-Oriented Approaches**

The majority of programs that have focused prevention at the individual level have utilized the approach of adolescent skill-training interventions. As an extension of social learning theory (Bandura, 1986), primary socialization theory has been used as a method to explain American Indian adolescent alcohol use (Oetting & Donnermeyer, 1998). According to this model, socialization is the process of learning social norms and behaviors and is an active interaction between the individual and the primary socialization sources (namely, the family, school, and peer clusters). The goal of socialization is the development of the abilities and competencies needed to function successfully within a culture. Drinking among adolescents, then, reflects this process of socialization, and the norms and expectations of the family, community, and mainstream society.

The link between social–cognitive factors and alcohol problems is appealing from a prevention perspective because attitudes, beliefs, and behavior are subject to modification. Skills training is a vehicle commonly used for motivating and effecting change in substance use patterns. As a result, it is perhaps the most widely researched approach and provides the richest literature on intervention outcomes for the American Indian population.

**Peer-led interventions.** Skills-training programs are often enhanced by using peers as a component of the intervention. Research has shown that peer leaders can be at least as, and sometimes more, effective than adult health educators when working with adolescent populations (Mellanby, Rees, & Tripp, 2000), especially in effecting change in attitudes and behaviors (Bangert-Drowsn, 1988; Tobler, 1986).

Theories of social learning (Bandura, 1986), social inoculation (McGuire, 1964), and social norms (Fishbein & Azjen, 1975) underlie the rationale for this approach by predicting that individual behaviors are influenced by the attitudes and behaviors of the social group to which that individual belongs. More specifically, these theories hold that people are more likely to take on the attitudes and behaviors of those members of their social group whom they perceive as similar to themselves. This may be especially true during adolescence, a time when individuals may be more influenced by peer-group norms (Bangert-Drowsn, 1988; Covert & Wangberg, 1992). Researchers have applied these theories to Native American populations specifically by observing...
that drinking patterns among American Indian adolescents can be both shaped and maintained by peer-group expectations (Carpenter, Lyons, & Miller, 1985; Curley, 1967).

Only one published study thus far has evaluated the usefulness of incorporating a peer-counseling component into an alcohol abuse prevention program for American Indian adolescents (Carpenter et al., 1985). The overall approach of this program was to teach responsible drinking utilizing self-control training. Thirty students, from 16 tribes, attending a residential high school were identified as at risk for problem drinking and were randomly assigned to one of three interventions: (a) self-monitoring alone, (b) self-monitoring with peer counseling, or (c) self-monitoring with peer counseling in addition to an alcohol education class. The participants represented tribes from across the United States and had an average age of 16 years (range = 14–20 years).

Participants were assessed prior to the intervention, postintervention, and at follow-ups of 4 months, 9 months, and 12 months postintervention. Quantity of weekly drinking, frequency of drinking, and peak blood alcohol concentration in the past 3 months decreased significantly in all groups over time. However, no differences between groups were observed, indicating effects were similar regardless of minimal or full program participation. Carpenter et al. (1985) concluded that these findings are consistent with previous research that has “found only modest differences between extensive self-control training programs and more minimal interventions, as long as the latter have included self-monitoring and basic self-help guidelines” (p. 307).

Bicultural competence interventions. Skills-training-based programs designed for American Indian and Alaska Native youth often incorporate a bicultural competence approach in order to increase relevancy and effectiveness. A critical component of bicultural competence is learning important coping skills for negotiating both mainstream and Native cultures. This experience can be empowering, increasing a sense of self-efficacy and leading adolescents to be more functional navigators of their often-complex environments.

A study conducted among American Indian youth living on two western Washington reservations shows modest support for a bicultural competence skills intervention for preventing substance abuse (Schinke et al., 1988). Participants included 137 youth (mean age = 11.8 years) who after pretesting were randomly assigned by reservation site into prevention and control conditions. Participants in the bicultural competence condition were instructed in and practiced communication, coping, and discrimination skills using behavioral and cognitive methods. For example, youth were introduced to culturally relevant examples of verbal and nonverbal influences on substance use, were guided in self-instruction and relaxation techniques to help cope with the pressure of substance use situations, and were taught techniques to anticipate temptations and explore healthier alternatives to substance use. Youth in the control condition received no intervention. Adolescents in the bicultural competence group showed greater posttest and 6-month follow-up improvements than those in the control group on measures of substance-related knowledge, attitudes, and interactive abilities and on self-reported rates of tobacco, alcohol, and drug use (Schinke et al., 1988).

