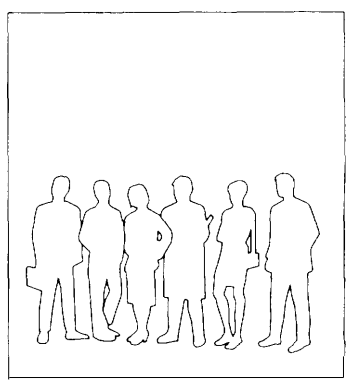
# Individual Risk and Protective Factors 6

No single or generic set of variables explains the misuse of substances for every individual. Depending on an individual's biological makeup, developmental stage, and interaction with various environmental forces, individual risk, vulnerability y, and resilience to substance abuse and addiction will vary for different factors at different times (3).

Much of the research on substance abuse has focused on identifying factors for drug and alcohol use (see table 6-1 ), specifically among adolescents and young adults. Risk factors for substance abuse have been identified as those cognitive, psychological, attitudinal, social, pharmacological, physiological, and developmental characteristics that foster initiation of drug and alcohol use and abuse by an individual. There is some consensus in the field of risk factor research that probably two fairly distinct sets of risk factors affect individuals differently. Social, situational, and environmental factors are likely to be more influential in *initial or low-level substance use,* while individuals who progress from use to *abuse or addiction* are influenced to a greater extent by biological, psychological, and psychiatric factors (27). This distinction between risk factors is more thoroughly discussed in chapter 5. Protective factors are those characteristics that reduce the risk of substance abuse and addiction and promote positive development such as, appropriate role models, involvement in positive peer groups, and a positive self-image and outlook for the future.



This chapter focuses on a select group of individual factors that has been combined under the three headings: Demographics,

TABLE 6-1: Risk Factors for Adolescent and Early Adulthood Drug Use

| Catalano (1982) | Bry et al. (1986) | Newcomb et al. (1986) | Labouvie et al. (1989) | Hawkins & Catalano (1992) |
|---|---|---|---|---|
| Low grade point average | Low grade point average | Low academic performance | Low commitment to school | Low commitment to school |
| | | Low educational aspirations | Cognitive Impairment | Cognitive Impairment |
| | | Low achievement orientation | Intelligence | intelligence |
| | | | | Academic failure |
| Lack of religiosity | Lack of religiosity | | Low religious involvement | Low religious involvement |
| Early alcohol use | Early alcohol use | | Early persistent problem behaviors | Early persistent problem behaviors |
| | | | Early onset high-risk behavior | |
| Low self-esteem | Low self-esteem | Low self-esteem | | |
| | | Self-derogation | | |
| Psychopathology | Psychopathology | Emotional outbursts | | |
| Poor relationship with parents | Poor relationship with parents | Low parental warmth | Poor, inconsistent family management practices | Poor, Inconsistent family management practices |
| | | Parental hostile control | Family conflict | Family conflict |
| | | | Low bonding to family | Low bonding to family |
| | | | Alienation/rebelliousness | Allenatlon/rebelliousness |
| | | | | Family drug behavior |
| | Lack of conformity | | Attitudes favorable to drug use | Attitudes favorable to drug use |
| | Sensation seeking | Impulsity | Sensation seeking | Sensation seeking |
| | | | Attention defict/ hyperactivity | Attention defict/ hyperactivity |
| | | | Low autonomic and central nervous system arousal | Low autonomic and central nervous system arousal |
| | | | Hormonal factors | Hormonal factors |
| | Perceived peer drug use | Friends' deviance | Peer rejection in elementary school | Peer rejection in elementary school |
| | | Negative activities with friends | Association with drug using peers | Association with drug-using peers |
| | Perceived adult drug use | | | |
| | | | Laws/norms | Laws/norms |
| | | | Availability | Availabilty |
| | | | Extreme economic deprivation | Extreme economic deprivation |
| | | | Neighborhood disorganization | Neighborhood disorgamzation |
| | | | School organization factors | |
| | | | Intergenerational transmission | |

SOURCE Adapted from R Clayton, "Transitions in Drug Use: Risk and Protective Factors, " ir*Vulnerability to Drug Abuse,*M. Glantz and R. Pickens (eds ), American Psychological Association, Washington, DC, 1992

### BOX 6-1: Racial and Ethnic Differences in Adolescent Drug Use Among High School Seniors

Research on adolescent substance use has documented substantial racial and ethnic differences in use among high school seniors On average, alcohol, cigarette, and other illicit drug use is highest among American Indian youth, somewhat lower among white and Hispanic youth, substantially lower among black youth, and lowest among Asian youth Additional research explored the hypothesis that these dissimilarities could be partially attributed to differences in background (e.g , urban versus rural, family structure, parental education) and lifestyle factors (e g , grades, truancy, evenings out, religious commitment)

The findings Indicated that controlling for background factors alone did not account for most racial and ethnic differences in drug use, but it did reduce American Indians' relatively high levels of use, which suggests that their use may in part be related to disadvantaged socioeconomic status When both background and lifestyle factors were included in the analysis, the racial and ethnic differences were substantially reduced Educational values and behaviors, religious commitment, and amount of time spent in peer-oriented activities were particularly important explanatory variables

Racial and ethnic differences were also found in a study on drug-related attitudes and perceptions Perceived risk of using drugs, disapproval of drug use, and perceptions of disapproval of drug use by friends were typically highest among black seniors, at intermediate levels among Hispanic seniors, and lowest among white and American Indian seniors Conversely, perceived peer use of drugs and exposure to persons using various drugs for "kicks" were generally lowest among black and Asian seniors, at intermediate levels among Hispanic seniors, and highest among white and American Indian seniors

While these findings are not applicable for those adolescents who drop out of school, researchers are confident that the results are valid for the majority of adolescents who remain enrolled through the senior year of high school

SOURCE U S Department of Health and Human Services, Public Health Service National Institutes of Health, *Smoking, Drinking, and Illicit Drug Use Among American Secondary School Students, College Students, and Young Adults, 1975-1991,* NIH Pub No 93-3480 (Rockville MD 1992)

Economics, and Psychosocial/Behavioral. Factors not directly discussed in this chapter are reviewed in either Part I or 111 of the report. These factors may not appear in every individual with substance abuse and addiction problems, nor will all individuals exposed to these factors use or abuse drugs. In addition, unanimous agreement is lacking within the field of substance abuse and addiction on the importance, number, order of appearance, or interactive effects of many of these factors.

Where applicable, each of the factors has been reviewed in the following manner: historical perspectives; current prevalence; psychosocial and cultural antecedents; biological and genetic antecedents: relevant prevention programs; and areas for future research.

## DEMOGRAPHICS

### ▮ Age

**The preponderance of substance abuse research points to the fact that children who use drugs and alcohol before the age of 15 have a greater likelihood of becoming problem alcohol and other drug users, versus those youth who begin use at a later age (28).**

Highlights from the National Household Survey on Drug Abuse (NHSDA) provide a somber picture of substance use among the Nation's children (77). Lifetime and past month substance use, rates for continued substance use, as well as differences in racial and ethnic substance use (see box 6-1 ) are reviewed in this section.

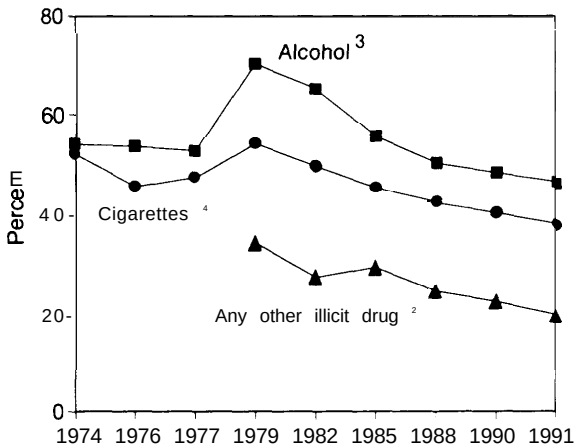
As part of NHSDA, data on lifetime use of alcohol and cigarettes (whose use is illicit for minors) has been collected for youth aged 12 to 17 since 1974; data collection on other illicit drug use began in 1979 (see figure 6-l). The lifetime use findings include:

- Rates in 1991 for lifetime use of alcohol, cigarettes, or other illicit drugs were the lowest recorded since the survey series began 17 years ago. The highest rates for any substance use appeared in the late 1970s.
- In 1979, 70 percent of youth aged 12 to 17 reported some lifetime use of alcohol compared to 46 percent in 1991. Since 1979, lifetime cigarette use has dropped from 54 percent to 38 percent.
- Since 1979, the use of other illicit substances (methaqualone, inhalants, heroin, cocaine, phencyclidine (PCP), crack, tranquilizers, stimulants, other opiates, barbiturates, nitrites, lysergic acid diethylamide, hallucinogens, and marijuana) has followed a similar trend with rates decreasing from a high of 34 percent to the 1991 rate of 20 percent.

A complementary study of adolescents shows 1991 data for substance use within the past 30 days among a sample of approximately 17,500 eighth graders, 14,800 tenth graders, and 15,000 twelfth graders (75).

- Any alcohol use within the past 30 days was reported by 25 percent of the eighth graders, 43 percent of the tenth graders, and 54 percent of the twelfth graders. Having had more than five drinks in the last two weeks was reported by 13 percent of the eighth graders, 23 percent of the tenth graders, and 30 percent of the twelfth graders.
- Fourteen percent of the eighth graders, 21 percent of the tenth graders, and 28 percent of the twelfth graders reported smoking cigarettes within the past month. Those who smoked more than one-half pack per day included 3 percent of the eighth graders, 7 percent of the tenth graders, and 11 percent of the twelfth graders.

FIGURE 6-1: Trends in the Percentage of Youth Aged 12 to 17 Reporting Use of Any Illicit Drug, Alcohol, and Cigarettes in Their Lifetime:[1] 1974-1991




NOTE The exclusion of inhalants in 1982 is believed to have resulted in underestimates in any illicit use for that year, especially for youth aged 12 to 17

1 Data not available for all survey years

2 Use of marijuana or hashish, cocaine (including crack), Inhalants, hallucinogens (including PCP), heroin, or nonmedical use of psychotherapeutics at least once

3 Estimates before 1979 for alcohol may not be comparable to those for later years due to change in methodology

4 For 1979, Includes only people who ever smoked at least five packs

- The other most commonly used substance for eighth and tenth graders was smokeless tobacco with 7 and 10 percent reported, respectively. Eighth graders had the highest percentage of past month inhalant use (4 percent), and of those individuals, approximately 1 percent reported using inhalants on 3 to 5 occasions within the past month.
- For tenth and twelfth graders, the other most commonly used substance was marijuana and/or hashish with 9 percent of the tenth graders and 14 percent of the twelfth graders reporting past 30-day use. Of those individuals, approximately 2 and 3 percent, respectively, had used marijuana and/or hashish on three to five occasions.

Another important indicator of potential substance abuse problems among adolescents is the noncontinuation rate for the use of certain substances. This is an indication of the extent to which people who try a drug do not continue to use it, and is based on the number of individuals who reported ever using a drug divided by the those who have not used the drug in the past 12 months (75).

Among a sample of twelfth graders in 1991, the data show that noncontinuation rates vary widely among the different drugs, with the highest rates observed for methaqualone and inhalants (62 percent). As mentioned previously, inhalant use is higher among younger individuals. The noncontinuation of methaqualone may be due, in part, to the decrease in its availability. A high noncontinuation rate is also seen for heroin (56 percent), cocaine (55 percent), PCP (52 percent), and crack (52 percent). Marijuana has one of the lowest noncontinuation rates (35 percent) in the senior year of any of the illicit drugs; primarily because a relatively high proportion of seniors continue to use it at some level over an extended period of time.

Additionally, the noncontinuation rates for alcohol and cigarettes are extremely low. In other words, 88 percent of the seniors reported some lifetime use of alcohol, and of those individuals, 78 percent have continued to use it within the past year, thus only 12 percent of the seniors reported no alcohol use in the preceding 12 months. Cigarette noncontinuation was defined somewhat differently, as the percentage of those who said they had ever smoked "regularly" and who also reported not smoking at all during the past month. Of the regular smokers, only 17 percent stopped smoking within the past month.

An obvious drawback to these data is the fact that only those individuals who have not dropped out of school are included in the survey. It is not unrealistic to assume that those students with serious drug problems may well have left school before the twelfth grade. More specific discussion of the factors that influence the risk of adolescent substance abuse, as well as prevention programs targeting youth, are thoroughly reviewed in chapter 8.

While the majority of attention is focused on adolescent substance use and abuse, young adults and older adults also show significant levels of substance use and abuse. The 1991 statistics from the NHSDA reveal that heavy drinking (defined as drinking five or more drinks per occasion on 5 or more days in the past month) was reported by 2 percent of 12 to 17 year olds, 11 percent of 18 to 25 year olds, 7 percent of 26 to 34 year olds, and 4 percent of those 35 and older (77). For those same age categories, smoking a pack or more of cigarettes per day was reported by 1, 13, 17, and 17 percent, respectively. The illicit substances reported being used most often in the past month among all age groups were marijuana and hashish. Individuals 18 to 25 had the highest percentage (13 percent) and those 26 to 34 the next highest percentage (7 percent). The second most commonly reported illicit substance was the nonmedical use of psychotherapeutics, which was again highest among 18 to 25 year olds (3 percent) followed by those 26 to 34 (2 percent); all other age groups reported less than 2 percent,

Clearly then, the heavy use of some substances is not exclusive to adolescents. Young- to middle-aged and older adults can also be exposed to stressful risk factors, such as loss of a job, divorce, or death of a child, which could contribute to alcohol or drug problems. The adult population presents unique and often overlooked challenges for the planning and implementation of substance abuse prevention programs.

