

CHAPTER

17

ADDICTIVE BEHAVIORS

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Drug use and other addictive behaviors such as gambling have become a major focus of social concern in the United States. This concern reflects the growing reality that accessing legal or illicit sources for maintaining these maladaptive habits is not difficult, even for the very young. There is the popular notion that an addictive behavior such as substance abuse becomes problematic only when someone has an addiction. Contrary to this belief, an addictive behavior such as psychoactive substance abuse can involve a pattern of maladaptive use that has not as yet progressed to the stage of full-blown dependence or physical addiction. For example, according to the 4th edition of *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* (American Psychiatric Association, 1994), a person still can have a substance problem if he or she either (a) persistently uses a substance despite social, occupation, psychological, or physical problems or (b) continues to use a substance in physically dangerous situations.

Despite consistent efforts by federal, state, and local agencies to control and inhibit substance use and abuse, a great number of Americans continue to use a drug of some type or another. Alcohol is the most widely used of all the psychoactive drugs. In 1988, 25% of those between 12 and 17 years of age had consumed an alcoholic beverage during the previous month, as had 65% of those between 18 and 25 years of age (Bootzin, Acocella, & Alloy, 1993). In 1987, the average annual alcohol consumption of adults in the United States was 2.3 gallons

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of distilled spirits, 3.4 gallons of wine, and 34.4 gallons of beer (U.S. Bureau of the Census, 1990). Moreover, the National Institute on Alcohol Abuse estimated that there are now nearly 13 million alcoholics and alcohol abusers in the United States (Kaplan & Sadock, 1991). As for tobacco use, 3 out of 10 American adults are habitual smokers (Toneatto, Sobell, Sobell, & Leo, 1991). This makes nicotine dependence the most common form of drug dependence in the United States. Heroin is the most widely used type of illegal narcotic drug. In the early 1970s, heroin use increased each year. In 1972 and 1973, it was estimated that there were 600,000 narcotic addicts in the United States. Since then, the percentage of heroin users in the country seems to have remained constant. The popularity of cocaine soared in the 1970s, peaked in the mid-1980s at 5.8 million users, and declined to 2.9 million users by 1988 (National Institute on Drug Abuse, 1989). The use of marijuana also is fairly common. More than 1 out of 2 Americans between 18 and 25 years of age have tried marijuana, and many have become frequent users (National Institute on Drug Abuse, 1989). Marijuana use among the young increased dramatically in the 1970s, peaked in 1979 and 1980, and has been declining slowly since then. However, it still is America's most popular illicit drug. In many cases, drugs are not used individually. Often users like to combine the effects of several drugs, with the most common combination involving the use of marijuana and alcohol.

The negative consequences of addictive behavioral problems to a person's physical health and mental health have been well documented, but what often is overlooked is the cost incurred by society in general. For example, it is estimated that alcohol-related problems cost the American economy more than \$116 billion in 1983 (National Council on Alcoholism, 1986). Most of this economic loss is concentrated in three areas: decreased work productivity, health problems, and motor vehicle accidents. The largest portion of this loss—about \$70 billion—is due to decreased work productivity. Workers with drinking problems are slower and less efficient, lose time on the job, make hasty decisions, cause accidents, and lower the morale of their coworkers. Furthermore, they are more likely to become prematurely disabled and to die young (Bootzin, Acocella, & Alloy, 1993). In terms of medical costs, \$15.9 billion was spent in 1981 on medical treatment and support services for alcoholics. In one case, it was estimated that alcoholic employees cost their companies the equivalent of 25% of their salaries (Alcoholism Council of Greater New York, 1987). Approximately half of all occupied beds in American hospitals are filled by people with ailments linked to alcohol consumption (U.S. Department of Health and Human Services, 1981). Finally, \$10 billion is lost annually in alcohol-related motor vehicle accidents. Alcohol is implicated in as many as half of all car accidents, and it is involved in more than half of the accidents in which there are fatalities.

Little has been written about the prevalence of addictive disorders such as gambling and alcohol and drug abuse among Asian Americans. What little that is known about this ethnic population is from two sources: research based on either treated or untreated cases. The former involves estimating prevalence based on samples of individuals who are in clinical treatment for their addictive prob-

lems. The latter involves surveys on noninstitutionalized populations. In the following sections, research on alcohol and other drug use, smoking, and gambling is presented and discussed.

ALCOHOL AND OTHER DRUG USE

The untreated cases research on the prevalence and extent of alcohol and other drug problems among Asian American populations tends to cluster into four domains. First, a number of studies have focused on adolescent populations. It is important to distinguish this research from that conducted on Asian adults because the drug use patterns among the younger and predominantly American-born Asian populations can differ greatly from those among the older adult and predominantly immigrant populations. Second, a large number of studies have surveyed various Asian groups in Hawaii. These studies have revealed interesting inter-Asian differences in drug use, but, as discussed later, the generality of these findings to mainland Asian populations might be limited. Third, a number of investigations have examined Asian drug use in West Coast populations. Finally, cross-national studies have been conducted on Asian populations in the United States and/or East Asia. The subsequent sections review the studies from each of these four major sources of information.

Drug Use Among Asian American Youths

A number of studies on substance use have focused on adolescent populations. Maddahian, Newcomb, and Bentler (1985) examined patterns of drug use for 847 adolescents from four different ethnic backgrounds over a 5-year period. A total of 65 Asian students participated in this study (7.7% of total sample). In Year 1, Asian adolescents showed the highest rate of single alcohol use, which diminished over time. Asians were the largest group that had tried only alcohol and no other substance. In Year 5, Asians had the highest percentage of nonusers (29.2%) among the ethnic groups. Nakagawa and Watanabe (1973) surveyed Asian students in junior and senior high schools on personal drug use (excluding marijuana and alcohol) in Seattle, Washington. Among the 339 males and 367 females surveyed, 12% of the males and 17% of the females were classified as "users." By ethnic group, 49% of "other Asians," 45% of Filipinos, 29% of Japanese, and 22% of Chinese had some experience with "hard" drugs such as amphetamines, barbiturates, psychedelics, cocaine, and heroin (in descending order of frequency of use).

Kandel, Single, and Kessler (1976) conducted a study of drug use in New York City high schools and sampled 7,530 students. They found that Asian Americans had the lowest level of overall drug use when compared to American Indians, African Americans, Hispanics, and Whites. To obtain baseline epidemiological data on drug use, Porter, Vieira, Kaplan, Heesch, and Colyar (1973) surveyed the majority of students in the 6th through 12th grades in Anchorage, Alaska.

Of the 15,634 students surveyed, 0.6% were Asian American. Although Asian American students had the lowest percentage (26.0%) of users (i.e., those who had used one or more of the drugs on the list at least once) when compared to Native Alaskans (43.5%), Whites (35.7%), and African Americans (32.2%), they reported the highest use among those students who had used only alcohol or tobacco or both (52.0%). In terms of nonusers, Asian Americans ranked second (22.0%) after Native Alaskans (21.8%). Strimbu et al. (1973) surveyed college students in a large southeastern state. In a sample of 20,547 respondents, 1% of the respondents were classified as Asian Americans. Asian Americans ranked lowest on tobacco and alcohol use and ranked second lowest on the use of marijuana and strong stimulants when compared to the American Indian, African American, and White samples.

A study that was conducted throughout the state of New York surveyed a large representative sample of 27,335 students in the 7th through 12th grades (Barnes & Welte, 1986). Asian Americans had the highest percentage of abstainers (55%), followed by African Americans (41%), Hispanics (37%), American Indians (27%), and Whites (24%). Heavy drinking was reported in 18% of American Indians, 16% of Whites, and only 6% of Asians. However, Asian American students who did drink consumed the largest amount of alcohol per day when compared to the other ethnic groups (1.46 ounces of absolute alcohol vs. 0.76 ounces for White drinkers, 0.86 ounces for Hispanic drinkers, and 1.29 ounces for American Indian drinkers). The same pattern of high levels of abstinence but with high levels of consumption among Asian American adolescent drinkers was reported in an earlier national survey (Rachal et al., 1975). In a survey of males and females 16 through 22 years of age with the San Diego Job Corps, Morgan, Wingard, and Felice (1984) found that a smaller percentage of Indochinese males and females reported drinking when compared to White, African American, and Hispanic youths.