Another study involved 1,396 Native youth from 10 reservations in Idaho, Montana, North Dakota, Oklahoma, and South Dakota (Schinke, Tepavac, & Cole, 2000). Participants were randomly assigned by school to one of three experimental conditions. Two of the three conditions involved 15–50 min weekly sessions focusing on cognitive–behavioral life skills training. Youth learned problem-solving, coping, and communication skills for preventing substance abuse. However, the standard life skills training techniques and content were expanded and adapted to fit the bicultural world of the Native American adolescents. One of these intervention conditions also included a community involvement component, in which multiple community systems worked together to plan activities to raise awareness of substance abuse prevention. The third condition consisted of a control group that did not receive any intervention.

The authors found that except for cigarette use, follow-up rates of smokeless tobacco, alcohol, and marijuana use were lower for youth who had received the skills intervention than for those who were in the control group (Schinke et al., 2000). At the 30-month follow-up, smokeless tobacco use, defined as seven or more instances of use in the past week, was approximately 7% for the skills intervention groups and a little less than 11% for the control group. At the 42-month follow-up, the rates were 10% and 18%, respectively. Alcohol consumption, defined as four or more drinks in the week prior to measurement, was also significantly lower at the 30- and 42-month follow-ups for the two intervention groups (23% vs. 30% and 16% vs. 19%, respectively). Although the youth who participated in the skills plus community involvement condition had lower rates of alcohol use than the control group, their rates were higher than those youth in the skills-only group. Although these results did not reach statistical significance, this trend was present at the 18-, 30-, and 42-month follow-ups. At the final follow-up (42 months), marijuana use rates were significantly lower for Native American youth who had participated in the skills intervention (7%) than for those in the control group (15%).

Moran and Reaman (2002) described initial outcomes from the Seventh Generation project, which involved urban American Indian fourth through seventh graders in Denver. This after-school alcohol prevention program utilized a life skills approach with the following content areas: correcting misperceptions of alcohol use norms, enhancing values that conflict with alcohol use, improving self-esteem, learning structured decision making, increasing refusal skills, and making a personal commitment to sobriety (Moran, 1998). Local community-based focus groups determined seven culturally specific core values, which were emphasized throughout the curriculum. These included harmony, respect, generosity, courage, wisdom, humility, and honesty. In this way, cultural relevance of the material was established without the use of traditional Native activities or artifacts. The intervention consisted of 13 weekly 2-hr sessions with a 5-week booster after 6 months. This quasi-experimental design compared 257 intervention youth with 121 nonintervention youth at pretest, posttest, and 1-year follow-up. The intervention and control groups were not significantly different at pretest or posttest, except that the intervention youth who completed the 1-year follow-up had significantly better decision making and greater Indian identity at pretest than did control group youth. At 1-year follow-up, the intervention group also displayed less positive beliefs about alcohol consequences, less depression, greater school bonding, more positive self-concept, and higher levels of perceived social support. In addition, a significant difference in reported drinking in the past 30
The prevention programs reviewed here provide strong support for the use of a skills-training approach in reducing substance misuse among American Indian and Alaska Native adolescents. Collectively, the youth who participated in these programs symbolize the diversity found within the greater American Indian population. Tribes from across the country were represented, as were both reservation-based and urban youth and those attending public, tribal, and boarding schools. Further research is needed to determine the relative contributions made by the various dimensions of a specific program and to identify whether there are differential outcomes based on participant variables such as gender, age, residential, or cultural differences.

**Limitations of Current Approaches**

This article reviews prevention programs that have been evaluated and have demonstrated some degree of efficacy in reducing the prevalence of substance abuse and related consequences. However, the number of such programs is too few considering the magnitude of substance use problems experienced by American Indian and Alaska Native adolescents. It is vital that an evaluation component be established in the development and implementation of all prevention efforts. Critical aspects of effective evaluation include formulating a research design that allows for a comparison of control group while respecting a community's expectation of universal inclusion (Parker-Langley, 2002), recruiting a large enough sample size to perform more sophisticated statistical analyses, maintaining a follow-up period of suitable duration to ascertain the long-term effects of an intervention, and assessing both process and outcome variables. Only by doing this can the effectiveness of prevention programs be determined and, thus, resources be directed more competently toward addressing issues of substance misuse.