## Gender

Historically, the vast majority of biological and behavioral substance abuse studies were conducted on male participants, although that has begun to change. A distorted picture emerged, in which women were assumed to misuse the same substances, and for the same reasons, as their male counterparts. It has only been within the past 10 to 20 years that separate research has been conducted on the causes and consequences of alcohol and drug problems among women.

TABLE 6-2: A Comparison of U.S. Population Estimates and Percentages for Alcohol, Cigarette and Illicit Drug Use Among Women and Men 12 Years of Age and Older: 1991

**Extrapolating percentages garnered from the National Household Survey on Drug Abuse to United States population figures produced the following approximations:**

| | Women (about 106 million) | Men (about 98 million) |
|---|---|---|
| Alcohol use within the past month | 46.2 million | 56.5 million |
| | 44 0% | 58. 0% |
| Heavy alcohol use[1] within the past month | 1,2 million | 4.9 million |
| | 2.4% | 8.6% |
| Smoking one pack+ of cigarettes per day | 35 million | 4.9 million |
| | 12.9% | 17.2% |
| Nonmedical past month use of psychotherapeutics | 1.7 million | 1.5 million |
| | 1.7% | 1 .5% |
| Past month use of an illicit substance[3] | 54 million | 7.3 million |
| | 5.2940 | 7.6% |

[1] Defined as having five or more drinks on one occasion on five or more days in the past 30 days
[2] Sedatives, tranquilizers, stimulants, analgesics
[3] Marijuana, inhalants, cocaine, hallucinogens, heroin, nonmedical use of psychotherapeutics.

SOURCE Off Ice of Technology Assessment, 1994, derived from U S Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Household Survey on Drug Abuse Highlights 1991, DHHS Pub No (SMA) 93-1979 (Rockville, MD February 1993)

Women have not been immune to the harmful effects of alcohol and other drugs. In the late 1800s twice as many women were addicted to narcotics as men. The majority of these women were white, middle-aged, and of upper-middle class status. Some had become addicted through the prescription of narcotics for a host of so-called female problems, while others knowingly misused opium, heroin, morphine, and cocaine (53).

The number of women drinking alcohol and experiencing alcohol-related problems has risen steadily since World War II. At least one-third of the estimated 18 million alcoholics and problem drinkers in the United States are thought to be women. These figures, which many consider to be conservative, would suggest that close to 6 million women are currently dealing with the medical, legal, and social problems of alcohol misuse (53).

Overall, men report more frequent use of alcohol, cigarettes, and all illicit substances (except nonmedical use of psychotherapeutics) than women (79,77). However, this does not mean that there is not substantial alcohol and drug use among women (see table 6-2). Additionally, some gender and ethnic differences may be attributable to failure to survey hidden populations. The risk status of women who are not in the workforce, do not receive prenatal care, and are not visible through arrest, is less reliably known.

Neither men, nor women, should be considered homogeneous. For example, alcohol use and its misuse can vary widely between different racial and ethnic groups. Among men, Hispanics (60 percent) were slightly more likely to have used alcohol within the past month than whites (59 percent) or blacks (52 percent) (77). In general, white women drink more frequently than other women. Large numbers of Native American, Hispanic, black, and Asian women do not drink at all (70). Additionally, poor and minority women appear to come under closer scrutiny for alcohol and drug abuse than do financially secure or white women (see box 6-2). These racial and ethnic differences are more fully discussed in the following section.

Do men and women cite different reasons for the misuse of alcohol and other drugs? Over the last several decades within the United States, the socially defined roles for men and women have undergone substantial changes. When given a choice, many women have opted for the traditional role of a stay-at-home mother and homemaker,

### BOX 6-2: Racial, Ethnic, and Socioeconomic Discrepancies in Mandatory Alcohol and Drug Use Reporting Practices for Pregnant Women

In one county of Florida, anonymous alcohol and drug tests were conducted on urine samples obtained from all pregnant women seeking prenatal care from both public health clinics as well as private obstetrical offices White and black women were discovered to have insignificantly different prevalence rates for alcohol or illicit drug use during pregnancy While black women used cocaine more frequently than white women (7 5 percent versus 18 percent), white women had higher rates of marijuana usage (14 4 percent versus 6 percent) The relative similarities between alcohol and drug use also held true for poor versus middle-class women However, the study also documented that after delivery, black women were 10 times more likely to have been reported to the health authorities for substance use during pregnancy than were white women Poor women also had a greater chance of being reported than middle-class women This study reflects a discrepancy in reporting practices among staff at some public clinics and private obstetrical offices, which appears to be influenced by an individual's social status as well as race

SOURCE I J Chasnoff H J Landress, and M E Barrett, "The Prevalence of Illicit-Drug or Alcohol Use During Pregnancy and Discrepancies in Mandatory Reporting in Pinellas County, Florida" *The New England Journal of Medicine* 322(1 7) 1202-1206, 1 9 9 0

while other women have pursued career paths that may or may not include marriage and children, and still others have attempted to combine the two. These fairly recent changes have brought pressures and risks many women had not been subjected to previously.

Women in the workplace are more likely to encounter drinking opportunities such as business lunches and office celebrations, where they may feel encouraged or even pressured to drink (53). Women have also been recently targeted by the beer, tobacco, and liquor industries, as well as by small-scale marketing by nightclubs and bars in the form of ladies' nights.

In the early 1970s, researcher Sharon Wilsnack postulated that some women may abuse alcohol to submerge those aspects of themselves that did not conform to the traditional female sex role, thereby allowing them to feel more acceptably feminine (53). More recently, several studies on female alcoholics have shown that women, more frequently than men, can pinpoint a specific traumatic life event that they believe precipitated their problem drinking. The crises identified most often by women included a partner's infidelity, the death of a family member, a child leaving home, postpartum depression, divorce or separation, infertility, gynecological problems, and menopause (39,53).

A similar study focused on the impact of various life events on alcoholic men and women. Alcoholic men placed significant importance on work-related events, marriage issues, sexual difficulties, and arguments with spouses. In addition to those events cited by the men, alcoholic women focused on social activities, family troubles, stillbirth and adoption, and death of a close relative (40).

While much of the substance abuse research has focused on alcohol issues, various researchers have examined the differences between men and women in their use of illicit substances with or without the presence of alcohol. For men and women cocaine addicts in treatment, the following significant differences were noted (40,41 ,35):

- Women had started to use cocaine at a younger age than men, conversely to what is generally found among opiate users and alcoholics.
- Women had a significantly lower level of social adjustment than male patients.
- Women patients were less likely to be employed, to hold high status jobs, to be self-supporting, and to be financing their own drug use.
- Women were more likely than men to cite specific reasons for their drug use: depression, feeling unsociable, family and job pressures,

and health problems; whereas men more often cited the intoxicating effects of cocaine as a reason for their drug use.

- Men reported experiencing more guilt (47 vs. 23 percent), whereas women noted that one of the desirable effects of cocaine use was a reduction in their feelings of guilt.
- Women were more often diagnosed with depression than men, and their depression took longer to treat, while men were more often diagnosed with antisocial personality disorder.
- Most men and women reported that they used cocaine to be more sociable.
- Women demonstrated a slower recovery than men, and had more residual problems.

Gender differences among opiate addicts have also been explored. Researchers have shown that female addicts are more likely than male addicts to have first been introduced to heroin by family members or others close to them, and to have experienced severe family disruption (36). The development of the women's opiate dependence is also more likely to be linked to the family's approval of use or the absence of clear disapproval of use, in combination with easy access to the drug (35).

Differences in marijuana smoking may also be partially attributable to gender. In a recent review, it was shown that men's marijuana smoking was tied more to the availability of the drug, while women smoking was affected to a greater degree by social influences, such as weekday versus weekend smoking, and the smoking of their male partners. Women have also been shown to increase their marijuana smoking during periods of anger and other unpleasant dispositions (41 ).

In addition to discovering some sociocultural dissimilarities, gender differences in biological and genetic susceptibility to substance abuse have been examined. The role of heritability and genetics in influencing individual susceptibility is more thoroughly discussed in chapter 3, thus the discussion in this section will concentrate on biological differences. Again, a large portion of these studies has concentrated on alcohol and its effects.

In the late 1970s it was reported that when men and women of comparable body weight were given equivalent doses of alcohol, women achieved higher blood alcohol levels. However, these findings have been challenged, as more recent studies have shown that if the blood alcohol level is based on total body water rather than weight, the difference in levels between men and women is insignificant (65).

Another avenue that has been explored in explaining the gender difference in blood alcohol levels has to do with the metabolism of alcohol. Based on findings from animal research, Mario Frezza et al. (25) investigated differences in the "first-pass metabolism" between men and women. Data from animal studies reveal that a significant amount of ingested ethanol does not enter the circulatory system, but rather is neutralized in the stomach by the enzyme alcohol dehydrogenase. Using a small study sample (6 alcoholic and 14 nonalcoholic men, 6 alcoholic and 17 nonalcoholic women) Frezza et al. investigated whether the first-pass metabolism and enzyme activity level varied between men and women, and alcoholic and nonalcoholic individuals. They discovered that both gender and chronic alcohol abuse had statistically significant effects on the first-pass metabolism of alcohol, specifically, the first-pass metabolism was considerably lower among alcoholic women compared to alcoholic men, which in turn was lower than nonalcoholic men. Similar findings were reported for the alcohol dehydrogenase activity level; with the highest activity levels (70 to 80 percent) found in the nonalcoholic men and women, less activity among the alcoholic men (37 to 46 percent), and the smallest activity level among alcoholic women (1 1 to 20 percent). To summarize, the women in general had lower rates of first-pass metabolism and lower levels of alcohol dehydrogenase activity, which both lead to an increase in the amount of ethanol in the circulatory system. The levels of enzyme activity further decreased among the alcoholic women and the first-pass metabo-

lism was essentially nonexistent, indicating little neutralization by the stomach.

Researchers have also been studying the effect of hormonal changes during the menstrual cycle on alcohol absorption rates. Alcohol absorption has been reported to vary during a woman's cycle—specifically, the rate of alcohol absorption increases premenstrually. However, data from other clinical and animal trials have disputed these findings (65).

What is clear from this type of biological research is that few firm conclusions can be made about gender differences in response to alcohol ingestion, and even fewer still about biological responses to drugs other than alcohol.

Nevertheless, the psychosocial differences that have been identified between the sexes could assist practitioners in the development of more gender specific substance abuse prevention programs. For example, because many women can pinpoint specific events in their lives that they believe contributed to their heavy alcohol or drug use, it would behoove professionals working with women to be cognizant of these factors. General inquires could be made at yearly physical or gynecological exams, which could also serve as informational sessions on the dangers of alcohol and drug use (39). In addition, special attention should be paid toward adolescent girls whose first experience with alcohol and drugs is often through a male family member or boyfriend.

Broadly speaking, there are basic gaps in knowledge concerning gender differences and substance use within virtually all the parts identified in this report: Part I-necessary preconditions; Part II-individual factors; and Part III-activity settings. Until these gaps are addressed, the practice of transferring data garnered from studies specific for one gender, to the other gender, is inaccurate and misleading.

## Race and Ethnicity

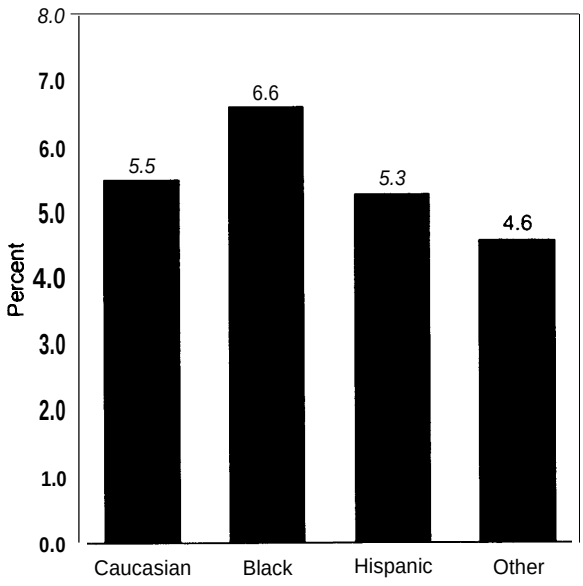
Historically, racial and ethnic minorities have been linked with, and often blamed for, many of the drug problems within the United States. Throughout the late 1800s and early 1900s, the general public associated the growth in opium addicts with the arrival of Chinese immigrants; although numerous physicians had been freely prescribing narcotic preparations to their patients, many of whom were middle- to upper-class whites. The drug cocaine has long been associated with blacks. A popular image during this time was one of cocaine-crazed blacks, although use of cocaine was widespread among whites as well (86). Throughout this same period, marijuana was thought to have been brought into the country and promoted by Mexican immigrants and later picked up by the subculture of black jazz musicians. Due in part to public paranoia, the Marijuana Tax Act of 1937, which was a direct attempt to control marijuana use, was born (45).

In the minds of many individuals, this derogatory link between minority populations and rampant drug abuse has continued. Certainly, many urban areas have high concentrations of minorities, and within these areas the prevalence of alcohol and drug abuse may be high. Often overlooked, however, is the existence of alcohol and drug problems in suburban and rural areas throughout the United States, which have varying percentages of minorities.

Prevalence rates for past month use of an illicit substance in 1992 (see figure **6-2) are** not drastically different between whites, blacks, and Hispanics, although it should be kept in mind that this statistic does not accurately reflect abuse or addiction. Even though the prevalence of illicit substance use was highest among blacks, over three-fourths (76 percent) of the past month illicit substance users were white. In other words, there were approximately 8.7 million whites, 1.5 million blacks, 885,000 Hispanics, and 315,000 individuals of other racial and ethnic groups who reported past month use of an illicit substance in 1992 (79).