In 1980, the Department of Health and the Department of Education in Hawaii initiated several Risk Reduction Projects designed to prevent or delay the onset of alcohol, cigarette, and marijuana use among students in the 7th through 12th grades. The Risk Reduction Projects found that the frequency of heavy beer use (weekly or daily) was fairly evenly distributed among the White, Japanese, and Filipino youth groups. However, for those Native Hawaiian youths who drank, heavy drinking was more than twice as likely as moderate or infrequent drinking (Ahern, 1989).

Drug Use in Hawaii

The state of Hawaii has a diverse ethnic composition among its population including substantial numbers of Native Hawaiians, Japanese, Filipinos, Chinese, and Whites as well as smaller numbers of Koreans, Samoans, Portuguese, and persons of mixed ancestry. In Hawaii, the existence of ethnocultural and socioeconomic diversity, coupled with a relatively high incidence of alcohol consumption, provides a favorable environment for conducting alcohol research,

especially as it relates to different ethnic groups. Hawaii is racially and culturally diverse. The most salient feature of Hawaii's population is its ethnic diversity. The largest ethnic groups are Whites, Japanese, Native Hawaiians (part Hawaiians and full-blooded Hawaiians combined), and Filipinos. Hawaii is a major consumer of alcoholic beverages. Stinson (1984) found that per capita consumption of ethanol in Hawaii had increased strikingly and consistently since 1970.

Lemert (1964) was the first to systematically examine ethnic group differences in alcohol use in Hawaii. On the basis of questionnaires and interviews, Lemert obtained data on alcohol use, drinking habits, beverage preferences, and drinking problems from 480 workers on several large sugar plantations on the island of Hawaii in 1959 and 1960. He found that Whites led all other ethnic groups in the proportion of current drinkers (97.1%). Filipinos ranked next (90.1%), followed by Japanese (85.3%), Puerto Ricans (77.8%), and Hawaiians (50.0%). It is questionable that the study was even representative of Hawaiian plantation workers. Lemert indicated that more than 50% of the workers in his sample were Mormon, which was far greater than expected for any random sampling of Hawaiian plantation workers.

The following studies conducted in Hawaii have tended to find lower rates of alcohol consumption for Asian American populations when compared to those for Whites. Wilson, McClearn, and Johnson (1978) studied data obtained from 2,418 respondents from four different ethnic groups in Hawaii. They employed a sampling plan based on the 1970 census. There were more than 600 respondents in each group with the exception of the Hapa-Haole sample (mixed-race individuals with one White and one Asian parent), in which there were 443 respondents. Asian ethnic groups (Chinese, 18%; Japanese, 17%; Hapa-Haole, 7%) were more likely to be abstainers than were Whites (4%). Overall, females (17%) were nearly twice as likely as males (9%) to indicate that they never drank. In a sample of 3,714, Schwitters, Johnson, McClearn, and Wilson (1982) also reported a greater percentage of abstainers among Asians (Chinese, 17.1%; Filipinos, 31.0%; Japanese, 16.7%; Hawaiians, 11.1%; Hapa-Haole, 7.0%) compared to Whites (4.3%). In addition, the Whites in the study were characterized as being much heavier drinkers than their Asian counterparts. Kotani (1982) also reported a lower percentage of heavy drinkers in Asian American populations (Hawaiian, 19.4%; Japanese, 11.4%; Filipinos, 8.8%; Chinese, 2.2%) than in Whites (40.6%).

A statewide epidemiological survey was conducted in Hawaii in 1984 (Murakami, 1989). It sampled 2,503 individuals age 18 years or older including Whites (28.5%), Japanese (21.6%), Filipinos (11.4%), and Native Hawaiians (18.9%). A structured interview was conducted with each respondent to elicit information on individual alcohol consumption, problems related to drinking, and drug use. The following definitions for extent of drinking were used: *Non-drinkers* reportedly drank less than 1.0 ounce of alcohol in a year and included former drinkers and abstainers, *light drinkers* drank between 1.0 and 76.6 ounces of alcohol in a year, *moderate drinkers* drank between 76.7 and 361.0 ounces of alcohol in a year, and *heavy drinkers* drank more than 361.0 ounces of alcohol

in a year. The findings indicated that in the Hawaiian population, 44.4% were nondrinkers, 26.7% were light drinkers, 19.8% were moderate drinkers, and 9.1% were heavy drinkers. Native Hawaiians consumed less alcohol than did Whites but consumed more than did other ethnic groups such as the Japanese and Filipinos. Drinking prevalence rates for Native Hawaiians and Whites consistently exceeded those of the Japanese and Filipinos as well as the statewide rates in the light, moderate, and heavy drinker classifications. As expected, the Japanese and Filipino groups had higher percentages of nondrinkers than did the Native Hawaiian and White groups, whereas the reverse was found in the light drinker classification. These findings are supported by previous studies conducted in Hawaii. The rates for males were higher than those for females in the moderate and heavy classifications. Although more than 50% of the males within each ethnic group were nondrinkers or light drinkers, a fairly large proportion of moderate and heavy drinkers were found, especially within the Native Hawaiian and White groups. At least 67% of the females within each of the ethnic groups were either nondrinkers or light drinkers. The percentage of females who drank heavily was higher for the White (9.1%) and Native Hawaiian (8.2%) groups than for the other two ethnic groups.

Attitudes toward help seeking for alcohol and drug problems also were assessed. Close to two thirds of the Whites (65%) would definitely seek professional help, whereas fewer Japanese (53%), Native Hawaiians (51%), and Filipinos (42%) would use professional services. A higher percentage of Native Hawaiians, Japanese, and Filipinos reported barriers than did Whites. Personal shame and embarrassment appeared to be a major barrier with more Japanese (26.9%), Native Hawaiians (24.2%), and Filipinos (23.5%) than Whites (19.1%) identifying this as a problem in help seeking.

In one of the most comprehensive studies on Asian ethnic differences in drinking in Hawaii (Marchand, Kolonel, & Yoshizawa, 1989), interview data were collected over a 5-year period (1975-1980) from a representative sample of 50,000 Hawaiian residents from the five major ethnic groups (Whites, Japanese, Chinese, Filipinos, and Native Hawaiians). Native Hawaiians had the highest consumption of beer, and Whites had the highest consumption of wine and spirits. Overall, total ethanol intake was similar for these two ethnic groups and was considerably higher than that for the other three Asian groups. This pattern of ethnic differences was observed when either daily or lifetime use of alcohol was analyzed, and the pattern was rather consistent among the genders and among different age groups. Native Hawaiians who drank tended to consume more ethanol than did drinkers in the other Asian groups. In both genders, Whites reported the highest ethanol consumption, followed closely by Native Hawaiians. Japanese, Filipinos, and Chinese had markedly lower ethanol intakes. For example, compared to Whites, the Chinese had an ethanol intake 3.5 times lower for males and 13.3 times lower for females. Ethanol intake was greater for males than for females and was greater for middle-aged groups than for younger and older groups. The percentage of drinkers in each gender/ethnic group reflected a similar

pattern of alcohol use, with Whites most likely and Chinese and Filipinos least likely to be alcohol users. Weekly drinking patterns were very similar across ethnic groups and did not suggest that binge or regular drinking was more likely for any particular group. Some of the differences in ethnic drinking rates could be attributed to differences in beer consumption. Native Hawaiians reported drinking more beer than did the other races in a very consistent fashion across genders and age groups. Beer consumption also was greater among White males than among Asian males. There were some interesting interactions between age and ethnic group in consumption. For example, most of the differences in beer consumption between Japanese and White males occurred in the younger age groups; after 40 years of age, Japanese males reported drinking as much beer as did White males. Chinese respondents had the lowest level of beer consumption among males. Among females, beer consumption was much lower overall than among males, and most of the beer drinking by females occurred among Native Hawaiians and Whites. Wine and hard liquor were most consumed by Whites of both genders, with a trend toward increasing consumption with increasing age. A similar trend was discernible for hard liquor consumption among males of the other ethnic groups and among Native Hawaiian and Chinese females.