It has been said before, but it bears repeating: American Indians and Alaska Natives are an extremely culturally diverse group. Programs developed for one segment of the Indian population may not be generalizable to another. This may be due to actual geographical or cultural differences that render prevention efforts incompatible between certain groups, or it may reflect a longstanding desire on the part of some communities to assert and maintain a unique and independent identity. Regardless of reason, programs developed in one community may not work in or be accepted by others. Problems of generalizability are often mentioned in limitations sections, but the discussion ends there. Often, there is no additional dialogue nor recommendations offered regarding how to adapt interventions for use with other groups. This situation is extremely unfortunate, as information of this sort would likely benefit and guide the efforts of other communities struggling with these same concerns. Given the extensive need for effective substance abuse prevention among Indian adolescents, researchers need to address this very important issue.

Of all the programs reviewed here, only one specifically targeted multiracial urban youth (Moran, 1998; Moran & Reaman, 2002). This reflects a critical gap in prevention services and research. Although approximately two thirds of all American Indians and Alaska Natives now live in urban areas (U.S. Census Bureau, 1993), the vast majority of studies that are reported use a reservation-based sample. One reason for this may be that individuals in these communities tend to be easier to identify and are presumed to be more culturally homogenous. In addition, research-funding mechanisms often specifically target tribal populations rather than urban groups. These factors greatly impact the development and implementation of prevention programs. However, substance abuse prevention efforts for Native adolescents are critically limited by the lack of published accounts of culturally and developmentally appropriate strength-based urban programs. Urban youth are likely to have a much different relationship with their local and tribal community than do rural or reservation-based youth. In contrast to reservation-based adolescents who are likely to be more similar, urban youth represent a diverse spectrum of tribal nations, cultural knowledge, and traditional cultural participation. As a consequence, prevention research conducted with reservation samples may not transfer easily to adolescents living in metropolitan areas. More attention clearly needs to be focused on this overlooked and poorly understood group.

The body of literature regarding Indian adolescent substance use and abuse would benefit further from an expansion of current research efforts. Published studies tend to revolve around prevalence data and cross-sectional reports of risk factors. Very few published studies have explored risk prospectively and longitudinally (e.g., Federman et al., 1997; Walker et al., 1996). In addition, there are few published accounts of protective factors or avenues of resiliency for substance abuse problems among American Indian youth. Further exploration of these factors is essential to the development of effective interventions.

Developing prevention programs that are meaningful and relevant for American Indian youth is of critical importance. It is clear that simply applying adult and majority culture definitions and conceptualizations of problem drinking to Indian adolescents is neither appropriate nor useful. Instead, there needs to be a recognition that different developmental trajectories exist, with important individual differences in causes, course, and consequences of substance abuse (Baer, McLean, & Marlatt, 1998). Prevention programs that are culturally relevant and matched to the unique needs of Native adolescents are strongly indicated (Bobo, 1986; LaFromboise & Rowe, 1983; Schinke et al., 1988; Stone, 1981).

One method of assuring that programs are appropriate for their target population is extensive collaboration with and involvement of community members. Often this means going beyond the boundaries of traditional academic research and grant funding. It requires making a significant commitment of time and resources toward developing the trust and respect of community members and learning from them the best methods of designing and implementing a local program. In addition, such involvement entails providing community members with information, training, and technical assistance to maintain a program once it has been established. Most Indian communities are wary of researchers, and rightfully so. There has been a long history of “parachute” academics who “drop in” to a community with prevention program in hand, collect data, and then leave to move on to other projects. The time has come to make a long-term commitment to the Native American population by working with communities to develop and sustain effective prevention programs.

Although Indian communities are marshalling their resources to address substance-related harm and to find solutions that work for their community, these endeavors are not well evaluated or docu-
DiClemente (1983). The four major stages designated in the model the stages of change model first described by Prochaska and come the focus. active treatment interventions and the prevention of relapse be-
already developed alcohol or drug dependency, participation in and protective factors is often recommended. For those who have addiction, an early intervention approach that targets specific risk reduce the risk of harm and the potential for addiction. To prevent has occurred, however, targeted prevention offers a critical oppor-
tunity to provide an intervention that decreases the likelihood that their substance use will lead to abuse or dependence. For those who are unable or unwilling to stop drinking or using drugs altogether, a harm reduction approach may be helpful (Marlatt, 1998). For Indian communities, a harm reduction prevention model may be a viable alternative to traditional options because of its pragmatic emphasis on the acceptance of people at where they are in the process of substance use, abuse, and recovery (Daisy, Thomas, & Worley, 1998). Harm reduction attempts to broaden the availability of prevention and treatment services by lowering the threshold necessary for entry into such services (Larimer et al., 1998). With its emphasis on community outreach, self-
determination, and learning appropriate ways to cope in the presence of high-risk environmental conditions, harm reduction has been reported as a promising model of intervention in a few First Nation communities in Canada (Landau, 1996).