Also for 1992 among individuals aged 12 and older, whites reported the highest percentage of alcohol use within the past week (21 percent), followed by blacks (19 percent), and Hispanics (18

FIGURE 6-2: Prevalence of Any Illicit Drug Use in the Past Month by Race and Ethnicity Age 12: 1992




[1]Illicit drug use includes marijuana, cocaine (including crack), hallucinogens, heroin, and nonmedical use of psychotherapeutics (stimulants, sedatives, tranquilizers, and analgesic

SOURCE U S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration, "National Household Survey on Drug Abuse Population Estimates 1992, " DHHS Pub No (SMA) 93-2053 (Rockville, MD October 1993)

percent) (79). The rates for heavy drinking were not statistically different by race or ethnicity (5 percent for whites and blacks, and 6 percent for Hispanics) (78).

Until fairly recently, much of the analysis of substance use data has concentrated on the correlations between the use of a substance and one or two variables such as race and ethnicity and/or educational level. Often a positive association was found between minority populations and the use of certain substances. While statistically correct, these analyses can be simplistic and misleading (see box 6-3). Clearly many risk and protective factors interact to produce substance use and abuse. If the majority of these variables are excluded from the analysis, a skewed picture may arise as to the importance of certain variables as risk factors for substance use and abuse. Additionally, to simplify the data collection, racial and ethnic categories are often broad. The most popular groupings are blacks, white non-Hispanic, Hispanic, and other. Though each of these categories contains many distinct cultures, gross generalizations are commonly made within each category.

In recent years, there has been a shift toward analyzing more carefully the complex relationship between cigarette, alcohol and illicit drug use, and socioeconomic and demographic variables. The previous research had drawn on relatively small databases. However, in 1992, the National Institute on Drug Abuse (NIDA) critically analyzed the national drug use data collected in its 1988 and 1990 NHSDA. Predictors of drug and alcohol use included an extensive array of both individual variables (e.g., age, educational level, marital status) and aggregate variables based on the attributes of the census block, community, or region in which the respondent lived (see table 6-3 for a complete list).

The effect of select variables such as race and ethnicity were measured, while simultaneously controlling for all other variables (e.g., age, educational level, employment status). Individuals of racial and ethnic minorities were found to be no more likely than whites to use alcohol heavily (defined as having five or more drinks on five or more days in the past month) or to use marijuana, cocaine, or psychotherapeutic drugs (inclusion of crack or heroin in the analysis was impossible due to the small number of respondents reporting use). In fact, when socioeconomic status was controlled for, both blacks and Hispanics had a substantially lower likelihood of heavy alcohol use than whites (76).

A reanalysis of the 1988 NHSDA data was accomplished by an independent group of researchers who clustered the respondent data into neighborhood risk sets. The original analysis on the 1988 data revealed that for all ages, blacks and Hispanics were twice as likely to have ever used crack cocaine than were whites. Once neighborhood clusters were established, the data revealed that given similar social and environmental conditions, crack use did not differ significantly for blacks or Hispanics compared with whites (9).

## BOX 6-3: Bivariate Versus Multivariate Analysis

Bivariate analysis is the process of taking one variable such as employment status and testing its correlation and statistical significance to reported alcohol or drug use A major drawback to this type of analysis is its relative simplicity; it does not control for the potential effects of other variables For example, if a relationship between being unemployed and heavy alcohol use was shown to be statistically significant, one could not be certain of the nature of the relationship Perhaps the individual was unemployed due to his or her heavy drinking Alternately, a person's unemployment could have caused his or her heavy drinking Furthermore, if more sophisticated analyses using additional variables were completed, the original association between being unemployed and heavy drinking could disappear altogether

Multivariate analysis, while having its own limitations, is a much more comprehensive way in which to study the relationships between several variables and alcohol and drug consumption The multivariate analysis used by the National Institute on Drug Abuse systematically incorporated a variety of individual variables such as educational level, employment status, race and ethnicity, and sex, in addition to certain aggregate variables including region (South, Northeast, North Central, West), metropolitan status, and racial and ethnic composition of census blocks Each one of these variables was then separately analyzed for its potential predictive value for alcohol and drug use, while the other contributing variables were also taken into account While multivariate analyses fall short of demonstrating causality, because additional variables are used to control for plausible alternative explanations, more confidence can be placed in the significant correlations found

SOURCE Off Ice of Technology Assessment, 1994

However, the number of reported crack users in the study was relatively small ( 138), and neighborhoods were identified as crack neighborhoods with as few as one reported crack user, thus the research findings should not be generalized.

The new research hypothesized that the previous racial differences found in the prevalence of crack cocaine smoking may have been due to macrosocial environmental risk factors including: differences in the availability of crack; employment rates; premature death rates; community contact with the criminal justice system; socially acceptable mechanisms for coping with life stressors; distribution of wealth; and access to social resources.

While both studies had specific limitations, the importance of these types of analyses cannot be understated. Focus should be placed on the interaction between communities and individuals and the relative influence on subsequent drug and alcohol use, rather than a person's race or ethnicity.

Race or ethnicity has not been shown to be either a biological or genetic risk factor for substance use or abuse. To date, the preponderance of investigative studies has focused on racial and ethnic differences in response specifically to alcohol. Virtually no study has been completed on differences in racial and ethnic biological responses to other licit or illicit drugs.

Individual metabolism of alcohol is essentially controlled by two enzymes, aldehyde dehydrogenase and alcohol dehydrogenase. If the enzyme aldehyde dehydrogenase is inactive for any reason, ingestion of even a small amount of alcohol can cause rapid and prominent facial flushing. Continued drinking leads to nausea, dizziness, palpitations, and faintness. This reaction is seen among many Asians (84,1 6).

A mutant form of alcohol dehydrogenase will effect the efficiency of alcohol metabolism as well. Altered forms of the alcohol dehydrogenase enzyme have also been reported in several *Asian* populations.

The two enzymes, aldehyde and alcohol dehydrogenase, probably interact in some individuals

TABLE 6-3: Predictive Models for Drug and Alcohol Use Among Respondents Aged 18 to 49: 1988-1990

| | Alcohol | | | Marijuana | | Cocaine | |
|---|---|---|---|---|---|---|---|
| **Predictors**[a] | **Abstinence in past month** | **Past month nonheavy use** | **Past month[b] heavy use** | **Any past month use** | **No past month use** | **Any past year use** | **No past year use** |
| **individual variables:** | | | | | | | |
| Age: | | | | | | | |
| ***26-34*** | | | | | | | |
| ***18-25*** | | | | X[c] | | X | |
| 35-49 | | | | | x | | |
| Sex: | | | | | | | |
| Female | | | | | | | |
| Male | | x | XX[d] | X | | | |
| Race/Ethnicity | | | | | | | |
| White | | | | | | | |
| Black | | | | | | | |
| Hispanic | | | | | | | |
| Other | x | | | | | | |
| Education | | | | | | | |
| High school graduate | | | | | | | |
| Less than high school | | | | | | | |
| Some college | | | | | | | |
| College graduate | | | | | | | *x* |
| Occupation of CWE | | | | | | | |
| White collar | | | | | | | |
| Blue collar | | | | | | | |
| Service | | | | | | | |
| Did not work | | | | | | | |
| Aggregate variables: | | | | | | | |
| Region (South) | | | | | | | |
| Northeast | | | | x | | | |
| North Central | | | | x | | | |
| West | | | | x | | | |
| Metropolitan status (large metro) | | | | | | | |
| Small metro | | | | | | | |
| Nonmetro | *X* | | | | | | x |
| Percent Black in block (<5%) | | | | | | | |
| 5%-50°A | | | | x | | | |
| **50%** | | | | | | | |
| Percent Hispanic in block (<5%) | | | | | | | |
| 5%-50% | | | | | | | |
| <50% | | | | | | | |
| Housing occupancy rate (90%-95%) | | | | | | | |
| <90% | | | | | | | |
| <98% | *X* | | | | | | |
| Median housing value (Middle 60%) | | | | | | | |
| <20th percentile | | | x | | | | |
| <80th percentile | | *X* | | | | | |
| Percent owner-occupied (50%-90%) | | | | | | | |
| <50% | | | | | | | |
| <90% | | | | | | | |
| Marital status | | | | | | | |
| Married | | *X* | | | | | |
| Divorced/separated | | *X* | *XX* | *XX* | | *XX* | |
| Never married | | *X* | *X* | *XX* | | *XX* | |
| Remarried | | *X* | | | | | |
| Widowed | | | | | | | |

TABLE 6-3 (Cont'd): Predictive Models for Drug and Alcohol Use Among Respondents Aged 18 to 49: 1988-1990

| | Alcohol | | | Marijuana | | Cocaine | |
|---|---|---|---|---|---|---|---|
| Predictors[a] | Abstinence in past month | Past month nonheavy use | Past month[b] heavy use | Any past month use | No past month use | Any past year use | No past year use |
| Employment status | | | | | | | |
| (full-time) | | | | | | x x | |
| Part-time | | | | | | | x |
| Unemployed | | | | x | | x | |
| Homemaker | x | | | | | | |
| Students | x | | | | | | |
| Other | | | | | | | |
| Number of jobs in past 5 years (1 or 2) | | | | | | | |
| None | x | | | | | | |
| 3 or more | | | x | x | | x | |
| Number of moves in past 5 years (none) | | | | | x | | |
| 1 or 2 | | | | | | | |
| 3 or more | | x | | x | | x x | |

a Reference categories to which others are compared are shown in parentheses
b Defined as five or more drinks on five or more days in the past 30 days
c Variables which are significant at p< .05 or less
d Highly predictive

SOURCE Off Ice of Technology Assessment, 1994, adapted from tables in National Institute on Drug Abuse, Socioeconomic and Demographic Correlates of Drug and Alcohol Use, 1992

to amplify the adverse reaction to alcohol consumption (57). Since this reaction discourages heavy drinking, the observation that it commonly occurs in some populations where alcoholism is relatively rare suggests that alcohol and aldehyde dehydrogenase mutations might be a major determinant of alcohol consumption, abuse, and dependence. This would seem to hold true for Taiwan and Japan where the reaction occurs in 30 to 50 percent of individuals. Research on these two enzymes among other racial and ethnic groups is scanty and inconclusive.

The role genetics plays in the heritability of alcohol and other drug problems has been studied for the past 30 years. While this topic is more thoroughly addressed in chapter 3, one point is worth mentioning here. Of the more than 30 family, twin, and adoption studies that have been completed, the vast majority have used white males as study subjects. Clearly, among different racial and ethnic groups the relationship between genetic heritability and increased susceptibility to alcohol and other drug problems is an area that deserves further study.

While race and ethnicity in and of themselves are not predictive risk factors for future substance abuse, by reviewing when, how, and why certain substances became problematic within different racial and ethnic groups, insight can be gained into the generational impact drugs have had on these populations. Four broad racial and ethnic groups (and one multiracial and ethnic group, see box 6-4) are discussed below in the following manner: historical perspectives; prevalence statistics; psychosocial and cultural antecedents; and selected prevention programs. A separate section on areas for future research is also included.

### *Native American Indians/Alaska Natives*

There are more than 1.5 million Americans Indians and Alaskan Natives throughout the United States, with vastly different languages and cultural beliefs. Even within the same tribe there maybe a good deal of cultural diversity, since differences exist between reservation and rural tribal members, and those residing in urban settings. While urban dwelling American Indians may constitute

## BOX 6-4: A Population at Risk—Migrant and Seasonal Farmworkers

Migrant and seasonal farmworkers (M/SFWs) are individuals "whose principal employment is in agriculture on a seasonal basis [and who have] been so employed within the last *24* months" (Public Law 100-386), Migratory workers are those "who establish for the purposes of such employment a temporary abode," while seasonal workers are those who meet the seasonal definition but are not migrant workers (Public Law 100-386), While seasonal is not explicitly defined in the public law, the Department of Agriculture defines a seasonal farmworker as one who performs 25 to 149 days of farm wage work in one year, and does not migrate,

Due to the transitory nature of the job and the employees, obtaining a precise estimate on the number of farmworkers is difficult. State data suggest that upwards of 4 million farmworkers are in the United States and Puerto Rico, and if ratios from the late 1970s hold true, approximately 30 percent (or 1 2 million) of these are migrants,

The racial and ethnic background of the farmworkers varies with the so-called "stream. " The East Coast stream is probably the most diverse with American blacks, Haitians, Jamaicans, Dominicans, Mexicans, Puerto Ricans, an increasing number of Central American Indians, and a small percentage of whites In the Midwest and West, the great majority of migrant farmworkers are of Mexican descent, although increasingly, Asian immigrants are making their way into the stream American Indians make up a substantial proportion of the farmworker population in the West and Southwest

Farmworkers are most often hired through a middle-person or "crewleader" who is usually in charge of negotiating length of employment, transportation, wages, housing, and meals It is not uncommon for migrant farmworkers to move anywhere from two to eleven times in a year Besides the physically taxing nature of the work, numerous environmental stressors (some unique to this population) increase the likelihood for alcohol and drug abuse, Some of these stressors include physically and socially Isolated camp locations; unsanitary overcrowded, and unsafe camp conditions, towns which often do not welcome the presence of farmworkers; long periods of separation from family members, feelings of boredom, isolation, and powerlessness, and language and cultural differences

The job's high mobility requirements hamper the collection of health data on this population. Anecdotal reformation from health care providers located at Migrant/Community Health Centers (M/CHCs) and local health departments cite alcohol and drug abuse problems as some of the most significant health issues faced by M/SFWs, followed by anxiety and depression (McCaw 1991) However, few quantitative or qualitative studies have documented substance abuse within this population One study

(continued)

more than 50 percent of the total Indian population, little is known concerning their health status (59).