The overall prevalence rates for alcohol found in this study were low compared to those found by others in Hawaii (Murakami, 1989). This was due partly to the fact that the survey questionnaire identified only regular alcohol drinkers. Thus, the "abstainer" group included some "rare" and "occasional" drinkers. In an effort to examine health problems associated with drinking, alcohol consumption was correlated with the ethnic-specific cancer incidence rates. The results indicated that the alcohol intake patterns in Hawaii helped explain the ethnic variation in the incidence of oropharyngeal cancer. However, alcohol intake patterns do not adequately account for the ethnic variation in rate of esophageal cancer.

Due to the great cultural diversity of the state population, drug use studies in Hawaii have been especially effective in examining the ethnic variation that exists among different Asian groups in alcohol use. The research indicates that there is great variability in estimates of the prevalence of alcohol users, abusers, and alcoholics across ethnic groups in Hawaii (Ahern, 1989). Nonetheless, in terms of the overall use of alcohol, the accumulated evidence seems to indicate that Whites and Native Hawaiians do not differ significantly from each other but that these two groups had significantly higher drinking rates than did the Japanese, Chinese, and Filipinos. In most estimates of drinking prevalence and alcohol abuse, the Chinese and Filipinos had the lowest rates. These studies also found that females used alcohol far less than did males and that these gender differences tended to be very consistent across the various ethnic groups. Some researchers have suggested that Asian groups from Hawaii might be quite different from their mainland counterparts in terms of their nonminority status, acculturation, English language proficiency, community cohesiveness, social-political identification, and so forth (Kitano & Daniels, 1988; Sue & Morishima, 1982). Nevertheless, the Hawaiian research has been valuable in alerting policymakers,

care providers, and researchers to the important variation that can exist among different Asian American populations with respect to drug use and abuse.

Asian Drug Use in the Continental United States

The best national information on drinking frequency for Asian Americans is the data collected by the 1977 National Health Interview Survey (HIS) conducted by the National Center for Health Statistics. The HIS consists of continuous sampling and interviewing of 41,000 households annually nationwide. In 1977, data on the health practices of Asian and Pacific Islander (API) Americans were obtained on a one-third subsample of persons age 20 years or over. The results showed that 32% of the 256 API Americans in the subsample never drank alcoholic beverages or liquor, 52% drank occasionally, 9% drank once or twice a week, and 8% drank three or more times a week. These rates were significantly lower than the rates found for Whites or other ethnic minority groups.

Studies in the continental United States have tended to focus on Asian American populations residing on the West Coast. Most of these studies have been reviewed elsewhere (Zane & Kim, 1994). In general, they have found that Asian Americans have higher rates of abstinence and lower rates of drug use than do other ethnic groups. However, important variations among different Asian groups have been found. For example, Klatsky, Siegelau, Landy, and Friedman (1983) collected data from 59,766 individuals who had multiphasic health examinations at Kaiser-Permanente Medical Care Program from 1978 to 1980. In examining ethnic patterns of alcohol use, they found that Asian men reported much less drinking than did White, Black, and Hispanic men. Similarly, Asian women reported much less drinking than did women from other ethnic groups. Among the Asians, Chinese men reported the least drinking, whereas Japanese men reported the most alcohol use. Among women, Filipinos reported the least drinking, whereas Japanese women reported drinking more than the other Asian ethnic groups. For each Asian ethnic group, there was a higher percentage of abstainers among foreign-born Asians (Chinese, 38.8%; Japanese, 29.4%; Filipinos, 39.9%) than among their American-born counterparts (Chinese, 24.8%; Japanese, 17.8%; Filipinos, 12.6%). This finding points to the importance of not only differentiating among Asian ethnic subgroups but also considering Asian within-group variation on acculturation-based variables such as foreign-born status and other dimensions (e.g., ethnic identity, refugee vs. immigrant status, cultural values) when examining alcohol and other drug use patterns. In an earlier study based on the Kaiser-Permanente Medical Care Program data collected from 1964 and 1968, Klatsky, Friedman, Siegelau, and Gerard (1977) reported the proportions of drinkers and nondrinkers among persons of White, African American, and Asian groups. The majority (57%) of those classified as Asian were Chinese. The data showed that from 15 to 79 years of age, 37% of the 1,744 Asian men and 58% of the 1,989 Asian women in the sample were nondrinkers compared

to 16% of the White men, 25% of the White women, 24% of the African American men, and 42% of the African American women.

In a comparison study examining the consequences of drinking, Yu, Liu, Xia, and Zhang (1989) examined national death rates for chronic liver disease and cirrhosis specified as alcoholic. They found that compared to White and Black Americans, the Chinese had the lowest death rates per 100,000 (1.2 per 100,000 age-adjusted death rate).

It is now clear that Asian groups can differ in alcohol and drug use patterns. The most extensive examination of intergroup Asian variation in drug use was conducted by Kitano and his colleagues. Their study sampled 1,103 Asians including 298 Chinese, 295 Japanese, 280 Koreans, and 230 Filipinos (Kitano & Chi, 1985). The prevalence of heavy drinkers was highest among the Japanese (25.4%), followed by the Filipinos (19.6%), Koreans (14.6%), and Chinese (0.4%). On the other hand, they found the highest percentage of moderate drinkers to be among the Chinese (48.3%), followed by the Japanese (41.7%), Filipinos (29.1%), and Koreans (23.6%). The Koreans had the highest percentage of abstainers (61.8%), followed by the Filipinos (51.3%), Chinese (41.3%), and Japanese (32.9%). Those who drank tended to be men under 45 years of age, those of higher socioeconomic status (i.e., more often college graduates in professional occupations), and those living in large cities. As expected, those who drank endorsed more permissive attitudes toward alcohol use and reported socializing with friends who were more tolerant of drinking.

Using the same data set, Sue and his colleagues (1985) studied gender differences in the drinking patterns of the Chinese, Japanese, and Korean respondents. The Korean males and females had the highest percentage of abstainers (males, 55.5%; females, 80.8%), followed by the Chinese (males, 47.7%; females, 73.8%) and Japanese (males, 36.4%; females, 63.3%). The percentage of heavy drinkers ranged from 29.8% in the Japanese to 13.6% in the Koreans and 8.4% in the Chinese. Surprisingly, a substantial number of Japanese females (11.7%) reported that they were heavy drinkers, whereas less than 1% of Korean and Chinese females reported this pattern of alcohol consumption. Kitano, Chi, Rhee, Law, and Lubben (1992) conducted additional analyses of the Japanese subsample and found that Japanese born in Japan were more likely to engage in heavy drinking (51.5%) than were Japanese born in America (17.3%). Kitano and colleagues also reported that there was a tendency for more drinking in third- and fourth-generation Japanese Americans, which the researchers attributed to the impact of acculturation. Sue, Kitano, Hatanaka, and Yeung (1985) also found that a larger percentage of foreign-born Chinese were heavy drinkers than were their American-born counterparts (9.5% vs. 0.0%). However, the opposite pattern was found in a college sample (Sue, Zane, & Ito, 1979) and by Klatsky and his colleagues (1983) in that American-born Chinese were found to drink more. These differences in drinking patterns between foreign-born and American-born Asians might be due to age, regional, and temporal differences in the samples between the Kitano and Chi (1985) and other studies. Nevertheless, the results

again underscore the importance of examining within-group variation in Asian substance use.

In another follow-up study, Lubben, Chi, and Kitano (1989) examined the data from the Korean American subsample of the original Los Angeles study (Kitano & Chi, 1985). Korean immigrants were predominantly Christians, and most indicated a strong devotion to the organized church. This strong religious affiliation tended to differentiate the Koreans from the other Asian immigrant groups. Substantial gender differences were found. All but one of the heavy drinkers were male, and more than three quarters (75.2%) of the females were abstainers. The stereotype of Koreans as either abstainers or light drinkers was strongly supported by the data. In addition to gender, several other characteristics distinguished the Korean drinkers from abstainers. Those who attended regular weekly religious services also were more likely to be abstainers. Respondents were more likely to drink alcohol if their parents also drank. Surprisingly, parental opposition to drinking was highly associated with a respondent being a drinker. It appeared that social support sources involving both the family and the church had significant influence on Korean drinking behavior. Three social activities also were significantly related to drinking. Relative to abstainers, drinkers more often participated in sports; went to bars, taverns, and/or nightclubs; and played indoor games (e.g., cards).