**A Stepped-Care Model**

A stepped-care approach is integral in conceptualizing prevention and treatment along a continuum. According to the stepped-care treatment model (Sobell & Sobell, 1999), one begins with the first step, usually defined as an initial effort to quit or cut down on substance use without outside support or treatment. At this point, little is known about the process of self-initiated change or the natural history of recovery in the American Indian population, although a study is currently underway to document this process among Alaska Natives (Mohatt, Hazel, Allen, & Geist, 1999).

If self-change does not occur or is unsuccessful in terms of resolving substance problems, the stepped-care approach recommends “stepping up” the intensity of interventions by engaging the individual in a brief intervention, such as participation in a motivational interviewing session designed to enhance motivation for change and a commitment to taking action or getting assistance from others (Miller & Rollnick, 2002). If the brief intervention is not effective, the stepped-care approach calls for a more intensive intervention, such as participation in a self-help or professional
treatment group. Finally, if the group intervention is not successful, the next step up might include intensive outpatient therapy, or even the possibility of residential or inpatient treatment as a last resort. Overall, the stepped-care model provides a series of cost-effective strategies that can be tailored to the individual’s needs and resources.

A stepped-care approach may be useful for designing and implementing prevention efforts with Indian youth. The use of universal prevention programs, in which everyone in a certain environment receives the intervention and high-risk individuals or groups of individuals are not singled out, is similar to first step approaches that rely on self-initiated change. Targeted prevention programs, on the other hand, can provide more customized prevention by first assessing for adolescents’ experiences with substance use and associated problems when they enter the program. In doing this sort of evaluation, youth who have already begun to experience problems with their alcohol and drug use can be identified and referred for a more intensive intervention or treatment as needed. In addition, certain guidelines or procedures to monitor the adolescents’ use throughout the program could help to detect changes in functioning. If problems begin to occur that suggest a higher level of intervention is indicated, an individual youth’s level of care can be stepped up. In this way, a stepped-care model allows the level and intensity of prevention or intervention to be matched to the adolescent’s needs.

Bicultural Life Skills Approaches

Research with college student binge drinkers (Baer, Kivlahan, Blume, McKnight, & Marlatt, 2001; Baer et al., 1992; Kivlahan, Marlatt, Fromme, Coppel, & Williams, 1990; Marlatt et al., 1998) provides a foundation for integrating high-risk behaviors as potential targets for prevention programs, a strategy that may be efficacious for Native adolescents. In these approaches, an attempt is made to integrate multiple risk behaviors and to develop a lifestyle-coping skills prevention approach. Adolescents are provided with education regarding substance use and its effects, and are taught skills to prevent problems with alcohol, smoking, substance abuse, high-risk sexual behavior, and eating disorders (including risk for obesity and diabetes). As such, the overarching theme is one stressing health promotion and disease prevention, with an emphasis on developing skills for lifestyle balance (Marlatt, 1985). By addressing healthy lifestyles, a skills-based prevention program provides a good match for adolescent development, including a focus on growth, personal responsibility, and enhanced self-efficacy. By avoiding diagnostic labels, lifestyle skills training programs reduce the stigma and shame associated with seeking help for substance abuse or dependency. Adolescents are more likely to be attracted to programs that encourage new learning about how to cope with the challenges of life. Behavior change is viewed from this perspective as a “journey of discovery” rather than a process of “recovery.”