The American Indians' introduction to alcohol dates back to the early 1600s and their initial interactions with European trappers and settlers. Much of the early trading between the Europeans and American Indians involved an exchange of alcohol. It was not long before alcohol became a considerable problem for many American Indian tribes. Some researchers speculate that because American Indians lacked a prior drinking history, or role model for moderate drinking practices, many tribes adopted a quick and copious style of drinking, consistently drinking to the point of intoxication. However, in other tribes, it is appears that being intoxicated was deemed unacceptable, and over time these tribes developed a "social" drinking style (35).

### Prevalence statistics

Studies among American Indian adolescents have shown that prevalence rates for licit and illicit drug use vary insignificantly between tribes (5,4).

## BOX 6-4 (Cont'd): A Population at Risk—Migrant and Seasonal Farmworkers

of black and Haitian farmworkers in upstate New York found that the majority of the heavy drinking on the migrant camps was done by older, single, black males, and that the drinking patterns of the study participants who traveled with their families differed little from Individuals in the general population To a large extent, this was attributed to the social controls family members exerted on one another (Mattera et al 1983) This is an important point, as the greater mechanization of farmwork has reduced the need for manual labor, and many of the farmworkers who previously traveled with their families can no longer afford to do so Anecdotal evidence suggests that the composition of the migrant workforce has been shifting toward one of single males, rather than families With this shift, a general decrease in social control among the migrant camps is likely to occur, and a greater number of alcohol and drug problems may begin to appear

Providing substance abuse prevention programs to M/SFWs is a challenge Few M/CHCs have the financial or personnel capabilities to implement substance abuse prevention programs Many farmworkers simply do not stay in one location long enough Language and cultural differences are vast, not to mention the geographical distances sometimes required to reach the camps, which often are located 20 to 30 miles away from the nearest social service and/or each other Two organizations (BOCES Geneseo Migrant Center in New York, NY, and Tri-County Community Health Center in Newton Grove, NC) have successfully Implemented similar types of programs based on the premise of providing weekend activities as an alternative to drinking and drug use. Full-day programs are normally held away from the camps, and include educational, creative, athletic, and cultural activities The activities are free and transportation is often provided However, farmworkers can attend only if they have not been drinking or using drugs

Clearly, greater research is necessary to adequately document the prevalence of alcohol and drug use within the migrant streams, as well as the changing composition of the streams, and how this may affect substance use Little is known about the differences in substance use between the varying racial and ethnic groups within the streams, and how the growing number of Immigrants from war-torn countnes will affect the health problems seen within the streams

SOURCES U S Congress, Off Ice of Technology Assessment, *Health Care /n Rural America, OTA-H-434* (Washington, DC U S Government Printing Off Ice, September 1990) K McCaw, "Migrant Workers, " *C//mea/ Manual of Substance Abuse,* J Kinney (ed )(St Louis, MO Mosby-Year Book, Inc 1991) G Mattera, J Watson, S Kunitz, et al "Alcohol Use Among Migrant Laborers, " unpublished report for the New York State Health Research Council, Albany, NY, 1983

However, compared to non-Indian youth, Indian adolescents consistently begin using alcohol, illicit substances, cigarettes, and inhalants at a younger age, at higher rates, and in combination with each other (10,60,69), With regard to alcohol, there is often a great deal of peer pressure to drink as the *Indian thing to do* (42). Studies have shown that Indian youth are three times more likely to be involved in alcohol-related offenses than their white or Hispanic counterparts. A 1982 study indicated that alcohol was involved in as many as 58 percent of Indian juvenile arrests (63 percent for males, 37 percent for females).

In some tribes, up to 30 percent of American Indian adolescents have used inhalants, most notably, gasoline and glue. The age group with the highest rate of inhalant use was 11- to 13-year-olds. Contrary to the popular belief that inhalant abuse occurs primarily among boys, research among American Indians revealed that eighth grade girls and boys were equally likely to have inhaled volatile substances. While the rate for Indian inhalant use decreases substantially among high school age youth (down to 4 percent), it is still 2.5 times greater than the rate for non-Indian youth of that age. Interestingly, while the rate of

inhalant use has remained relatively stable among Indian youth since 1984, there has been a steady rise of reported use among non-Indian adolescents (66).

While there is no substantial difference in alcohol use among various tribal adolescents, rates do differ between the drinking patterns of tribal adults. Contrary to the still pervasive drunken Indian stereotype, many tribes have levels of adult alcohol use *below* the national average (42). Consistent with the U.S. population as a whole, American Indian males are more likely to drink than females (42,35). In some tribes it is permissible for adolescent females to experiment with alcohol, with the understanding that when adulthood is reached they are expected to abstain or drink only rarely.

As is true for adolescents, adult Indians encounter an increased rate of legal complications due to alcohol and drug use. Data on urban American Indians has shown that while under the influence of alcohol and/or other drugs, they are arrested at four times the rate for blacks and 10 times the rate for whites (44).

Few statistics exist to quantify illicit substance use among the adult American Indian population. While alcohol is clearly a major problem for some tribes, future research efforts should include data on the use of illicit substances.

### Psychosocial/cultural antecedents

The relationship between the majority of American Indians and the early settlers was suffused with violence, distrust, deceit, and perhaps more than anything, forcible and abrupt change. The food American Indians ate, how they dressed, where and how they lived, what language they spoke, tribal governing structures, and how they worshiped were, for the most part, forcibly altered to conform with the newly dominant society's cultural and moral views. While these involuntary changes occurred several generations ago, their impact on the American Indian culture should not be underestimated.

In some instances, tribal traditions, languages, and methods of worship were lost. Thousands of American Indian children, some as young as 3 years old, were removed from their families and placed in federally funded and run boarding schools, where physical, verbal, and sexual abuse were common. Nuclear and extended families were dispersed, and with them, a vital social support system. Acculturation issues abounded. Children returned home from boarding schools unable to speak their native language, or understand the importance of their cultural traditions. These cultural problems are multigenerational, and current studies reveal that American Indian children report more emotional problems, mental health problems, and low self-esteem than non-Indian children (60). While the relationship between many of these psychosocial/cultural antecedents and increased substance abuse levels has yet to be formally evaluated, clearly the American Indian people have been, and in some may continue to be, subjected to cultural disruption.

### Prevention programs

For substance abuse prevention programs to be effective within the American Indian population it is important to realize the diversity that exists between tribes and villages. For example, a specific program tailored to New Mexico Navajos living on the Navajo reservation may be culturally unacceptable to Winnebago Indians living in urban Minneapolis, MN. However, several fairly universal themes permeate American Indian culture: the importance of tribal identity, which is an individual's membership or affiliation with specific tribe(s); a belief that each human is a multidimensional being made up of a body, mind, and spirit, and that the spirit world coexists and intermingles with the physical world; the importance of sharing and generosity, allegiance to one's family and community, respect for elders, noninterference, orientation to present time, and harmony with nature; the importance of an oral tradition as a primary method of teaching values, attitudes, legends, and stories; an emphasis on observant, reflective, and integrative skills which lead to communication patterns that give virtue to silence, listening, nonverbal cues, and learning by example; and the

presence of rituals and symbols that are acknowledged for their underlying significance, which is expected to emerge as time and experience go on (72).

One example that assists communities in the development of culturally sensitive programs is an instructional publication compiled by The Four Worlds Development Project in Alberta, Canada. Information has been collected on health promotion and prevention efforts by various indigenous people from around the world. The text assists American Indian communities in tailoring program planning, training, and implementation techniques with their culture beliefs and specific needs (24).

### *Blacks*

A great deal of diversity exists within the black community. One reflection of that diversity is the use of the terms *African American* and *black*. Some researchers use *African American* to define black persons who are direct descendants of men and women brought to the United States as slaves, whereas *blacks is* used to define all people and cultures of African descent, including black people from the West Indies, Africa, and the Americas. At times, the two terms are used interchangeably (72). For this section, both terms will be utilized where appropriate.

#### Historically

Many of the first blacks to arrive in the United States did so as slaves. Plantation owners were responsible for regulating much of their slaves' alcohol consumption. During holidays, alcohol was routinely distributed to the slaves in reward for their loyalty and hard work, and the subsequent drunken revelries were tolerated. This controlled permissiveness began to change in the early 1800s, as clandestine groups of black slaves began their quest for freedom. It was at this point that blacks were prohibited from owning stills, or even being in possession of alcoholic beverages. These laws persisted after the Civil War, when technically, blacks had been granted citizenship (14).

Spanning the late 1800s through the late 1960s, hundreds of thousands of blacks left the South and, looking for work, headed for northern cities. This period was later described as the "Great Migration," with a total outmigration estimated at 4.3 million individuals (72,1 4). This outmigration contributed substantially to defining the large number of blacks currently found in many of the northern urban areas. Unfortunately, many of those seeking work did not find it, nor did they find that they were free from racism, discrimination, and oppression, Slowly, the numbers leaving the South decreased, and by the 1970s there was actually some migration back into the southern states by both northern-born blacks and individuals returning home after unsuccessful moves to the North.

#### Prevalence statistics

Differences in adolescent drug use among high school seniors by race and ethnicity were discussed earlier in this chapter (see box 6-A). Among this group, alcohol, cigarette, and illicit drug use was **lowest** among black and Asian youth, even after inclusion of background and lifestyle factors. Obviously, a drawback to this type of survey is that high school dropouts are not included in the analyses. The 1991 event dropout rate (which measures the proportion of individuals who dropped out of school over a specified time period) for grades 10 to 12, ages 15 to 24, reveal dropout percentages of 3.2 for whites, 6.0 for blacks, and 7.3 for Hispanics (63). While the event dropout rate for blacks is double that of white students, low alcohol and drug usage rates have also been found among black eighth and tenth graders, so the low rate of substance use among black twelfth graders cannot be due entirely to dropout rates (75).

While *use* of alcohol, cigarettes, and illicit drugs is relatively low among blacks, data on heavy or frequent use of such substances differs. The 1991 NHSDA data for individuals aged 12 to 20 found that 7.3 percent of whites reported heavy alcohol use (defined as having 5 or more drinks on

one occasion on **5** or more days in the past 30 days), Hispanics reported 3.9 percent, and blacks reported 2.7 percent. However, for those individuals aged 21 or older, heavy alcohol use did not differ significantly between whites and blacks (5.0 vs. 6.0 percent), but was significantly higher among Hispanics (6.6 percent) (77). Other studies on heavy alcohol use, by gender, have shown that white men aged 18 to 29 report the highest prevalence of heavy drinking, which then declined in subsequent age groups. Conversely, the abstention rate for black males was highest among those aged 18 to 29, while subsequent age groups showed significantly increased levels of heavy drinking—among whom half report either frequent heavy or frequent high maximum drinking (70). Similarly, white women in the 18 to 29 age group were significantly more likely to drink, and to drink heavily, than were young black women (67).

Past-month use (which does not necessarily constitute abuse) of an illicit substance by race and ethnicity was discussed at the beginning of this section (see figure **6-2).** However, the 1992 NHSDA also contains more specific data for some of the most commonly used substances such as marijuana and cocaine. Of the blacks age 12 and older surveyed, 3.2 reported using marijuana once a week or more compared to 2.5 percent for whites and Hispanics. Blacks also had the highest reported weekly use of cocaine (0.5 percent) compared to Hispanic and white percentages (0.4 and 0.3, respectively) (78).

Persistence of drug use has also been used as another indicator of substance use severity and is measured by percent of monthly users divided by percent of lifetime users. It has been shown that blacks and Hispanics have a different pattern of drug persistence from that of whites. Data on cocaine use analyzed from the 1990 NHSDA showed that the persistence rate for blacks age 18 to 25 was almost three times that of whites (.29 vs.. 09), and among those aged 26 to 34, the rate for blacks was four times higher than that for whites (.21 vs. .05). In both age groups, the persistence rates for Hispanics were between those of blacks and whites. It is important to note that the differences in persistence did not appear to extend to alcohol and marijuana (32).

### Psychosocial/cultural antecedents

At least initially, many blacks did not arrive in the United States voluntarily. The legacy of slavery has shaped much of black culture. Black slaves struggled with many of the same issues as American Indians: loss of languages, traditions, and religious beliefs; assimilation and acculturation issues; and the breakup of nuclear and extended families. Not allowed to express their original languages, cultures, and beliefs, blacks attempted to establish new cultural identities amidst oppression, segregation, and racism.

Hypotheses concerning alcoholism among black males have been proposed by several studies. Some researchers believe that the increase in the number of heavy drinkers among black males in their thirties may be due to feelings of frustration and failure concerning career expectations. A complementary view points to the combination of high unemployment rates among black males coupled with the large numbers of liquor stores found in many urban black neighborhoods, as having contributed to the alcohol problems faced by black men ( 14,82).

### Prevention programs

With respect to the use of alcohol and other drugs, common themes link blacks. In general, social stratification, church and community involvement, and racial identity are thought to be important variables in attitudes toward alcohol and drug use (72, 14). The level of importance will vary between individuals and groups depending on environmental factors. One program cited as exemplary by the Center for Substance Abuse Prevention (CSAP) is called Super II, and targets primarily at risk, black inner-city youths 11 to 17 and their parents. The design and implementation of the program emphasizes holism and cultural competence, viewing them as crucial in reducing the strength of risk factors and increasing the strength of resiliency factors. The program takes place through already established agencies in the communities (Boys Clubs and Girls Clubs) and incor-

porates the childrens' caregivers, youth and recreational workers, police officials, local corporations, and a variety of social service agencies. The first-year evaluation report found reductions in four of five major categories of alcohol- and drug- related behavior. These included frequency of use and amount of use, number of modalities of use, alcohol- and drug-related behavior problems, and media influenceability (71).