Cross-National Studies on Asian Drug Use

The Asian American population still is predominantly an immigrant population with more than 70% of the Asians born outside of the United States. East Asian countries are the primary source of this immigration. Consequently, the drug use prevalence rates found in these countries must be considered as a major influence of substance use patterns in Asian American communities in the United States.

Yu et al. (1989) reviewed epidemiological data collected on alcohol use among Chinese individuals from several different localities including the United States, Taiwan, and China. The investigators believed that the generalization that the Chinese are nondrinkers needed to be reexamined in light of the more recent findings. Using the translated version of the Diagnostic Interview Schedule-III, they interviewed a random sample of 3,098 individuals in Shanghai. In terms of the frequency of drinking, the study found that 60% of the Shanghaiese men and 93% of the women had abstained from drinking. In terms of drinking pattern, 29% of the men and 7% of the women drank occasionally, and 11% of the men and 1% of the women drank sometimes. Only 1.7% of the Chinese had drunk daily for a month or more during their lifetimes. Of these individuals, only 26.4% were found to be problem drinkers in that they met the DSM-III criteria for alcohol abuse or dependence. As in other studies, the large majority of the problem drinkers were men. An examination of the elderly, those age 50 years or over, indicated that lifetime abstention rates for alcohol decrease with increasing age. In the 50- to 64-year-old age group, 59% of the Chinese elderly had abstained

from alcohol compared to only 45% of those age 80 years or over. Gender differences in abstinence rates also were less pronounced for the older Chinese, as 51% of the older Chinese men and 57% of the older Chinese women had abstained from alcohol.

The Shanghai study findings suggested that alcohol abuse and dependence rates were fairly low for the Chinese, but a study conducted on Chinese in Taiwan found some important differences. Yeh and Hwu (1984) surveyed 5,005 community participants to examine the prevalence of alcohol abuse in Taiwan. They found that the lifetime prevalence for males was 6.4% compared to 0.4% for females. Lifetime prevalence for alcohol dependence was 2.8% for males and 0.1% for females. These rates are much higher than those reported from the Shanghai study.

In a collaborative study of alcohol consumption patterns between the United States and Japan, an extensive epidemiological survey was conducted sampling four groups: Japanese in Japan, Japanese Americans in Hawaii, Japanese Americans in California, and Whites in California (National Institute on Alcohol Abuse and Alcoholism & National Institute on Alcoholism in Japan, 1991). In all the study sites, the proportion of current drinkers (those who drank alcohol within the past year) was somewhat higher than rates found for the general adult population of the United States. Japanese men (91%) had the highest proportion of current drinkers, followed by White men (85%), Japanese American men in California (84%), and Japanese American men in Hawaii (80%). In general, women drank less and the pattern of ethnic variation differed from that found for men. White women had the highest proportion of current drinkers (81%), followed by Japanese women in California (75%), Japanese females in Hawaii (68%), and Japanese women (61%).

With regard to frequency of drinking alcoholic beverages, the data showed that patterns of alcohol use varied across the different locations. A majority of Japanese men in Japan (62%) reported drinking at least three times a week; only 7% of this group indicated that they drank less than once a month. Almost half of the White male drinkers (44%) reported drinking three or more times a week, whereas 13% indicated that they drank less often than once a month. The findings for White men in California were very similar to the national rates (National Institute on Drug Abuse, 1990). However, Japanese Americans used alcohol less frequently. Less than one third of the Japanese American males in Hawaii (32%) and California (29%) reported drinking as often as three times a week, whereas close to one fourth (20% and 26%, respectively) reported drinking less often than once a month. Different drinking patterns were found for the women. White women in California (32%) had the highest proportion of individuals drinking three or more times a week. These women drank more than either Japanese in Japan or Japanese Americans, and their consumption was higher than the national sample of White women (21%). Japanese women in Japan had the next highest proportion of frequent drinkers (21%), whereas the Japanese American women had the lowest proportion of frequent drinkers (9% for both Hawaii and California).

Using the data from the collaborative study, Kitano et al. (1992) compared the drinking practices and norms of Japanese in Japan and Japanese Americans living in Hawaii and California. Their purpose was to explore possible national and regional differences in normative drinking practices based on age and gender. In their reanalysis of the data, they found that the highest percentage of male heavy drinkers was in Japan (32.4%) relative to Hawaii (29.0%) and California (12.9%). On the other hand, the highest percentage of male abstainers was in Hawaii (20.8%) relative to California (18.5%) and Japan (9.4%). Among women, Hawaii (9.1%) had the highest proportion of the heavy consumers of alcohol relative to California (4.2%) and Japan (3.8%). California (26.6%) had the highest frequency of light/moderate users relative to Japan (20.3%) and Hawaii (14.0%). For female abstainers, California (26.5%) had the highest percentage of abstainers, whereas Japan had the lowest percentage (9.4%). The findings suggested that Japan appeared to have the most permissive norms for male drinking, followed by California and Hawaii, whereas the greatest tolerance of female drinking was observed in California, followed by Hawaii and Japan. In general, all three localities were much more tolerant of male drinking than of female drinking. Overall, the respondents from California and Hawaii appeared to be similar in drinking norms, whereas the respondents in the Japanese sample often differed from their American counterparts.

The researchers accounted for the similarities between California and Hawaii and the differences between the Japanese and the American sites by enculturation and acculturation. Most of the Japanese Americans included in the study were children and grandchildren of immigrants who left for Hawaii and California in the early part of the 20th century, so that they have not been influenced by the recent sociological changes that Japan has undergone (enculturation). Instead, the Japanese Americans have been more affected by acculturation experiences as a result of living in the United States. Chafetz (1964) noted that prior to World War II, alcoholic beverages were consumed in Japan, but the incidence of alcoholism was rare. Since World War II, there have been numerous changes in Japanese society including the impact of the American occupation, rapid urbanization and industrialization, and a questioning of traditional values. In modern Japan, when one has been drinking, a person's behavior is attributed primarily to the effects of alcohol and not the person. For example, one can express anger at one's boss while drunk, a behavior that would be unthinkable and unacceptable when the person is in a sober state. There also is an emphasis on males joining one another after work for the camaraderie of drinking. Business executives also have generous expense accounts for entertaining customers with dinner and drinks. It appears that these changes have altered attitudes toward drinking and drinking practices such that a rise in the annual per capita alcohol consumption rate, from 1.4 to 4.6 liters, has been observed between 1951 and 1970 in Japan (Nakuda, 1972). By comparison, Hawaii and Santa Clara show the "effects of local styles and the influence of acculturation" (Kitano et al., 1992).

Drug Use Estimates Based on Treated Cases Data

Another source of epidemiological information comes from institutionalized patient data and prevalence rates of drug abuse based on treated cases. One study (Ball & Lau, 1966) showed that the Chinese were overrepresented among addict populations between 1935 and 1964. Although the Chinese constituted less than two tenths of 1% of the U.S. male population at that time, Chinese narcotic addicts constituted 3% of the 32,209 male addicts treated at the U.S. Public Health Service hospital in Kentucky. However, the investigators concluded that opium addiction among Chinese Americans appeared to be a pattern of the past associated with the early immigrant Chinese male laborers who came to the United States in the 1890s.

More recent data from drug abuse treatment populations provide another source of current data on Asian American populations. Asian Americans in San Francisco comprised 3.3% of all admissions for drug abuse treatment in the 1981-1982 period. Rather than reflecting low prevalence, this finding more often has been interpreted as an underutilization of services because of the great discrepancy between utilization rates and the proportion of Asians in the local population. In San Francisco, Asian Americans constitute 21.6% of the city's population. Asian Inc. (1978), using a key informant needs assessment approach, indicated that the prevalence of Chinese American and Filipino American drug use was lower than that of the general population. A California study in the 1970s revealed that of the approximately 1,000 Asian inmates in that state's correctional institutions, roughly 90% were there for drug-related crimes (Trimble, Padilla, & Bell, 1987).