Research has already begun to show the effectiveness of life skills training programs for both urban and reservation-based Native American adolescents, as they can potentially be used as a more developmentally and culturally appropriate prevention method than other programs (Moran & Reaman, 2002; Schinke et al., 1988, 2000). The majority of skills-based prevention programs reviewed here incorporated a bicultural component to make the program more relevant for Indian youth. The application of bicultural competence to interventions relies on learning and practicing communication, coping, and discrimination skills (LaFromboise & Rowe, 1983). It has been suggested that demonstrating the following six factors for both Indian and White cultures indicates bicultural competence: knowledge of cultural beliefs and values, positive group attitudes, bicultural efficacy, communication competency, role repertoires, and groundedness (LaFromboise et al., 1993). Cognitive and behavioral principles drawn from social learning theory appear to be an effective mechanism for transmitting bicultural competence skills. The positive outcomes of skills training programs presented here emphasize that adapting life skills training curricula to reflect the bicultural world in which Native youth live and stressing the adoption of bicultural competencies appear to be promising prevention approaches.

Community Involvement

Effective substance abuse prevention in Indian Country requires the involvement of community members in all stages of program development and implementation. This includes partnering with elders, parents, families, schools, juvenile justice, and mental health, chemical dependency, and medical professionals, as well as representatives from other relevant tribal and/or urban Indian organizations. Without a high level of collaboration, prevention efforts are likely to fail. In most instances, researchers are from outside the community, and there is an initial amount of distrust and skepticism expressed toward them. Nevertheless, overcoming these barriers and establishing good working relationships is essential to develop culturally relevant and sensitive programs. While researchers and academics might bring with them a certain degree of scientific knowledge and technical skill, it is important to remember that community members are the experts on their community and culture. Their input needs, not only to be solicited, but also used to direct the project at every stage from initial planning through implementation and evaluation.

In many communities, a universal prevention approach that targets the entire community, rather than an individual or group, may be most appropriate. Involving multiple systems in the effort to change substance use behavior can be an effective mode of intervention. For many reasons, this may be especially true in smaller communities. First, in a smaller community there is likely to be less individual privacy and confidentiality. Community-wide interventions can reduce the stigma that might otherwise be associated with only targeting high-risk individuals. In addition, social institutions and agencies may work more closely with one another than those in larger cities, increasing the likelihood of making and maintaining systemic changes. Forming community partnerships when designing this kind of intervention is vital to its being accepted and successful.

The community readiness model advanced by the Tri-Ethnic Center for Prevention Research at Colorado State University provides a useful framework for communities that are seeking ways to reduce the degree of substance use and related problems among their youth (R. W. Edwards, Jumper-Thurman, Plested, Oetting, & Swanson, 2000). A community readiness model can help guide prevention efforts by assessing how ready a community is to accept and support a program. The idea of community readiness emphasizes that unless a community is ready to initiate a preven-
tion program, it is likely to not happen at all, or to fail. The Tri-Ethnic Center developed the idea of community readiness into a comprehensive model that includes methods of measuring readiness, suggestions for interventions appropriate for each level, and strategies for increasing a community’s level of readiness.

The theory of community readiness is very loosely based on the stages of change model described previously (Prochaska & DiClemente, 1983). However, because of the added complexities of dealing with group organizations and processes, a multidimensional nine-stage model was advanced. The nine stages of community awareness are as follows: no awareness, denial, vague awareness, preplanning, preparation, initiation, stabilization, confirmation/expansion, and professionalization. R. W. Edwards and colleagues (2000) from the Tri-Ethnic Center offer a method of assessing a community’s readiness for implementing programs, using key informants (people who are involved in community affairs and knowledgeable about the issues at hand, although not necessarily leaders or decisionmakers). In addition, they present practical suggestions for ways to increase community readiness at each stage. As such, this model provides a valuable vehicle to gauge and increase a community’s readiness and desire for prevention programs.

The Cultural Challenge

Both anthropologists and cross-cultural psychologists have described the importance of developing cultural, folk, or emic models to more accurately represent how certain behaviors, attitudes, or constructs may be understood within a particular sociocultural group (Quinn & Holland, 1987; Triandis, 1980). The expectation is that the application of cultural models to the design of prevention programs will enable them to be more culturally relevant and, therefore, effective. Many questions remain, though, regarding the best way to develop and promote a life skills prevention program for Native adolescents in a culturally appropriate manner.

In their discussion of cross-cultural issues, Moran and Reaman (2002) discussed the difference between emic and etic approaches to prevention. Emic approaches are those that are highly specific and meaningful to members of a particular culture, whereas etic approaches are based on cross-cultural behavior and models. Many would argue that given the great diversity of Native American cultures, emic approaches are necessary for effectively combating problems of substance abuse. In other words, “one size does not fit all” when it comes to developing successful prevention programs for Indian adolescents. Taken to the extreme, however, does this mean that every individual or group requires its own special program, or that any one method cannot be used successfully with others?