Another antidrug abuse campaign is being waged by the Congress of National Black Churches, Inc. (CNBC), a national nonprofit religious organization comprised of a variety of denominations. Through a variety of programs, the CNBC clergy are mobilizing, creating, and coordinating groups of individuals interested in bringing about positive change in their communities. Program strategies are implemented in partnership with the police, criminal justice agencies, school systems, social service agencies, private organization and businesses, and informal community networks to reduce the supply of and demand for drugs.

## *Hispanics*

### Historically

The term *Hispanic* was first used by the U.S. Census Bureau in 1980 to designate those individuals who resided in the United States and whose cultural origins were in Mexico, Puerto Rico, Cuba, Central America, and other Latin American countries. Not all members of this group accept the term and prefer to use phrases such as *Latino* or *la raza* (literally, "the race"). Data from the 1990 census reveal an Hispanic population of more than 20 million, and projections indicate that Hispanics will be the largest minority group in the United States sometime between the years 2000 and 2010. Hispanics of Mexican origin, by far the largest Hispanic group (63 percent), are clustered in the southwest, particularly California and Texas. Puerto Ricans, excluding those living on the island of Puerto Rico, are the second largest subgroup (12 percent) and live primarily in the Northeast, especially in and around New York City, New York. Cubans (5 percent) live primarily around their port of entry, Miami, Florida, though large numbers are found in New Jersey and New York. Dominicans, who reside primarily in the Northeastern Atlantic States, are also beginning to grow in number. In the past 10 years, there has been a large immigration of Central Americans to the United States. These individuals have come primarily from civil war-plagued countries including Guatemala, El Salvador, and Nicaragua. It is highly possible that many of the problems faced by newly arrived Hispanic immigrants maybe exacerbated among this population who have left their countries involuntarily. Refugees escaping political turmoil or open warfare often show signs of Post Traumatic Stress Disorder (72).

### Prevalence statistics

NIDA data collected from 1975 to 1991 on drug use among twelfth graders, as well as data from 1991 for eighth and tenth graders, reveal the following for Hispanic students: as a group, Hispanic youth had the highest lifetime and annual prevalence rates in the senior year for PCP, cocaine, crack, heroin, ice, and steroids, compared to whites and blacks, and the rates for crack and steroid use were particularly high; among eighth graders, Hispanics had higher rates of past month use for virtually all the drugs surveyed including, cocaine, heroin, inhalants, alcohol, marijuana, hallucinogens, and cigarettes. In other words, in eighth grade, before a considerable number of students has dropped out, Hispanic youth have the highest prevalence of nearly all drug use, but by twelfth grade, whites have the highest usage rates. The researchers suggest two possible explanations, which are not necessarily exclusive. The first being that the high dropout rate for Hispanics in later grades (in some areas as high as 40 percent) is causing a shift in the rates, and the second is that while Hispanic youth begin experimenting earlier, white youth catch up by the later grades (75).

National statistics for 1992 of past-month use of any illicit substance indicated that rates for Hispanics and whites were not significantly different, and were slightly lower than those for blacks (see

figure 6-2). The same database also revealed that for the illicit substances measured, Hispanic rates either fell between black and white rates, or were the lowest rates reported by an ethnic group. The only exception would be the heavy alcohol use data (defined as having 5 or more drinks on one occasion on 5 or more days within the past 30 days) for 1991 (1992 data not yet available) which showed that Hispanics aged 21 or older reported significantly more heavy alcohol use within the past month as compared to whites and blacks (77).

### Psychosocial/cultural antecedents

*Dignidad, respeto,* confianza--dignity, respect, and trust—are important elements in the Hispanic culture. Like many immigrants to the United States, Hispanics deal with language, cultural, racial, and economic barriers. These barriers and how they are handled within the Hispanic culture have a great deal to do with subsequent alcohol and drug problems. To a large extent, drinking (at times heavily) among Hispanic males is not only expected, but encouraged. Much of the research literature has therefore centered around alcohol and its misuse. To be able to drink heavily and maintain "control" is a valued characteristic among most Hispanic men (38). Personal identities for a vast majority of Hispanic men are intricately entwined with the notion of *machismo,* which generally connotes strength, masculinity, independence, and responsibility (1). The man of the family is expected to provide for and take care of his wife and children. For those who may be unable to fulfill this role, due to difficulties learning English and/or procuring employment, the social drinking pattern can change from one of low frequency and high quantity, to high frequency and high quantity (38,1 ). This drinking pattern varies between Hispanic groups, however. A study completed in 1981 found that drinking levels among newly arrived Dominicans, Guatemalans, and Puerto Ricans, when compared to preimmigration levels, decreased, increased, and remained the same, respectively (1).

As is relatively true for other cultures, heavy drinking is not condoned for Hispanic women. This is not to say that it does not exist. While the majority of first generation Hispanic women generally abstain or drink very little, changes in drinking patterns among the following generations have been observed. To the distress of many first generational Hispanic families, as their daughters and granddaughters become increasingly acculturated, the drinking patterns and alcohol problems more closely mirror those found in the general population (26). Another change observed among more acculturated Hispanic women is the diminishment of *marianismo,* which is the female complement to *machismo,* and encompasses such behaviors as submissiveness, humility, tolerance, virtuosity, and devotion to the male (whether father, husband, or first son).

### Prevention programs

Important intergroup differences need to be understood for the planning, implementation, and evaluation of substance abuse prevention programs. For example, while two immigrants, one Mexican and the other El Salvadorian, may both speak Spanish and may both be experiencing many of the same difficulties in adjusting to life in the United States, they are very likely to have had vastly different lifetime and cultural experiences (72).

Funds from CSAP as well as the National Institute on Alcohol Abuse and Alcoholism (NIAAA) have been distributed to several demonstration projects throughout the United States and Puerto Rico that target high-risk Hispanic youth and their families. Many of these programs are similar to others previously outlined in this report in their attempt to be as comprehensive as possible through the coordination of families, schools, law enforcement, and local social services and businesses. Several of the programs are creating their own audiovisual and written materials in Spanish, others are utilizing activities such as English courses, puppet shows, and live theater performances, while others employ peer group counseling and mentoring programs (69).

### *Asian and Pacific Island Americans*

#### Historically

According to the U.S. Census Bureau, Asian and Pacific Island Americans are the fastest growing population in the United States. Between 1980 and 1988, the number of Asian and Pacific Island Americans increased by 76 percent compared with an increase of 36 percent within the Hispanic population. Similar to the other racial and ethnic categories, the term Asian and Pacific Island American gives one the impression of homogeneity, while in reality, over 60 different racial and ethnic groups are lumped in this bracket. Some of the diverse populations included in this group are Hawaiians, Guamanians, Filipinos, Thais, Bengalis, and Sri Lankans. Beside the obvious differences in language, and cultural norms and beliefs, is the degree to which different subpopulations have acculturated and/or assimilated to the dominant culture. Many Chinese and Japanese families have been in the United States for three generations or more, which is in sharp contrast to the majority of first-generation Vietnamese, Koreans, Asian Indians, and Filipinos (72,85).

#### Prevalence statistics

Research on substance use and abuse within the Asian and Pacific Island American population appears to be sporadic, and often limited to alcohol. While the three national surveys NHSDA, the National Adolescent School Health Survey, and the High School Senior Survey, all collect separate data for Asian and Pacific Island Americans, only the High School Senior Survey routinely analyzes the data separately. Due to small sample sizes, the remaining two surveys included Asian and Pacific Islanders under the racial and ethnic category of "other."

Research on alcohol consumption patterns among adult Asian and Pacific Island Americans consistently shows that this population drinks substantially less than whites and Hispanics, and slightly less than blacks. Though subgroup variation does exist, as data reveal, native Hawaiians drink at levels comparable to those of whites, among mainland Asian Americans, Japanese Americans drink the most, followed by Koreans and Chinese Americans. However, Japanese, Korean, and Filipino men all have roughly the same percentage of heavy drinkers at 28 percent. This style of heavy drinking is typically associated with business entertainment and after work socializing (68). Among Asian and Pacific Island American women, four-fifths of Korean and Filipino women were reported to be abstainers, as were two-thirds of Chinese women, and one-third of Japanese women. Among women who drank, the percentage who did so heavily varied: 12 percent for Japanese women; less than 4 percent for Filipino women; and virtually none for Chinese and Korean women (68). A similar statistic for white women showed 14.5 percent reported drinking heavily (73). Evidence suggests, however, that the prevalence of drinking may be on the rise among both men and women Asian and Pacific Island Americans, although the exact reasons for this remain unclear. Some researchers have suggested that paralleling other immigrant populations, the more acculturated and assimilated generations will tend to adopt the drinking patterns of the dominant culture. Yet other researchers point to the fact that a significant number of second and third generation Asian and Pacific Island Americans have not adopted a more copious style of drinking.

For adolescent Asian Americans, the majority of the studies mirrors the findings for the adults—this group consistently has the lowest prevalence of alcohol and other drug use for all racial and ethnic groups with the possible exception of black youth. Although, a prospective study conducted in North Carolina found an alarming increase in reported alcohol and other drug use among Asian Americans over a three-year period in the late 1980s. The reason for this increase at a time when prevalence rates for other races and ethnicities was decreasing remains unknown (72). Another study on youth in California reported that Chinese American youth used quaaludes twice as often as white and Hispanic youth, and five times as often as black youth **(68).** Drinking statistics for Asian American youth are again similar to those re-

ported by the adult population, that is, their overall prevalence rate is one of the lowest, but statistics for heavy drinking are similar to those found among white youth (72).

#### Psychosocial/cultural antecedents

**Why** does this population have such low overall rates of alcohol and other drug use? The diversity present within the Asian and Pacific Island American group makes it impossible to list all the different cultural factors that could influence alcohol and drug use patterns. However, among many of the subpopulations, anthropologists and substance abuse experts have found the existence of the following philosophies: moderation, family reputation, humility, keeping a low profile, negative community sanctions on excessive drinking and behavior, and the impact of parental drinking practices (83). Among Chinese specifically, alcohol is in an important part of many religious and celebratory ceremonies, yet excessive use is strongly discouraged.

One study in California uncovered additional behavioral factors that influenced drinking patterns among some Asian American men. Japanese respondents were heavily influenced by their friends' drinking; among Chinese men, those with more education were more likely to drink; and Korean men were strongly influenced by their parents' drinking habits (68).

Few researchers have examined psychosocial influences on Asian and Pacific Island American adolescent drinking or other drug use. One factor which has been mentioned, though, is the pressure Asian American youth, in particular, are under to succeed, especially academical y. Thirty-four percent of Asian Americans are college educated, more than twice that of the United States population as a whole. Those with the least amount of college education were American Indians (7.7 percent) and Pacific Islanders (9.3 percent). Asian parents are similar to parents, in general, in their hopes for their children's success. However, among some subpopulations (notably Japanese, Korean, and Chinese) the feelings for their children are often tied to the child's academic achievement. When their children perform poorly in school, some parents respond with strong criticism, disapproval, and shame. This can understandably add a substantial amount of stress to an adolescent who may already be coping with language and cultural differences (72).

#### Prevention programs

Mainstream culture in the United States, to a great degree, emphasizes individuality, competitiveness, and monetary success. Conversely, for many Asian and Pacific Island Americans the qualities most stressed are the needs of the family, sharing and generosity, and a belief in *who you are* rather than *what you own.* Because the extended family is so important in many of the cultures, it is often the first group that an individual with problems will turn to versus an "outsider" or social service agency. Substance abuse prevention practitioners need to be aware of the strong resistance within many Asian and Pacific Island Americans to seek outside assistance.

One innovative substance abuse program entitled Na Keiki O Ka'Aina (Children of the Land) is being implemented in Oahu, Hawaii. Children attending the local Makaha elementary school work several hours a week on a farm where they learn to care for the land, their environment, and themselves as alternatives to lifestyles that rely on alcohol and other drugs. The program uses the cultural values of native Hawaiians, which emphasize "warm, open friendship and love," love of the earth, and other spiritual values. Since the program's inception, class behavior has noticeably improved, English scores have increased, and a survey measuring drug use in the district schools showed that Makaha school was the only school that reported a decrease (74).

### *Areas for Future Research Among Different Racial and Ethnic Groups*

While this section of the report has reiterated the need to view racial and ethnic groups as heterogeneous, the majority of substance abuse data is not collected or examined in this way. To date, a variety of distinct cultures are usually grouped under

one classification, and generalizations are made concerning this group's drug use. While substance abuse prevention programs are often better tailored to specific subpopulations and cultures, it is virtually impossible to adequately evaluate these programs when little baseline substance abuse data exists for specific subpopulations. There is therefore room for improvement in the collection of prevalence data on alcohol and other drug use and abuse among distinct racial and ethnic groups. Furthermore, long-term prospective studies, which are essential for understanding risk and protective factors specific to different groups, are extremely scarce.

Biomedical research on different racial and ethnic groups has also been inconclusive and scanty (with the possible exception of alcohol research and Asians).

## ECONOMICS

Economics can be viewed as a factor in individual substance abuse in two ways. In areas where substance abuse is already well established and viable employment opportunities are scarce, selling illicit substances can seem very appealing. Several questions arise from this scenario. Are individuals lured into the world of illegal drug sales by income potential? And, are drug dealers more 1ikely to become drug abusers because they are dealers? Both of these questions have been addressed under the first section.

A parallel issue is that of poverty and the daily stresses encountered by individuals living in chronically poor areas. Do individuals living in these poor areas abuse substances in greater numbers or are fewer social services available in these areas, and thus the consequences from substance abuse are more acutely felt and visible?