In an analysis of drinking patterns, Chin, Lai, and Rouse (1991) sampled 70 Chinese male alcoholics in New York City. On the basis of judgments made by the treatment staff, 75% of the patients were diagnosed as alcohol dependent and 19% were assessed as alcohol abusers. Except for 1 patient, none of the patients was involved with other drugs. Most were employed and relatively old. They also had little contact with the criminal justice system. Only 4% had ever been imprisoned, and on the basis of self- and family reports, few were known for violent behaviors. Because few of them had driver's licenses or access to automobiles, driving while intoxicated (DWI) convictions were uncommon.

More than half of the sample drank only hard liquor, usually whiskey or brandy. A small number (17%) were beer drinkers, and none drank wine. On a typical drinking day, 57% of the sample had nine drinks or more. Most of the respondents reported drinking more than half a bottle of whiskey or brandy each day. Typically, they drank slowly but continuously, beginning at lunch or dinner and continuing throughout the remainder of the day. Most preferred to drink alone; only 16% reported drinking with others. Few (15%) patronized bars on a regular basis. These results were similar to the drinking patterns of Chinese alcoholics in Los Angeles (Chi, Lubben, & Kitano, 1989) and San Francisco (Chu, 1972).

The use of data from treated cases to estimate prevalence is fraught with difficulties, sampling bias, and interpretation problems. Along with others, Sue and Nakamura (1984) noted that one of the problems with the treated cases method is that the demand for treatment (i.e., seeking and/or receiving treatment) is not equivalent to the need for treatment (i.e., those in the population who should receive treatment). Moreover, there is convergent evidence that Asian Americans consistently have underutilized drug abuse and mental health treatment programs relative to their respective proportions in the local populations (Sue, Zane, & Young, 1994; Uba, 1994). For Asian Americans, help-seeking behavior is influenced by many factors including one's cultural values, the shame or stigma attached to seeking treatment, the perceptions of the effectiveness of treatment, and the availability of alternative resources (Sue & Morishima, 1982).

Although studies concerning alcohol use and other drug use in the Asian American population are scarce and often use unrepresentative samples, certain conclusions can be reached. First, it would appear that Asian Americans are less likely than other groups to seek treatment for alcoholism. Second, Asian Americans tend to use alcohol less than other ethnic or racial groups. Native Hawaiians are the exception to this pattern in that their alcohol drinking rates are comparable to Whites in Hawaii. Third, a greater percentage of Asian males drink and are more likely to drink heavily compared to Asian females. Fourth, among the Asian American population on the mainland United States, Japanese Americans tend to be most likely to use alcohol and Chinese Americans the least likely. Fifth, the frequency and amount of drinking are increasing in Asians both living in the United States and living overseas. Sixth, it is important to consider generational status, degree of acculturation, specific ethnic group, place of birth, and gender when analyzing patterns of alcohol use in Asian Americans.

A number of culturally based explanations have been offered to account for the differences in alcohol consumption among the different Asian groups. Singer (1972) observed a dual belief about the use of alcohol in Chinese culture. On the one hand, alcohol is attributed to certain negative effects on a person: (a) impairment of intellect, (b) impairment of morals, (c) predisposition to physical illness, (d) sexual impairment, (e) shortening of life span, (f) increased risk of suicide, and (g) increased risk of criminal behavior. On the other hand, alcohol is believed to have beneficial effects if used in moderation: (a) relief of rheumatism, (b) increase in blood circulation, (c) increase in blood production, (d) improvement of mental well-being, (e) relief of exhaustion, (f) improvement of digestion, (g) improvement of complexion, (h) improvement of appetite, and (i) expulsion of intestinal gas. Traditionally, drinking alcohol is sanctioned in defined social situations including banquets, family meals, and ceremonial occasions. Unlike modern and Western societies, in which social drinking is institutionalized and drinking excessively is used as a way of coping with life's stresses, alcohol consumption in Chinese folk society appears to be sanctioned primarily for ceremonial or medicinal purposes. Excessive drinking, secret drinking, drinking alone, and intoxication are highly disapproved by the Chinese. In addition, there is an absence of drinking-centered institutions and social groups in Chinese cul-

ture, which prevents people from drinking regularly and to the point of intoxication. Based on these observations, Singer concluded that there should be low rates of alcoholism among the Chinese.

Chu (1972) concurred that although Chinese American use of alcohol is common, the incidence of alcoholism is relatively rare due to norms related to moderation. He studied the drinking patterns of 41 low socioeconomic status, single Chinese males in San Francisco. The results indicated that 60% of the sample were abstainers, whereas only 7% were considered heavy drinkers. He found that there was a strong consensus that drunken behavior was inappropriate under any circumstances.

Koreans have been called the "Irish of the Orient" in part because of a purported proclivity toward alcohol use (Park et al., 1994). In modern Korean culture, importance is placed on males socializing together, drinking heavily, and competing with their friends and colleagues in rounds of drinking. However, the research on Korean Americans has found low rates of drinking. One explanation centers on the role of the Korean American churches in the United States. These churches serve an important function as sources of personal, social, and economic security for new Korean immigrants. The churches also practice strong prohibitions against alcohol use. It is possible that Korean males might greatly curtail their alcohol intake in America in contrast to the larger amounts usually consumed in Korea.

SMOKING AND TOBACCO USE

Since the 1960s, the public has become increasingly aware of the health risks associated with smoking. Long-term smoking has been linked to serious medical problems including lung cancer, emphysema, cancer of the larynx and esophagus, and a number of cardiovascular diseases (Jaffe, 1985). Cigarette smoking is responsible in some way for one of every six deaths in the United States, killing about 1,000 people each day (Cimons, 1992; U.S. Department of Health and Human Services, 1989). Similar to alcohol, the economic costs associated with cigarette smoking are substantial. Each year, smokers compile more than 80 million days lost at work and 145 million extra days of disability. Health costs associated with cigarettes exceed \$30 billion annually in the United States (Davison & Neale, 1994). The prevalence of habitual smoking has decreased significantly since 1965 among the general American adult population (Cimons, 1992; U.S. Department of Health and Human Services, 1989), but the prevalence remains higher among Asian Americans, particularly among the immigrant populations. Smoking among youths has not declined as significantly as has that of adults, and the use of smokeless tobacco has increased in recent years (Chassin, Presson, Sherman, McLaughlin, & Gioia, 1985). The research also indicates that if both parents and an older sibling smoke, then a youngster is four times as likely to smoke as when none of the other family members smoke (Davison & Neale, 1994).

Important differences exist in the prevalence of smoking among various racial and ethnic groups in the United States. De Moor, Elder, Young, Wildey, and Molgaard (1989) studied the prevalence of overall or "generic" tobacco use (i.e., cigarettes, chewing tobacco, or snuff) among Hispanic, White, African American, and Asian American youths in the 4th, 7th, 10th, and 12th grades in San Diego. The sample consisted of 3,068 (61.6%) Whites, 969 (19.5%) Hispanics, 553 (11.1%) APIs, and 390 (7.8%) African Americans. Overall, the prevalence of regular use (i.e., those who used tobacco at least once a month) was highest among Whites (25.8%), followed by Hispanics (19.7%), African Americans (17.6%), and Asians (12.6%). Asians had the lowest prevalence of regular users at each grade level and the lowest lifetime prevalence (i.e., those who used tobacco at least once in their lifetimes) at each grade level except the 10th grade. Of the lifetime users, Whites had the highest proportion of regular users (36.5%), followed by Hispanics (31.1%), African Americans (26.3%), and Asians (24.1%). Drug use involving marijuana, alcohol, or other drugs was found to be the most important predictor of tobacco use in each of the ethnic groups. Gender differences among the Asians were large relative to those found for Whites. At each grade level except the 10th grade, a greater percentage of Asian males were regular users (e.g., in the 12th grade, 18.8% male regular users vs. 8.3% female regular users), whereas the gender differences were less substantial for Whites (e.g., in the 12th grade, 31.9% male regular users vs. 31.2% female regular users). The investigators also examined the effect of exposure to adult tobacco use in the home on the tobacco use of the students. Youths who reported being exposed to tobacco use in the home had a significantly higher probability of regular tobacco use than did those who reported no exposure at home. The ratio of regular tobacco use among those exposed to in-home use relative to those not exposed was found to be the highest for Asians, which suggested that the exposure effects were greatest for this particular ethnic minority group.