The dilemma at hand is whether culturally specific programs must be developed as a local model or whether a global model can be developed that has pan-tribal commonalities. This issue becomes vitally important when developing prevention efforts for urban Indian youth, as they often represent the full spectrum of tribal cultures, customs, and identities. In addition, reservation-based adolescents are exposed increasingly more frequently to the traditions and beliefs of other tribal nations, as well as to the lifestyles of mainstream America. It is essential that researchers begin to critically examine their prevention programs to identify core components that may be adapted for use in other communities.

The literature reviewed in this article provides strong support for one such commonality: Programs that train youth in bicultural competency appear to be more successful. Adolescents who are able to demonstrate their ability to function successfully in both Native and mainstream cultures may be less likely to develop problems with alcohol or drugs (LaFromboise et al., 1993; Moran et al., 1999). Although it may not be necessary to develop one’s identity with both cultures, the capacity to cope with the demands of life in both Native and mainstream American societies is critical to successful prevention outcomes. Training in bicultural coping skills is essential to survival for both urban and reservation-based Native youth.

Coping skills training has been shown to be effective for both the prevention of alcohol abuse in adolescents and young adults (Baer et al., 2001; Dimeff, Baer, Kivlahan, & Marlatt, 1999) and in the treatment of alcohol dependence (Monti, Colby, & O’Leary, 2001). Because skills training is based on basic behavioral principles and is evidence-based, it could be considered an etic approach to prevention. But how can this etic approach be incorporated into culturally appropriate emic programs, and how can these basic behavioral strategies be translated or integrated in diverse Indian communities? By drawing upon the rich resources of Native cultures in terms of myths, stories, legends, songs, and dances, it may be possible to transfer etic components into emic prevention programs.

Navigating Life’s Challenges: The Canoe Journey

In the Pacific Northwest, a team of researchers from the University of Washington has been working with the Seattle Indian Health Board to develop a prevention program that addresses these issues in ways that are culturally congruent with the urban community and based on empirically validated principles. This project, named Journeys of the Circle, began with a series of focus groups with urban Native youth (Mail et al., 2003). These youth described a cultural experience unique to Northwest Coastal tribes: the Canoe Family. Throughout the year, youth who belong to the Canoe Family participate in a wide range of activities designed to prepare them for annual canoe journeys to visit other tribes both in British Columbia and the Pacific Northwest. Such activities include participation in “talking circles” with elders and respected community members, the construction of large ocean-going canoes that can carry groups of paddlers from one community to another, and learning how to navigate the waters of Puget Sound. When visiting canoes arrive at a particular destination, the event is celebrated with cultural protocols that include feasting on local specialties, singing, dancing, and participation in potlatches (gift-giving ceremonies). The only requirement for involvement in the Canoe Family is that youth make a commitment to being clean and sober throughout all activities. Participation in the Canoe Family is clearly a desirable and prestigious alternative to being involved in activities associated with drinking and taking drugs.

Using this information, researchers partnered with the Seattle Indian community to develop a prevention program based on the principles of the Canoe Family. Community members have been involved in every aspect of the program’s development and evaluation, providing input and feedback through community meetings, focus groups, and an advisory board. The curriculum, entitled “Canoe Journey, Life’s Journey,” (La Marr & Abab, 2003) was
recently pilot tested with urban Native youth who are at risk for alcohol and drug problems. The program consists of eight lessons and is administered in small co-ed groups to teens between the ages of 13 and 19. The course adopts the medicine wheel as a metaphorical image to organize the Canoe journey itself. The medicine wheel is divided into quadrants, each representing one of the four cardinal directions (as on a compass). Two lessons are devoted to each of these quadrants: north (mental or cognitive skills), west (emotional coping skills), south (physical skills) and east (spiritual coping). Group didactics, discussion, role-playing, and completion of homework assignments are used to train youth in goal setting, decision making, effective communication, coping with negative emotions, protecting the physical body, and enhancing spiritual values.