### Generated Income

While few studies have attempted to **ascertain the** individual incomes of drug dealers, two studies have concentrated on the street sale of illicit drugs by urban youth (2 1,52). The research revealed that individual dealers reported mean gross monthly incomes of $3,558 to $5,934. Even if these self-reported earnings were exaggerated, this sum of money is clearly more than many urban youth could hope to obtain in legitimate jobs at a median of $7 per hour.

This earning potential may be a serious obstacle to prevention, intervention, and treatment programs targeted toward urban adolescents. The staff at an innovative treatment program for drug dealers in Baltimore, Maryland, has discovered the difficulties former dealers have in giving up the fast lifestyles they once led.

> Most dealers say they do it because of the money," says a staff counselor. "They can't see working at McDonald's for minimum wage when they're making $500 to $1,000 per day," he adds. Counselors try to help clients think beyond the idea of making fast money to the moral, social and legal issues associated with drug dealing. They find, however, that the moral issue is not always clear-cut. In many cases, clients are supporting their families and it is hard for them to see they are doing something wrong when they are paying the bills.
>
> Overall, counselors say their clients are addicted to the money. "What we do is help them see what is all around them, what they're doing to themselves and their community by selling drugs (48).

The potential for monetary gain may be especially true within the crack trade. A young black male from San Francisco, California, explained his preference for the immediate rewards of selling crack over the seemingly meaningless rituals of school:

> Forget about school. I'd rather have a life of selling drugs. . . When you go to school, you do nothing. You sit around, have books in your backpack, take 'em home, do your homework, come back to school, get some grade. When you sell drugs, see, I had satisfaction of seeing my work, getting some money for it (22).

It would appear then that for many urban youth, selling illicit drugs supplies purpose, companionship, and income without compromising dignity. More money can be gained from the sale of illicit drugs than through petty crimes, and certainly more than through minimum wage jobs.

Another issue to be addressed is the dealer-turned-client. From the two previously cited studies, dealers were estimated to spend between 59 and 71 percent of their income each month on the purchase of illicit drugs. For example, out of $3,558 gross per month, $1,226 was spent purchasing additional drugs for business, $883 was spent on drugs for personal consumption, and an additional $533 on expenses associated with drug dealing.

The Urban Institute has also reviewed the relationship between using and selling drugs. Its study population was composed of 387 inner-city adolescent males of ninth- and tenth- grade age. Of this sample, 79.6 percent reported that they neither used nor sold drugs within the past year. Of the remainder, 19.0 percent reported both using and selling drugs, 44.3 percent reported selling only, and 36.7 percent reported using only. They also discovered that the greater the level of involvement in either using or selling, the higher the likelihood of doing both ( 13).

In summary, the research completed thus far neither confirms nor negates the possible influence income potential has on luring individuals into drug dealing. Nor can one conclude that drug dealers are more likely to become substance abusers than nondealers.

## Poverty

Alcohol and drug problems are present not only among the poor, but are poor individuals at greater risk for developing these problems? While a relatively straight forward question, not only is poverty difficult to define, but drawing conclusions concerning an individual's potential for future substance abuse based on one or two variables, such as family income or educational level, is overly simplistic and deceptive. To adequately review this question, a milieu of both individual and aggregate measures should be present in any analysis done.

In recent years, great attention has been paid to the plight of the urban poor, many of whom are minorities. These inner-city communities are often riddled with high rates of crime, violence, unemployment, and inadequate social and medical services. For individuals living in these localities, the consequences of these problems are serious and far-reaching. Yet according to the 1980 census only 9 percent of *all* the poor, and 21 percent of all the poor blacks, lived in these types of areas.

> To define the problems of the urban poor as predominantly "black problems" does a disservice to the two-thirds of African Americans who are not poor, as well as to the two-thirds of the poor in our central cities who are not black (8).

Poverty within rural communities, while lacking much of the violence and crime of urban areas, is no less oppressive. In 1987, compared with the general population, rural residents were less likely to be employed and to have completed high school. They had lower average incomes and higher poverty rates than did urban residents, and one out of every six rural families lived in poverty (compared with one in eight urban families). This ratio approached one out of two for black rural families. Areas of chronic poverty were concentrated in the South, where 25 million of the Nation's 57 million rural residents live (48 percent), and where four out of every ten rural residents were poor, elderly, or both (61).

To assess poverty and its relationship to alcohol and drug abuse problems, one must find appropriate measures. Some researchers have utilized the Federal guidelines for poverty, while others employ measures of Socioeconomic Status (SES), such as educational level and household income. To date, the largest and most comprehensive analysis of SES variables and substance use has been accomplished by NIDA (76). Both bivariate and multivariate analyses were completed on data collected in 1988 and 1990 from NHSDA (see box 6-C).

The NIDA report has two major limitations. First, the analysis focused on indicators of drug and alcohol ***use,*** rather than indicators of problem use or hard-core use. While the report has categories *for frequent/heavy use* and ***recent use,*** it cannot be assumed that individuals who reported such use had alcohol or drug *problems.* Secondly, the

report lacks data for transient, homeless, or institutionalized individuals, many of whom have serious alcohol and/or drug problems.

Table 6-3 presents the findings from the multivariate analysis of the NHSDA data. The SES variables pertinent to a possible link between poverty and substance use are educational level, occupation of chief wage earner, employment status, number of jobs held in past 5 years, median housing value, and percent of housing that is owned. Neither personal income nor household income were included in the analysis, as personal income was most meaningful only for persons who worked and household income data were not available in the 1988 survey.

Alcohol consumption within the past month was measured on three levels: abstinence; non-heavy use; and heavy use. Marijuana use was measured by any past-month use and cocaine use was measured by any past-year use (both categories could include frequent as well as casual users). Major findings from the analysis include:

- SES variables associated with poverty and predictive of **past month abstinence** from alcohol were: not having worked in the past 5 years and having lived in a census block with a high percentage of owner occupancy. For users, versus abstainers, SES attributes predictive of **non-heavy alcohol use** included having attended college (regardless of completion) and living in census areas with high housing values. Significant for **heavy alcohol use** was not having completed high school, holding three or more jobs in the past 5 years, and living in a census area with low housing values. No employment status or occupational categories were found to be independently predictive of heavy alcohol use.
- For any **past-month marijuana use** the independent SES predictors associated with poverty were being unemployed and having held three or more jobs in the past 5 years. Individuals who reported **no marijuana use** in the past month were more likely to have had some degree of college participation.
- Many of the SES predictors for **cocaine use in the past year** were similar to those identified for marijuana use: being unemployed and having worked three or more jobs in the past 5 years. SES characteristics predictive of **no reported cocaine use** in the past year were being a college graduate and having a part-time job.

This type of analysis is an exercise in inclusion and exclusion. A myriad of individual and aggregate characteristics are initially considered in the equation and, depending on the outcome of interest, whether it be heavy alcohol use or marijuana use in the past month, different variables will show themselves to be either predictive or not predictive of the outcome. Because personal income and household income were not included in the multivariate analysis, but are often used as SES measures for poverty, tables 6-4 and 6-5 depict the bivariate analysis done by NIDA (76). Again, this analysis reveals *associations,* not causality.

Personal income (which is highly correlated with an individual's age and sex) was examined only for respondents who reported working full time during the year prior to the survey. Associations between personal income and drug use were significant for most drugs. For every drug use measure (except past-month use of alcohol), plus heavy use of alcohol, the percentage of users declined as the income level rose. Differences between income levels for frequent use of marijuana and cocaine, concurrent heavy use of alcohol with marijuana, and use of psychotherapeutics, hallucinogens, inhalants, and crack were all statistically significant and more than twice as common in the lowest income group as in the highest. Low income was also associated with higher rates of abstinence from alcohol as well as higher rates of heavy drinking.

The associations between household income (which is less affected by age and sex) and drug and alcohol use were considerably weaker than those observed for personal income. The only statistically significant associations were for alcohol use, concurrent heavy alcohol use with marijuana, and use of hallucinogens. Those with household

TABLE 6-4: Percentage of Full-Time Employed Adults Reporting Use of Alcohol and Illicit Drugs, by Personal Income: 1988/1990

| Drug use category (Number of respondents) | Personal income <$9,000 (996) | $9,000-$29,999 (4,172) | $30,000+ (1,564) | Significance |
|---|---|---|---|---|
| | Percentage of users and nonusers | | | |
| **Alcohol** | | | | |
| **No** use in past month | *43.4* | *38.7* | *27.9* | **s** |
| Use in past month[a] | *49.0* | *54.5* | *66.8* | |
| Heavy use[b] | *7.7* | *6.8* | *5.3* | |
| **Marijuana** | | | | |
| **No** use in past month | **90.4** | **93.0** | **96.3** | |
| Use in past month[a] | **4.9** | 4.1 | **2,0** | |
| Frequent use[c] | *4.7* | **3.0** | **1.7** | |
| **Cocaine** | | | | |
| **No** use in past year | *93.6* | *94.7* | *96.6* | |
| Use in past year[a] | *4,4* | *3.7* | *2.7* | |
| Frequent use[a] | *2,0* | 1.6 | **0.7** | |
| | Percentage of users | | | |
| **Multiple use[e]** | | | | |
| Alcohol/marijuana | **3.4** | **2.8** | 1.1 | **s** |
| Alcohol/cocaine | 1.8 | 1.4 | *1.2* | NS |
| Alcohol/psychotherapeutic | **2.0** | *1.0* | **0.9** | NS |
| **Other drugs in past year** | | | | |
| Psychotherapeutics | **9.1** | 5.1 | 4.8 | **s** |
| Hallucinogens | **3.8** | 1.5 | **0.4** | **s** |
| Inhalants | **3.9** | 1.1 | **0.7** | **s** |
| Crack (in lifetime) | **2.0** | **2.0** | **1,0** | **s** |
| Heroin (in lifetime) | **2,2** | **1.1** | **0.8** | NS |

NS = Not significant
S = Significant at p< .05 or less
[a] Excluding heavy use (alcohol) or frequent use (marijuana and cocaine)
[b] Defined as having five or more drinks on five or more days in past month
[c] Defined as using marijuana five or more times in past month
[d] Defined as using cocaine once in a month or more often in past year
[e] Heavy use of alcohol in past month and any use of marijuana (past month) or heavy use of alcohol in past month plus cocaine/psychotherapeutics (past year)

SOURCE National Institute on Drug Abuse, National Household Survey on Drug Abuse, 1988 and 1990

incomes of $40,000 or higher were about twice as likely as those with incomes of less than $12,000 to have used any amount of alcohol in the past month. However, the rates of heavy drinking differed little across the income levels. Other categories of drug use appear to be slightly less common among the wealthiest households, but, in general, drug use was not strongly related to household income.

From these types of analyses, a straightforward "yes or no" response to the initial question, which linked poverty to increased individual risk for

## TABLE 6-5: Percentage of Adults Reporting Use of Alcohol and Illicit Drugs, by Household Income: 1990

| Drug use category (Number of respondents) | Household income <$12,000 (1,236) | $12,000-$39,999 (3,454) | $40,000+ (2,392) | Significance |
|---|---|---|---|---|
| | Percentage of users and nonusers | | | |
| **Alcohol** | | | | |
| **No** use in past month | 64.1 | *48.5* | **34.6** | S |
| Use in past month[a] | 30.8 | *45.7* | **607** | |
| Heavy use[b] | 5.1 | *5.8* | **4,7** | |
| **Marijuana** | | | | |
| **No** use in past month | *933* | *94.9* | *95.7* | NS |
| Use in past month[a] | *41* | **3.0** | *2.2* | |
| Frequent use[c] | *2 6* | **2.1** | *2.1* | |
| Cocaine | | | | |
| No use in past year | **96.2** | **97.0** | *96.9* | NS |
| Use in past year[a] | **25** | **2.1** | **2.0** | |
| Frequent use[d] | **1.3** | **0.9** | **1,1** | |
| | Percentage of users | | | |
| **Multiple use[e]** | | | | |
| Alcohol/marijuana | *2.3* | *2.3* | *1.2* | S |
| Alcohol/cocaine | **1.0** | **1.0** | **0.9** | NS |
| Alcohol/psychotherapeutic | *0.8* | **0.7** | **0.8** | NS |
| **Other drugs in past year** | | | | |
| Psychotherapeutics | *3.7* | *4.2* | **3.7** | NS |
| Hallucinogens | **1.0** | 1.3 | **0.6** | S |
| Inhalants | *0.8* | **1.0** | **0.7** | NS |
| Crack (in lifetime) | 1.6 | **1.5** | **1.2** | NS |
| Heroin (in lifetime) | **1.0** | **0.8** | **0.8** | NS |

NS = Not significant
S = Significant at p<.05 or less
[a] Excluding heavy use (alcohol) or frequent use (marijuana and cocaine)
b Defined as having five or more drinks on five or more days in past month
[c] Defined as using marijuana five or more times in past month
d Defined as using cocaine once in a month or more often in past year
e Heavy use of alcohol in past month and any use of marijuana (past month) or heavy use of alcohol in past month plus cocaine/psychotherapeutics (past year)

SOURCE National Institute on Drug Abuse, National Household Survey on Drug Abuse, 1990

drug abuse, is clearly impossible. The NIDA analyses demonstrated that the type and quantity of an individual substance use is correlated with a variety of both individual as well as geographic characteristics. Furthermore, while the NIDA report was the largest and most comprehensive to date, some segments of the population, many of whom were possible alcohol and drug abusers, were excluded from the survey.

As one economist noted, "There is much we still need to learn about poverty. Much of the past research has focused primarily on economic questions, reflecting the extensive involvement by economists in this work. Research is much more

limited on topics such as the causes of changing family structures, the impacts of neighborhoods and family structure on children's opportunities in life, personal and family coping strategies among the poor, how expectations about future opportunities are formed, and how these expectations influence behavior" (8).