Landrine, Richardson, Klonoff, and Flay (1994) hypothesized that although peer smoking may be the best predictor of smoking among White adolescents, this might not be the case across different ethnic groups, which could have serious implications for smoking prevention interventions. They examined the rates and predictors of adolescent cigarette smoking among 4,375 9th-grade students from Los Angeles and San Diego counties. The sample consisted of 1,293 White, 514 Black, 1,798 Latino, and 759 Asian American adolescents. Overall, they found that White adolescents smoked more than did minority youths. Whites had the highest frequency of smoking, followed by Hispanics, Asians, and African Americans. There were few ethnic minority differences, and the only significant difference in smoking rate was found between Hispanics and African Americans. Among the nonsmokers, 57.8% of the Asians had never smoked compared to 49.6% of the Whites, 59.5% of the African Americans, and 48.9% of the Hispanics. Asians had the lowest proportion of participants who smoked monthly (34.7%), but they also had the second highest rate of individuals who smoked weekly or daily (7.5%), exceeded only by Whites (9.7%). In terms of predictors of smoking, for Asians, not attending school was the single best predictor, ac-

counting for 17.3% of the variance. Other predictors included smoking by peers (9.6% of the variance) and drinking by significant adults (4.5% of the variance), whereas drug context at school, poor grades, self-care habits, risk taking, and smoking by the mother accounted for minimal variance. This study was one of the first to examine the significant predictors of smoking for Asian Americans. However, as in earlier research, this study did not investigate important inter-Asian variation related to different Asian ethnic subgroups or level of acculturation.

In one of the few studies to examine a specific Asian ethnic group, Wiecha (1996) surveyed Vietnamese, African American, Hispanic, and White adolescents in Massachusetts. Tobacco use among Vietnamese adolescents was of particular concern because studies of Vietnamese adult men have shown that this group's smoking rates are higher than those found in the general U.S. population. Estimates of smoking prevalence range from 35% to 57%. Southeast Asian men have been designated as a high-risk group by the Public Health Service because of the extent of the smoking problem among Vietnamese and other Southeast Asian men. Of the 2,816 respondents from two public middle schools and two public high schools, 8.1% were Vietnamese, 9.4% African American, 19.4% Hispanic, 57.5% White, and 5.6% other races/ethnicities. The results revealed that the prevalence of cigarette smoking among Vietnamese males (27.9%) was similar to that among White males (28.3%) and was higher than that among Hispanic (19.7%) and African American (18.9%) males. Vietnamese adolescent females had a very low proportion of smokers (3.7%). In general, Vietnamese males were less likely to smoke in middle school than were other students but were more likely to report smoking in high school than were non-Vietnamese students. The point estimate for current smoking for older (i.e., age 16 years or older) Vietnamese males (37.7%) exceeded the smoking rates of all other male subgroups in the study and was equivalent to the rate for older White girls (38.0%). In addition, older age, male gender, peer smoking, and carrying of a weapon were risk factors for current cigarette smoking for this group. One of the important social influences identified for the Vietnamese adolescents involved family members who smoked. In particular, 44.2% of the Vietnamese students had fathers who smoked, whereas only 8.1% had mothers who smoked.

Among adults, ethnic differences in the prevalence of smoking also vary by gender. According to the 1985 Health Interview Survey, African American, Asian American, and Hispanic men have surpassed White men in the prevalence of smoking. However, among women, smoking prevalence is highest among African Americans, followed by Whites, Hispanics, and Asians (Martin, Cummings, & Coates, 1990). One study examined ethnic differences in smoking behavior and attitudes among White, African American, Hispanic, and Asian American medical patients who were smokers (Martin et al., 1990). All patients who had smoked a cigarette within the past 7 days were asked to participate in the study. A total of 2,972 patients completed the baseline questionnaire including 1,840 Whites, 675 African Americans, 189 Hispanics, and 131 Asians. The small number of Asians surveyed was due in part to the exclusion of those patients who could not

read English or who could not understand and respond to the questions. This process could have excluded a significant number of Asians who were foreign born, particularly the recent immigrants and refugees who likely would have been heavier smokers. The results indicated that Asian smokers were significantly different from the other three ethnic groups in terms of the influence of family and friends on their smoking. They reported less parental smoking, less spousal smoking, and more pressure to quit smoking from both family and friends. The investigators suggested that this might be due, in part, to the greater number of children in the homes of Asian patients. Moreover, Asian smokers frequently cited keeping their children from being exposed to smoking as the reason for quitting. Contrary to previous findings examining gender differences, Asian women smoked slightly more cigarettes per day than did Asian men. However, given the exclusion of non-English-speaking respondents, the sample of Asians probably was not representative of the surrounding Asian American population. Asians comprised only 4.6% of the study's sample, whereas they constituted 14.1% of the population in the four cities from which the sample was collected.

In sum, the research suggests that gender and acculturation have important influences on the smoking rates of Asian Americans. Studies have shown that Asian Americans tend to smoke less than Whites and other ethnic minority groups, but these differences can be primarily attributed to the low smoking rates of Asian American women. Asian American men, especially those who are less acculturated, have smoking rates similar to those found for Whites. For example, Vietnamese male youths had rates similar to those found for White male youths, but Vietnamese female youths had the lowest smoking rate. Moreover, the smoking rate of the Vietnamese male youths exceeded rates found for both Hispanic and African American male youths.

GAMBLING

Like alcoholism and drug dependence, compulsive gambling is a progressive impulse disorder. Gambling has increased substantially in the past decade, and the problems associated with gambling have had profound social and economic consequences for the United States. Gambling expenditures have escalated greatly since 1974. In that year, approximately 61% of the U.S. population gambled (Lesieur & Rosenthal, 1991). At that time, it was estimated that Americans legally wagered \$17.35 billion (Commission on the Review of the National Policy Toward Gambling, 1976). In 1988, \$210 billion was legally wagered (Christiansen, 1989), and by 1992, the money wagered legally had increased to \$330 billion (Volberg, 1996). This represents a 19-fold increase in less than 20 years. Gambling is now legal in some form in 48 of the 50 states. Current estimates are that the large majority of the U.S. population gambles. A 1989 Gallup poll found that 81% of the general population had gambled, with 71% doing so in the past year and 31% doing so weekly (Hugick, 1989). Despite the substantial increase in gambling in recent years, gambling has received relatively less public scrutiny

than has alcohol, smoking, and other drug use. Accordingly, a detailed discussion of pathological gambling is presented here, followed by an analysis of the research on gambling among Asian Americans.

Recent prevalence studies have been conducted through telephone surveys involving primarily adult samples (Culleton & Lang, 1985; Sommers, 1988; Volberg & Steadman, 1988, 1989). From this research, the rate of problematic gambling has been estimated to range from 0.1% to 6.3%, depending on the particular location, the prevalence time frame (e.g., current vs. lifetime), the type of gambling involvement (e.g., problem vs. probable pathological), and the methodology. For example, Sommers (1988) conducted a telephone survey in the Delaware Valley and found that 4.12% of respondents were potentially pathological gamblers and 3.37% were probable pathological gamblers. Volberg (1996) reported that 2.9% of a California sample were classified as problem gamblers and 1.2% as probable pathological gamblers. In one of the most frequently cited prevalence studies, Volberg and Steadman (1988) conducted a telephone survey among the adult population in New York. This study found that 2.8% of the respondents were classified as problem gamblers and an additional 1.4% were classified as probable pathological gamblers, according to their scores on the South Oaks Gambling Screen (SOGS). As in the Volberg and Steadman study, most of the prevalence studies have differentiated between pathological and problem gamblers based on scores on the SOGS, in which the latter group's gambling behavior is frequent but the problems associated with the gambling are less numerous and less severe relative to those of the former group (Lesieur & Blume, 1987).