The overall goal of the course is the same as the Canoe Family: learning how to cope successfully with various life challenges and risks, so as to complete the journey safely and to enhance the value of a clean and sober lifestyle. One advantage of the canoe journey metaphor is that it emphasizes both the value of personal skills and the community values of the canoe team as a whole. Each canoeist must master basic skills ranging from navigation to survival. At the same time, each individual contributes to the overall success of the team effort. More than 120 Indian adolescents participated in the prevention program, and data evaluation is underway. Although it is too early to report findings, preliminary analyses suggest positive outcome trends at the 3-month follow-up (Cummins, Burns, Hawkins, & Marlatt, 2003; Marlatt et al., 2003).

Next Steps

The purpose of this article was to review the field of substance use prevention for American Indian and Alaska Native adolescents. Epidemiological data indicate that the level of substance use problems experienced by this population is endemic. Indian youth are using alcohol and drugs at high frequencies and quantities and are at great risk for a wide variety of associated negative consequences. The need for effective prevention and treatment services is paramount. Unfortunately, the majority of interventions currently underway are not being rigorously evaluated or disseminated for use in other communities.

On the basis of our review of the published outcome literature, we offer in this article a set of best-practice approaches to help guide the development and implementation of prevention programs for Native American youth. These include conceptualizing prevention along a continuum, using a stepped-care model to match interventions to the adolescent’s needs, incorporating biculturally adapted life skills training into programs, and maintaining extensive community involvement and collaboration in every stage of the process. These are similar to the strategies for model prevention programs outlined by the Division of Knowledge Development and Evaluation at SAMHSA’s Center for Substance Abuse Prevention (1999). SAMHSA suggests six approaches that can be used alone or in combination with each other. The first is information dissemination, which entails increasing knowledge and altering attitudes by providing information about the nature, prevalence, and consequences of substance abuse and addiction. The second strategy is prevention education, or teaching life and social skills. Third is alternatives, or providing drug-free activities to meet the developmental needs of youth and decrease their participation in events where substances are likely to be used. The fourth strategy is problem identification and referral; this suggests that prevention programs should have a method of identifying youth who have already begun experiencing substance-related problems in order to refer them to more intensive services or treatment as needed. Fifth is community-based process, or building interagency coalitions and providing community members and agencies with training in substance use education and prevention. The last strategy is an environmental approach, or altering policies that can reduce risk factors or increase protective factors.

These six strategies are highly consistent with the best-practice approaches recommended here, as well as with Native American community values and needs. Contemporary prevention efforts within Native communities often emphasize a holistic approach to health and thus resonate with Native American community values (Vanderwagen, 1999). Programs have begun to incorporate spiritual components with increasing frequency in hopes of instilling traditional values and a respect for sobriety before young people begin experiencing substance-related problems (Mail & Johnson, 1993). The development of effective prevention programs requires an understanding of the strengths and values inherent in Indian communities. Incorporating these cultural factors into prevention efforts will enhance the acquisition of culturally relevant coping skills and, ultimately, lead to a reduction in substance misuse.

The Journeys of the Circle project described earlier was developed to incorporate these best-practice approaches and strategies and to address the need for prevention efforts that are both etic and emic in their approach. Through a partnership with the local American Indian community, researchers created a prevention program that incorporates substance abuse education, bicultural life skills training, and after-school alternative activities. All participants were screened for alcohol and drug problems prior to entering the program and were referred for more intensive services where indicated. Although developed specifically for urban American Indian youth in Seattle, it may be relevant and useful for tribal communities as well. The core etic components can be modified and delivered using relevant emic cultural traditions and metaphors. In the Pacific Northwest, the canoe journey symbolism was a culturally congruent mode of delivering the curriculum. In other geographic and cultural regions, local stories, myths, and resources can be used to adapt the course to be more relevant and effective. Further research will lend information critically necessary to guide efforts to transfer and adapt the Journeys of the Circle program for use in other urban and reservation communities.

This review suggests that programs that utilize Indian strengths, values, and beliefs to promote healthy behavior and reduce the harm associated with high-risk behaviors, including substance misuse, are strongly indicated. The discriminating and thoughtful use of pan-tribal commonalities to adapt approaches found to be effective in mainstream populations is perhaps the most promising and cost-effective practice currently available. These programs can then be customized for implementation in individual community settings. Such interventions provide the foundation for programs that are both scientifically validated and culturally sensitive. By building on the recommendations outlined here and evaluating their results, the field of psychology can continue advancing the knowledge base concerning substance use prevention in Indian communities and thereby more effectively help Indian adolescents create and maintain healthier lifestyles.
References


Preventing Substance Abuse in Indian Youth