## PSYCHOSOCIAI/BEHAVIORAL

### Aggressiveness

In much of the research literature the term aggression is used almost exclusively when referring to young children and adolescents between the ages of 13 and 15. Shortly after this age a divergence appears within this identified aggressive group. The vast majority of children "outgrow" their aggressive behavior, while a smaller percentage progress into or also exhibit, among other things, conduct disorders, antisocial behavior, delinquency, and violence. Discussing each of these areas is beyond the scope of this report. However, it should be noted that as is true for many individual risk factors, a number of these behaviors are intricately meshed.

Definitions for the term aggression vary considerably and may include tardiness, breaking rules, fighting, vandalism, cruelty to animals, and verbal abuse of other children. Many studies simply fail to define it. Wherever possible, study definitions of aggression will be outlined.

The children in the various studies on aggressiveness and subsequent drug abuse ranged in age from 5 to 20 years old. Aggressive behavior in the majority of the studies was exhibited almost exclusively by boys. While girls were included in the study populations, the number exhibiting aggressive behavior was very small. However, the presence of aggressive behavior among some young girls has not been shown to be predictive of later adolescent delinquency or substance use (49). This disparity between the sexes has not been addressed at any length.

Of the preadolescent boys who exhibited aggressive behavior, 30 to 40 percent maintained this behavior into adolescence. This continued aggression has been shown to be a strong predictor of subsequent alcohol and drug problems (28,33, 51). Interestingly, the combination of shy and aggressive behavior has also been correlated with later substance use problems. It has been postulated that aggressive boys may be more likely to be shunned by conventional peer groups, but accepted by other aggressive children who could encourage drug and alcohol use. Another theory, while not confirmed, suggests that young children rejected by conventional peer groups gravitate toward each other and that these groups of former so-called loners may foster delinquent behavior in later adolescence (28). Conversely, boys (but not girls) exhibiting shy behavior have been shown as less likely to partake in alcohol and drug using activities as they grew older (28,33,51).

Where does this aggressive behavior originate? Some studies have shown that young children exhibiting sociable, spontaneous, and fearless behavior are at greater risk for future aggressive and violent conduct. Factors that seem to be protective include a shy temperament, being first born, having a small and stable family characterized by low discord (i.e., effective family management), and having parents who regularly attend religious services (51 ).

> Current psychological perspectives emphasize that aggressive and violent behaviors are "learned" responses to frustration, that they can also be learned as instruments for achieving goals, and that the learning occurs by observing models of such behavior. Such models may be observed in the family, among peers, elsewhere in the neighborhood, and through the mass media (51 ).

This observation could, in part, explain why so few young girls are identified as aggressive. While socially defined roles for adults have changed considerably in the last several decades, the socialization of children's behavior to a large extent has not. Certain behaviors by boys are still classified by many adults under the "boys-will-be-boys" axiom, while the same behaviors by girls are often considered inappropriate.

Biological and genetic precursors to aggressiveness have also been explored. Events

associated with brain dysfunction that appear to increase an individual's potential for aggression include: brain injuries; in vitro exposure to opiates, cocaine, alcohol, and tobacco; and early environmental exposure to lead (e.g., air contaminated by leaded fuels, lead-based paint, water from older plumbing systems) (51).

No genetic studies specific to aggressive behavior have been conducted. Several Scandinavian countries have researched the association between genetics and violence, obtaining mixed results. No such studies have been attempted in the United States (51 ).

By understanding the antecedents of aggressive behavior, prevention programs targeted at reducing such behavior are much more likely to succeed. It has been asserted that multidimensional programs are more effective than those that focus on one or two components of aggressiveness. Researcher Karen Dodge submits:

> Most intervention approaches are implemented without regard for the type of aggressive behavior under scrutiny, and that different types of aggression are likely to respond differently to different types of intervention. Reactive aggressive children who overly attribute hostility to others in provocative situations may respond best to treatment aimed at training them to understand better others' thoughts and feelings. Proactively aggressive children may respond more favorably to consistent punishment of aggressive behavior and reinforcement of nonaggressive responses; this latter group many also have a better prognosis than the former group. Three intervention programs cited as being particularly suitable for differential implementation with these two types of aggressive children include social problem-solving skills training, anger-control training, and parent training (17).

Several unanswered questions point to areas for future research. Why do boys disproportionately exhibit aggressive behavior? Are specific aggressive behaviors unique to certain subpopulations? What are the differences between those individuals who "grow out of' their aggressive behavior and those who do not?

Answers to these questions and others will allow for more detailed understanding of aggressive behavior and its connection to alcohol and drug abuse, which could in turn provide for an improved structure for the planning of appropriate prevention programs.

## Delinquency and Crime

Similar to aggression research, studies define and collect data on delinquency and crime different y. Some studies use the two terms interchangeably, while others define delinquent acts as those less serious versus acts such as rape, armed robbery, and manslaughter, which are clearly illegal. Self-reported data are relied on by some studies, while others utilize only arrest records. These differences must be considered when attempting to generalize delinquent behavior to subsequent misuse of alcohol and drugs.

As is true for aggressiveness, males are at greater risk for developing delinquent and criminal behavior. Delinquent behavior for most youths appears to peak between the ages of 15 to 17, while alcohol and drug use are on the rise. However, only a small percentage (2 to 6 percent) of these adolescents become young adults who continue to engage in serious criminal activity coupled with frequent drug use. Statistics reveal that many arrests for property and violent crimes can be attributed to this small group of individuals **(29).**

Several researchers have linked delinquent and criminal behavior to alcohol and drug abuse and have concluded these activities precede the use and abuse of certain substances (28,29,13,56).

One such study conducted on adolescents examined the relationship between later drug use and earlier individual delinquent behavior and delinquent peer group bonding (DPGB). Females were found less likely to engage in individual delinquent behavior before but not after participating in a delinquent peer group. Additionally, minority students doing well in school had lower rates of delinquent problems than did nonminority youth who were also doing well in school. Strong positive belief systems (beliefs that committing il-

legal or rule-violating acts are morally wrong) also decreased the potential for future use of alcohol, marijuana, and other drugs. Conversely, those adolescents who had high DPGB levels had increased rates of alcohol, marijuana, and polydrug use (20).

A separate study of male and female cocaine addicts analyzed the psychosocial factors present among individuals who substantially increased their cocaine use from adolescence to young adulthood. Those who progressed to heavier use displayed a significant lack of law abidance or social conformity (46).

Several points have come to light from studies on heroin addicts. Studies conducted in the late 1970s found that while delinquency preceded illicit drug use, use of alcohol and first alcohol intoxication took place *before* delinquency. In fact, an average of two years lapsed between first alcohol intoxication and first criminal activity for both males and females who later became heroin addicts (64). A further study on male heroin addicts that grouped participants into low-crime versus high-crime categories found that men who had been placed in the high-crime group admitted significantly more contact with the criminal justice system before becoming addicted than did those in the low-crime group. Also, the high-crime group showed earlier and more frequent use of substances, as well as use of a wider variety of narcotic and nonnarcotic substances (47).

While a relatively small number of individuals who exhibit delinquent behavior progress to serious alcohol and drug problems, understanding the cause(s) of the delinquent behavior may help to decrease this number further. Psychosocial elements that have been associated with later delinquent behavior include:

- low parent-child attachment
- family conflict
- family social deprivation
- school failure
- parental and sibling drug use and criminal behavior
- poor and inconsistent family management practices (e.g., harsh or lax discipline, lack of supervision)
- attitudes and beliefs
- lack of neighborhood attachment and community disorganization
- family mobility.

Neurophysiological and cognitive dimensions have also been examined for serious delinquents, adult criminals, and children with conduct disorders. However, the findings were scanty and inconclusive (29,37).

When discussing prevention programs for these children, there is the hazard of labeling them predelinquent. This concern could be applied equally to most risk factors linked to future alcohol and drug problems. Labeling children as aggressive, high risk, delinquent, or developmentally slow may be a self-fulfilling prophecy. Some researchers have suggested that broad, encompassing programs should be implemented in targeted areas where groups exhibit a number of the risk factors previously described. This type of approach would not single out individuals but rather would assist communities, schools, and families (29).

## Physical and Sexual Abuse

Researchers and clinicians have increasingly addressed the possibility that physical and sexual abuse, especially in childhood, may be associated with an increased likelihood of later substance abuse and addiction. Although there are many gaps in this literature, and substantive and methodological issues that remain to be addressed, findings from several studies that have measured the prevalence of substance abuse strongly suggest that additional research and the evaluation of targeted clinical interventions are warranted. This section highlights selected research findings on the relationship of physical and sexual abuse to later substance abuse.

One review article on physical abuse found that children subjected to physical abuse had higher

levels of later substance abuse compared to children not physically victimized. The review also cited another study which found that 84 percent of the females in treatment for alcohol or drug addiction reported a history of childhood abuse (1 8).

Childhood sexual abuse appears to be rising. The National Incidence Study reported in 1988 that approximately 156,000 children had been recognized by public agencies (such as child protective service agencies, mental health agencies, and the schools) as being sexually abused each year, for an annual rate of about 0.3 percent (58). This is an increase in recognized cases of child sexual abuse of more than 300 percent between 1980 and 1988, and due to the sensitive nature of the topic, is probably a gross underestimation of the actual numbers of cases.

Prevalence statistics on childhood sexual assault specific to women range from 6 to 62 percent, depending on the definitions, methodology, and study populations used (54). One study that relied on a random sampling method discovered that of the 391 women who agreed to participate in the study, almost 34 percent reported being sexually assaulted by age 18, which provides a lifetime prevalence rate of one out of every three women. Of the respondents, over 24 percent reported an experience such as rape, 15 percent had been victims of molestation, and 10 percent reported some type of noncontact sexual assault (e.g., voyeurism, verbal threats of sexual assault, being forced to watch pornography) (54). Other researchers, measuring childhood molestation histories among women psychiatric outpatients, have cited figures of 50 to 70 percent, versus 20 to 30 percent reported by women in nonclinical populations (12).

While causality has not been established between childhood sexual abuse and later substance abuse problems, an association between the two variables has been shown. Several review articles have summarized the findings from researchers who consistently report that children exposed to sexual abuse present with a greater number of symptoms and problems compared to children who are not victimized ( 12,34,55). While substance abuse problems are not measured in all the studies, where it is measured, individuals who have been sexually abused show a much higher incidence of later substance abuse than their study counterparts (55). For example, 60 to 80 percent of individuals in substance abuse treatment programs report having been sexual abused (12), Other researchers have classified common symptoms by age group, discovering that among adolescents who had been sexually abused at some time in their lives, 53 percent reported abusing some substance (34).

Studies on sexually abused women have demonstrated similarly high rates. One study of women requesting appointments at a crisis counseling unit of a community health center found that 44 percent of the women walk-in clients reported a history of sexual abuse as children. The sexually abused women differed from the nonabused women in many ways, but they differed most in their substance abuse. The abused women were about 10 times more likely than the nonabused women in this population to report a history of drug abuse (21.1 percent vs. 2.3 percent) and more than twice as likely to report a history of alcoholism (26.9 percent vs. 10.5 percent) (11 ).

A review of four separate studies on women seeking treatment for alcoholism shows 34 to 85 percent of the women report a history of sexual abuse (30); and among recovering chemically dependent women, the topics discussed most often are sexual child abuse, incest, and rape. Uncovering the memories of these early childhood experiences is thought to be a contributing factor in drug relapse for some women (31 ). Thus, early experiences of abuse, especially sexual abuse, may require attention in treatment programs, since they may have been important precursors and contributors to the substance abuse and addiction, and may be major obstacles to successful treatment and the prevention of relapse.

Clearly, physical and sexual abuse are not uncommon phenomena. While this section has focused on the association between abusive experiences and subsequent substance abuse, there are many other psychopathologies that also arise from sexual and physical abuse. The research question need not be whether physical and sexual abuse

"cause" the later substance abuse and addiction. Clearly, many factors interact, especially in the home, school, and peer settings of children as they grow up. However, the consistent finding of higher levels of physical and sexual abuse among substance abusers warrants further research to disentangle the many factors that are at work. Unlike race, ethnicity, and poverty (which are not by themselves strongly and independently associated with substance abuse and addiction, but must be understood in the context of subcultures and the availability and marketing of drugs in neighborhoods and communities), physical and sexual abuse may more directly contribute to later behavioral problems, including substance abuse.

### *Mental Disorders*

The sheer number of Americans with mental disorders transforms personal tragedy into a widespread public health problem. Nearly one in three American adults will experience a mental disorder during his or her lifetime. Moreover, approximately 1.7 to 2.4 million Americans currently suffer from a persistent and severely disabling mental disorder, such as schizophrenia or bipolar disorder (commonly known as manic depression) (62).

There exists a wide array of behaviors classified as symptomatic of mental disorders, ranging from premenstrual syndrome, hostility toward others, and other maladaptive personality traits, to full-blown psychosis (2). It can at times be difficult to delineate where mental health ends and mental illness begins.

While many alcohol and drug problems may not be attributable primarily to mental disorders, they can certainly be exacerbated by these disorders. One comprehensive study found a high prevalence of comorbid (i.e., occurring at the same time) mental disorders and alcohol or other drug disorders—including both abuse and dependence syndromes as defined in the DSM-III-R. Using data from NIMH's Epidemiologic Catchment Area (ECA) survey of 20,291 adults (aged 18 and older) in communities and in various institutional settings (prisons, mental hospitals, nursing homes, and specialized treatment centers), they assessed the prevalence of comorbid alcohol, other drug, and mental disorders. Schizophrenia, mood disorders, and anxiety disorders were among those studied. Specific drugs studied, in addition to alcohol, included marijuana, cocaine, opiates, barbiturates, amphetamines, and hallucinogens (50).