Pathological gambling is a diagnosable mental disorder and is defined in the DSM-IV as a problem of impulse control characterized by "persistent and recurrent maladaptive gambling behavior that disrupts personal, family, and vocational pursuits" (American Psychiatric Association, 1994, p. 615). Pathological gamblers often encounter family, job, financial, and legal difficulties as a result of their addiction. In the family, excessive gambling is associated with increased stress, a pattern of lies and deception on the part of the gambling spouse, increased risk of divorce, and other forms of family dysfunction (Lesieur, 1984; Lorenz & Shuttlesworth, 1983; Wanda & Foxman, 1971). On the job, pathological gamblers are more likely to be less productive and to embezzle when employed by others, and they have high rates of business failure when self-employed (Lesieur, 1984; Livingston, 1974). The evidence consistently shows that pathological gambling is associated with financial difficulties and illegal activities to support an increasingly expensive addiction (Custer, 1982; Lesieur, 1979). Estimates of the prevalence of the disorder in the United States range from 1.1 million (Custer & Milt, 1985) to 9.0 million (Gam-Anon Publishing, n.d.).

Although the type of gambling engaged in depends in large measure on what is available, the preferred forms of gambling seem to be sports betting, cards, casino gambling, and horse racing. Significant problems also are encountered among those favoring the lottery, stock market, bingo, pull tabs, and bar games as well as those betting on games of skill (e.g., golf, bowling, pool). In males, the disorder typically begins early in adolescence (Custer & Milt, 1985; Lesieur &

Rosenthal, 1991). Although a few are "hooked" with their first bet, for most, it is more insidious. There may be gradual dependence or years of social gambling, followed by an abrupt onset of pathological gambling. The latter may be precipitated by greater accessibility and exposure to gambling or by some psychologically significant loss or life stressor.

Approximately one third of the pathological gamblers are female (Lesieur, 1988; Lesieur & Blume, 1991), and the natural history of the disorder is somewhat different for the two genders. Women typically start gambling later in life, often after adult roles have been established. They are more apt to be depressed and to gamble less for the action or excitement than for the escape. Winning big is less important, as is the need to impress. They typically play less competitive forms of gambling in which luck is more valued than skill, and they play alone. Female gamblers are underrepresented in treatment programs and make up only 2% to 4% of the population of Gamblers Anonymous. This is largely a function of the greater stigma for women. There is a high possibility of multiple addictions. They may be simultaneous or sequential. Various studies of pathological gamblers in treatment have revealed that approximately 50% have histories of alcohol or drug abuse or dependence (Lesieur, 1988; Linden, Pope, & Jonas, 1986; Ramirez, McCormick, Russo, & Taber, 1984). According to several surveys of pathological gamblers in treatment or Gamblers Anonymous (Ciarrocchi & Richardson, 1989; Custer & Custer, 1978; Lesieur, 1988), 18% to 43% had a parent who was alcoholic or had a significant alcohol or drug problem, and 20% to 28% had a parent who was a probable pathological gambler.

There typically are four phases or stages in the career of the pathological gambler: winning, losing, desperation, and hopelessness. Compulsive gambling generally progresses in a pattern, with predictable crises and accelerated efforts to recoup losses. The personality traits and social characteristics of both male and female compulsive gamblers include above-average intelligence and education; a need for challenge, stimulation, and risk taking; and competitiveness (Peck, 1986). In the early stages of the disorder, the gambler tends to win and often continues to win because initial luck is replaced by skillful playing and astute betting strategies. During the winning phase, confidence builds along with excitement and the sense that the gambler is exceptional. At this point, the big win occurs; the amount won may exceed a year's salary. The gambler's story almost always includes a big win that sets off the compulsion (Custer & Custer, 1978).

The big win typically introduces the next phase—losing. In the losing phase, the gambler is betting compulsively and "chasing"—betting more and more to get back the money lost. Skilled gamblers know that chasing is a loser's or a novice player's strategy, but the gambler cannot stop himself or herself. The gambler, now betting poorly and more heavily, incurs more and more losses. After income and savings are depleted, the gambler borrows. The irrational belief that he or she will soon win and repay the debt has become a part of the gambler's self-concept and sense of value. Most compulsive gamblers report that the initial experience of borrowing brings a feeling akin to that of the big win. Now the pathological gambler begins to borrow heavily as losses mount—with predictable

consequences. The gambler conceals losses and manipulates family members and friends as he or she tries to pay off pressing debts. When legal financial resources are exhausted, compulsive gamblers might turn to loan sharks and bookies. Divorce, imprisonment, and job loss become increasing threats. With fear of exposure and financial ruin, the compulsive better might become paranoid. Some confess their problem to family members and receive partial or temporary help in the form of a financial "bailout." The bailout only defers an acceptance of responsibility. For the pathological gambler, the reprieve is like the big win or an initial loan (Peck, 1986). After the bailout and repeated failures to keep promises to stop gambling, the third and final phase—desperation—sets in. Gambling continues with an "all-consuming intensity and apparent disregard for family, friends, and employment" (Moran, 1970). Eating and sleeping disturbances ensue, and symptoms at this stage include depression, irritability, hypersensitivity, and restlessness.

Anecdotal accounts strongly suggest that Asian Americans may gamble more than other ethnic groups (e.g., Kim, 1996). For example, Lesieur (1989) noted, "Folk wisdom has it that Chinese Americans are heavy gamblers, yet there is no research on problem gambling among members of this ethnic group to my knowledge." In the only study that examined ethnic differences in gambling, Asians gambled the most frequently. Lesieur et al. (1991) studied gambling and pathological gambling among students from six colleges and universities in five states in the northeastern area of the United States. Of the 1,771 students surveyed, 4% of the sample were Asian Americans. Results indicated that Asians had by far the highest rate of gambling (12.5%) compared to African Americans, Whites, and American Indians (rates of 4% to 5%).

METHODOLOGICAL AND CONCEPTUAL PROBLEMS

The research conducted on addictive problems among Asian Americans has been informative in that previously little research, if any, had been conducted on this population. However, there are some important limitations that must be considered when interpreting this information. Many of the studies have (a) focused on the larger and more acculturated Asian Pacific groups such as Chinese and Japanese, (b) used primarily student samples, (c) rarely examined the Asian American groups who might be at greatest risk for addictive problems (e.g., refugees, recent immigrants, adolescents), (d) relied on disproportionately small sample sizes, (e) seldom controlled for socioeconomic and other demographic differences that might be confounded with ethnicity, (f) failed to use bilingual measures, (g) administered translated measures without evaluating conceptual equivalence, and (h) not accounted for cultural differences that might affect self-report or self-disclosure with respect to addiction problems that often carry with them great social stigmas. Although a number of these problems can be observed in certain studies, the most frequent limitations have involved the lack of attention to inter-

and intragroup diversity among Asian Americans, the use of self-report measures, and the infrequent use of culturally based variables to explain ethnic differences in addictive behaviors.

Any examination of Asian American addictive problems must address the wide range of diversity among different Asian American groups. As in other areas of social science research, previous research has assumed or treated Asian Americans as one aggregated, single population entity. Often the intergroup diversity among Asian Americans has gone unrecognized or underappreciated. More than 20 API groups have been identified by the U.S. Bureau of the Census. The diverse nature of these populations is evident on a number of demographic characteristics such as birthplace, age, family income, and educational attainment and achievement. Concomitant with this intergroup diversity are important within-group differences in terms of acculturation level, ethnic identity, primary language dialect, country of origin, and the like. Some of these variables might be important predictors of addictive behaviors for a particular Asian American population. A related problem is the need to reappraise the measurement of acculturation and cultural identity variables. These variables constitute one of the most important domains of individual differences within Asian American groups. Previous research has assumed that acculturation and cultural identity development reflect a bipolar model. This model posits that as people become more acculturated or identified with Western culture, they become less acculturated or identified with their particular Asian American culture. However, studies on acculturation (Hurh & Kim, 1984) and cultural identity (Oetting & Beauvais, 1990-1991) have found that for ethnic minority populations, identification or association with a particular culture may occur independently of identification or association with another culture.

Almost all of the measures used in addictive behavior research on Asian Americans rely on the self-report of the respondent. A number of problems can occur when using self-report measures with certain Asian American populations. First, many Asian Americans whose primary language is not English might have difficulty in responding to items that have very little context in terms of time, place, and person. Second, there often is substantial social stigma and shame associated with having personal problems such as substance abuse or gambling that impair a person's ability to fulfill role responsibilities and obligations to the family or community. Consequently, self-report responses may vary greatly depending on the public or private nature of the measure's administration. Many self-report measures need to be administered under fairly public conditions because many Asian Americans who are non-English speaking require bilingual interviewers who can translate the questionnaire. In these cases, the public nature of the administration might seriously compromise open self-disclosure of sensitive, personal issues associated with addiction problems.