### *Alcohol Disorder as the Primary Diagnosis*

An estimated 13.5 percent of all adults in the United States will have a lifetime diagnosis of alcohol abuse or dependence (see figure 6-3). For these individuals, the rate of mental disorder was almost double that of persons with no history of an alcohol disorder, and the rate of another drug disorder was almost six times greater. Specific comorbid mental disorders found in people with alcohol abuse-dependence disorder include anxiety disorders (19.4 percent), mood disorders (13.4 percent), and schizophrenia (3.8 percent).

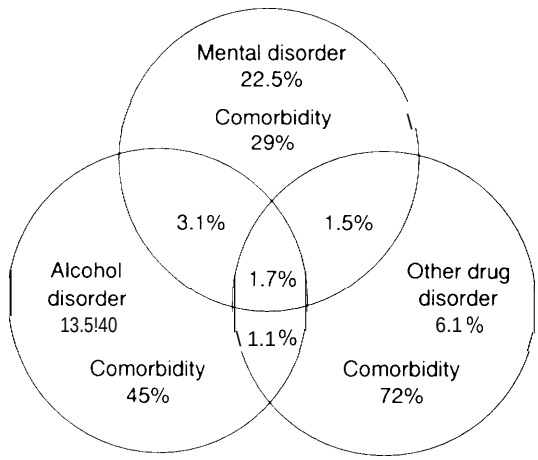
### *Drug* Disorder *(Other than Alcohol) as the Primary Diagnosis*

Some 6.1 percent of the total adult population will have had a primary diagnosis of drug abuse or dependency at some time in their lives. Over half of these individuals have also been diagnosed with a comorbid mental disorder such as anxiety disorder (28.3 percent), mood disorder (26.4 percent), or schizophrenia (6.8 percent). Compared to those persons without a drug disorder, these individuals are at more than four times the risk of having some type of mental disorder. Additionally, these individuals are also seven times more likely to be addicted to alcohol.

### *Mental Disorder as the Primary Diagnosis*

In contrast, at some time in their lives nearly one-quarter of all adults in the United States will have had a primary diagnosis of mental disorder. Compared with individuals having no history of mental disorder, people with a mental disorder face twice the odds of having alcohol abuse-dependence and over four times the odds of drug abuse dependence.

FIGURE 6-3: Substance Abuse and Mental Disorders




*Epidemiological data suggest that there is a high degree of comorbidity for mental and addictive disorders in the United States For example, 29 percent of individuals with a mental disorder will also have an addictive disorder*

SOURCE D A Regier, M E Farmer, D S Rae, et al, "Comorbidityof Mental Disorders With Alcohol and Other Drug Abuse Results From the Epidemiologic Catchment Area (ECA) Study *Journal of the American Medlca/Association 264 2511-2518* 1990

Comorbid alcohol and other drug abuse or dependence disorders occur frequently in people with the specific subtypes of mental disorders included in the study:

- Of those who develop schizophrenia and related disorders during their lifetimes (approximately 1.5 percent of the U.S. population), nearly half will abuse or be dependent on alcohol or other drugs, or both.
- Thirty-two percent of people with mood disorders (8.3 percent of the total adult population) will abuse or become dependent on alcohol, other drugs, or both.
- The anxiety disorders, as a group, occur at sometime in the lives of 14.6 percent of the population and are highly likely to be associated with an alcohol or other drug abuse or dependence disorder. For example, 35.8 percent of people with panic disorder, and 32.8 percent of people with obsessive-compulsive disorder will have some form of alcohol or other drug abuse or dependence disorder.

People with both mental disorders and alcohol or other drug disorders are likely to suffer more severe psychiatric symptoms, disruptive behaviors, aggression, and criminal behaviors. The importance of early detection for mental disorders is clear if subsequent alcohol and drug abuse problems are to be avoided. In other cases, an individual drug and/or alcohol problems may precede his or her mental disorder. In whatever order these complications are distinguished, it is essential to remember that millions of men and women suffer through not one, but two illnesses (62).

## Resiliency

The majority of funding and research has been devoted to understanding and identifying those elements that appear to place individuals at a greater risk for substance abuse. However, many of these same factors can, to some degree, be protective. For example, the vast majority of adolescents who have used alcohol, cigarettes, and other drugs do *not* grow up to become substance abusing adults. The process of aging and successfully passing through various developmental stages is in itself protective. In other cases, the *lack* of a particular factor is protective. This is true for many of the psychosocial factors such as aggressivity, delinquency, mental disorders, and physical and sexual abuse.

But what about those individuals who live in stressful and chaotic conditions—who are constant] y exposed to many of these risk factors—yet who *do* ***not*** develop substance abuse problems. How do these individuals emerge relatively unscathed, while many of their immediate family succumb to substance abuse? This section addresses a complimentary set of protective attributes, characteristics identified in individuals who display resiliency to the effects of various risk factors,

The term resiliency can be described as the ability to recover from or adjust easily to misfortune or change. A 1991 conference sponsored by the Children of Alcoholics Foundation released are-

port in which resiliency was conceptualized in the following manner (15):

- Resiliency is a dynamic process, not a static condition.
- Resiliency is contextual; adaptive behavior in one context may be maladaptive in another.
- Resiliency is the result of inherent personality characteristics interacting with environmental factors.
- Resiliency is more complex in multiple-risk situations.
- Resiliency can be learned.

For the most part, social science research on resiliency in children has not specifically addressed environmental substance abuse, and where it has, the research has focused to a large extent on alcoholism within the family. However, in general, resiliency studies have examined high-risk children from a variety of families and communities, of which many had substance abuse problems.

One of the largest longitudinal studies spanned a period of 30 years and was completed by Emmy Werner on the Hawaiian island of Kauai (80,81). An entire multiracial cohort of children was followed from the prenatal period to young adulthood, revealing invaluable information on resiliency in the presence of certain risk factors. Of the 700 children originally included in the study, 200 were identified as at-risk for later problems based on perinatal stress, poverty, family instability, and parents with mental health problems. Through the children's first decade of life, approximately 25 percent had at least one parent with a serious alcohol problem. Of these children, 41 percent later developed serious learning and behavioral problems by age 18, while the rest did not. All the children of alcoholic mothers developed problems, with the exception of one. Conversely, children of alcoholic fathers "were represented in roughly equal proportions among those who did and those who did not develop serious coping problems by age 18" (80).

More general findings from the study highlighted the difference between the prevalence of serious physical, learning, and behavior problems among girls and boys. Up to age 10, when confronted with a variety of risk factors, boys were significantly more likely to display a greater number of childhood problems requiring some type of social service and/or medical intervention. However, this ratio changed markedly by the second decade (ages 10 to 18). While high-risk boys were still three times more likely than girls to have records of serious delinquency (77 vs. 26 percent), by age 18 more than twice as many high-risk girls reported serious mental health problems. Additionally, of those children in the first decade identified with serious learning and/or behavioral problems, a greater number of boys than girls had improved by age 18.

Interestingly, the researchers also showed that some of the resilience factors identified differed between the sexes. For example among young girls, experiences that tended to foster greater maturity and independence, such as absence of a father, responsibility for younger siblings, and maternal employment outside the home, also appeared to bolster resiliency and competence. On the other hand, resiliency among young boys was correlated with the presence of the father, little family discord or crowding, and the existence of adequate structure and supervision. However, overall, a greater number of high-risk girls than high-risk boys grew into resilient young adults.

Several other studies have also identified factors associated with resiliency in children (6,19,23). One such factor is described as **adaptive distancing** whereby the child accomplishes two things: the child emotionally and psychologically detaches from the chaos of the family and resumes more "customary pursuits" in the outside world of school and friends, and the child does not allow the caregiver's drug or alcohol problem to be the central focus of his or her world. These behaviors have been observed in children as young as 3 years old.

A sense of purpose and future have also been identified with resiliency. Clinicians have observed very young children attempting to make sense of their situation upon experiencing an array of hardships such as chronic poverty or familial

substance abuse. Resilient children display such attributes as hopefulness, hardiness, motivation, and a belief in a bright future even when faced with challenges and adversity.

Researchers have also found that **the ability to develop competency skills** was associated with resiliency. Competence includes "the qualities of responsiveness, flexibility, empathy and caring, communication skills, a sense of humor, and any other prosocial behavior" (6). Researchers have consistently documented the presence of these characteristics among resilient individuals, and equally important, have noted the lack of these characteristics among individuals with severe behavioral, criminal, and mental health problems.

Another element that has been associated with resiliency is the **ability to use support systems effectively. Those** children who tapped into school activities, spoke with counselors, actively sought an alternative parent figure or role model, and confided in others were much more likely to be resilient than those children not involved in these supportive networks.

Much of a person resiliency depends on a variety of elements including the individual developmental stage, cultural perceptions, and '*the acuteness or chronicity of the adverse circumstances" (19). Nonetheless, many men and women who have gone on to lead productive and fulfilling lives, often did so *in spite* of their circumstances. By understanding how this was achieved, prevention programs can incorporate activities to bolster the protective factors in the lives of all children.

## Spirituality/Religiosity

The terms religiosity and spirituality are neither mutually exclusive nor inclusive. Both terms encompass an enormous array of fellowships and individual values, including institutionalized religion, new age religion or quasi-religious groups, traditional beliefs, and nonreligious persons.

Within the drug and alcohol abuse research field, studies have focused almost exclusively on the relationship between institutionalized Christian religions (with the exception of a handful of studies on Judaism) and its effect on substance use among adolescents and young adults. Virtually no data are available on other methods of worship, or discussion of the effect spiritualism/religiosity may have on the progression from adolescent alcohol and drug use to problem use and addiction.

A succinct and thorough review of recent literature on religion and substance use was completed by social psychologist Peter Benson (7). With rare exceptions, religiousness, in varying degrees, has been associated with decreased levels of substance use. The substances studied included alcohol, cigarettes, and numerous illicit drugs. This protective factor held true for men and women across the four U.S. census regions, and to some extent among blacks and Hispanics (although only a few studies analyzed race and ethnicity). The most widely used measures of religiosity were church attendance, church affiliation versus nonaffiliation, and religious importance; yet it also appeared that such indirect associations as parents' religiousness and belief in life after death were correlated with decreased substance use. Multivariate analysis was employed to examine the relative importance of religiousness by controlling for other demographic and social variables. In most instances the protective effect of religiousness was relatively small, but it did appear to be more predictive than several personal factors (e.g., self-esteem, purpose in life, locus of control) and less predictive when compared to social variables such as parental standards, peer pressure, and social tolerance. Benson puts forth several explanations for this apparent protective element, most of which center around the idea that organized religion fosters and maintains a certain set of morals and values. Depending on the religion, deviating from these norms can be somewhat tolerated or, at the other extreme, considered a profound sin.

For countless individuals, *spirituality*, while a more nebulous concept than religion, is intricately tied to emotional, psychological, and physical well-being. A practitioner of Zen (Buddhist) meditation and various New Age spiritualities stated:

> I think of health at every level: a healthy mind, a healthy spirit, as well as a healthy body. So that a person would have to have energy, alertness, enthusiasm, a love of life, a love of people, a love of themselves (43).

Many traditional cultures think of illness and disease as indicators of personal spiritual discord. For example, the American Indian Navajos strive for a state of personal wholeness, beauty, and well-being. The Blessing-way rite, composed of sacred songs and prayers, is often used to restore an individual's harmony with those around him or her, the environment, and, in a larger sense, the universe.

By ignoring different racial and ethnic religious and spiritual beliefs, their importance is minimized and/or trivialized (perhaps inadvertently) by more dominant religions. From a drug and alcohol prevention point of view, it would seem both cost-effective and relatively simple to encourage and celebrate religious and spiritual differences among individuals and communities; and acknowledge the protective benefits these factors provide for many people.

## SUMMARY

No single or generic set of variables explains the harmful use of alcohol and drugs for every individual. While this chapter reviewed a number of selected individual and protective factors, this information should be viewed in a broader context. To gain a complete understanding of the complexity of the substance abuse issue, the information presented before and after this chapter must be incorporated in any argument concerning factors that in some way effect an individuals potential for substance use and abuse.

By reviewing the individual risk factors under the three broad headings of Demographics, Economics, and Psychosocial/Behavioral, certain gaps in the literature appeared. Within the demographics section, the vast majority of the research to date has focused on identifying psychological as well as social characteristics that place preadolescent and adolescent children at greater risk for the initiation and continuation of drug use. While the benefits of this type of research are obvious, the majority of data point to the fact that alcohol, tobacco, and illicit drug use are highest among those aged 18 to 25 and 26 to 34. However, few research studies have been devoted to these age groups. Also, under the demographic section there was a general paucity of data on risk factors that may be unique to racial and ethnic minority populations and to some extent women (although this continues to change).

Within the economics section, while there may be quotes in the general media of tremendous financial earnings by drug dealers, research substantiating these figures is scanty. There is also little known about whether those individuals dealing drugs are at an increased risk for becoming drug abusers.

Many of the psychosocial/behavioral factors reviewed in the chapter have been extensively studied, and their associations to alcohol and drug use documented. However, one of the sections that has fairly recently been scientifically studied is that of physical and/or sexual abuse. Those studies that have been rigorously conducted are beginning to yield data that positively links childhood abuse to later alcohol and drug problems. Future research in this area is probably warranted. Also included in the section were select studies on resiliency and/or protective factors. While research has been conducted in this area for quite some time, much of the literature is not specific to alcohol and drug use situations, but rather, encompasses a wide array of variables that place individuals at a greater risk for behavioral, developmental, and learning problems.