Too often, addictive behavioral research on Asian Americans has been focused at a descriptive level in which ethnic differences are examined. The distinction between ethnic and cultural differences is an important one to make because it appears that the latter constitute the more proximal determinants of addictive

behaviors. Ethnic differences refer to variations on those personal-social characteristics (e.g., social class) that an individual tends to have simply by being a member of a certain ethnic group. Cultural differences, on the other hand, imply certain differences in attitudes, values, and perceptual constructs as a result of different cultural experiences. Whereas the former simply involve group membership, the latter constitute a host of sociopsychological variables that are linked to different cultural lifestyles and perspectives. Ethnicity implies cultural differences, but often these sociopsychological variables have not been directly assessed in addictive behavior research. At a minimum, research on cultural differences must achieve two empirical tasks. First, a study must demonstrate that differences exist on a sociocultural variable. Second, there must be some evidence that there is a functional link or relationship between these differences and the behavior of interest, in this case, an addictive behavior. For example, studies on substance abuse either have simply described ethnic differences in drug consumption or have examined cultural differences but not linked these differences to differential substance use.

As in other areas of social science, etiological research on addictive behaviors has suffered from a lack of causal specificity. As Cullen (1984) noted, social science research addresses two general issues: (a) the identification and examination of social and/or personal conditions that motivate, predispose, or increase a person's vulnerability to develop some type of disorder or social deviance and (b) the identification and examination of conditions that account for the *specific* form of the disorder or deviance. Researchers have tended to assume a one-to-one correspondence between etiological factors and a specific type of disorder (e.g., gambling, alcohol abuse) when, in reality, this relationship does not exist, leading to the "fallacy of etiological specificity" (Cassell, 1975). Rather, these conditions often cause all types of disorders reflecting an indeterminate relationship between the cause and a particular disorder. This *problem of indeterminacy* can be seen in the research on stress.

Stress has been an integral concept in understanding how social factors contribute to psychological problems. The stress construct has become one of the unifying themes for many sociological and psychiatric epidemiological studies that, over time, have led to a voluminous number of empirical articles (Thoits, 1995). Despite the immense activity that has been generated to identify specific circumstances under which stress predisposes people to develop psychological problems, it is clear that much of this work has been attempts that addressed only the first issue posed in the preceding paragraph; that is, the research has found that although stress is associated with a particular type of mental health or social problem, it also is associated with a wide range of other problem behaviors. In other words, it has a universal negative effect on an individual's functioning (Aneshensal, Rutter, & Lachenbruch, 1991; Horwitz, White, & Howell-White, 1996; Umberson, Chen, House, & Hopkins, 1996). Most studies on stress cannot address the second question because most designs have prematurely assumed etiological specificity and have not concurrently assessed other disorders with which stress might be associated. As a consequence, the second

issue has been virtually lost from most discussions about stress and the problem behavior. Similarly, in addictive behavior research, it is unclear whether factors found to be related to one addictive problem, such as gambling, also are, in general, factors that are related to any mental health problem or at least to other difficulties involving problems of internal control (e.g., substance abuse). For example, Lopez-Ibor and Carrasco (1995) found that the prevalence of pathological gambling is higher among first-degree relatives (e.g., parents, siblings) of pathological gamblers (20%). However, they also found that 25% to 50% of all pathological gamblers had first-degree relatives who abused alcohol.

It would be more informative if future research on addictive behaviors placed a more concerted effort on the second issue by examining variables (called "structuring variables") that shape the specific behavioral and psychological responses to stress (Cullen, 1984). More specifically, the research should employ designs that can distinguish between the *nonspecific* factors that predispose or make a person vulnerable to developing pathology and the *structuring* factors that shape gambling behavior and gambling problems. This approach might be especially important in the study of cultural factors. It is highly possible that the cultural context in which addictive behaviors develop may serve to structure the specific form that the addiction takes. In other words, cultural variables might be some of the most important structuring factors for a particular addictive disorder. In this way, we can attain a better understanding of how culture actually affects a person's addiction and its subsequent effects on functioning.

REFERENCES

- Ahern, F. M. (1989). Alcohol use and abuse among four ethnic groups in Hawaii: Native Hawaiians, Japanese, Filipinos, and Caucasians. In National Institute on Alcohol Abuse and Alcoholism (Ed.), *Alcohol use among U.S. ethnic minorities* (NIAAA Research Monograph 18, DHHS Publication No. [ADM] 89-1435, pp. 315-328). Rockville, MD: NIAAA.
- Alcoholism Council of Greater New York. (1987). *Some facts of the alcoholism industry*. New York: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Aneshensal, C. S., Rutter, C. M., & Lachenbruch, P. A. (1991). Social structure, stress, and mental health: Competing conceptual and analytic models. *American Sociological Review*, 56, 166-178.
- Asian Inc. (1978). *Assessment of alcohol use service needs among Asian Americans in San Francisco*. Unpublished manuscript, Asian Inc., San Francisco.
- Ball, J. C., & Lau, M. P. (1966). The Chinese narcotic addict in the United States. *Social Forces*, 45, 68-72.
- Barnes, G. M., & Welte, J. W. (1986). Patterns and predictors of alcohol use among 7-12th grade students in New York State. *Journal of Studies on Alcohol*, 47(1), 53-62.
- Bootzin, R. B., Acocella, J. R., & Alloy, L. B. (1993). *Abnormal psychology: Current perspectives*. New York: McGraw-Hill.
- Cassell, J. (1975). Social science in epidemiology: Psychosocial processes and "stress" theoretical formulation. In E. Struening & M. Guttentag (Eds.), *Handbook of Evaluation* (pp. 537-549). Beverly Hills, CA: Sage.
- Chafetz, M. E. (1964). Consumption of alcohol in the Far and Middle East. *New England Journal of Medicine*, 271, 297-301.

- Chassin, L., Presson, C., Sherman, S. J., McLaughlin, L., & Gioia, D. (1985). Psychosocial correlates of adolescent smokeless tobacco use. *Addictive Behaviors*, 10, 431-435.
- Chi, I., Lubben, J. E., & Kitano, H. H. L. (1989). Differences in drinking behavior among three Asian-American groups. *Journal of Studies on Alcohol*, 50(1), 15-23.
- Chin, K., Lai, T., & Rouse, M. (1991). Social adjustment and alcoholism among Chinese immigrants in New York City. *International Journal of the Addictions*, 25, 709-730.
- Christiansen, E. M. (1989). 1988 gross annual wager. *Gaming and Wagering Business*, 10, 8.
- Chu, G. (1972). Drinking patterns and attitudes of rooming-house Chinese in San Francisco. *Quarterly Journal of Studies on Alcohol*, 6, 58-68.
- Ciarrocchi, J., & Richardson, R. (1989). Profile of compulsive gamblers in treatment: Update and comparisons. *Journal of Gambling Behavior*, 5, 53-65.
- Cimons, M. (1992, May 22). Record number of Americans stop smoking. *Los Angeles Times*, p. A4.
- Commission on the Review of the National Policy Toward Gambling. (1976). *Gambling in America*. Washington, DC: Government Printing Office.
- Cullen, F. T. (1984). *Rethinking crime and deviance theory: The emergence of a structuring tradition*. Totowa, NJ: Rowman & Allanheld.
- Culleton, R. P., & Lang, M. H. (1985). *The prevalence rate of pathological gambling in the Delaware Valley in 1984*. Camden, NJ: Rutgers University Press.
- Custer, R. L. (1982). An overview of compulsive gambling. In P. A. Carone, S. N. Yoles, & L. Krinsky (Eds.), *Addictive disorders update: Alcoholism, drug abuse, gambling* (pp. 107-124). New York: Human Sciences Press.
- Custer, R., & Custer, L. (1978). Characteristics of the recovering compulsive gambler: A survey of 150 members of Gamblers Anonymous. Paper presented at the Annual Conference on Gambling, Reno, NV.
- Custer, R. L., & Milt, H. (1985). *When luck runs out*. New York: Facts on File Publications.
- Davison, G. C., & Neale, J. M. (1994). *Abnormal psychology* (6th ed.). New York: John Wiley.
- De Moor, C., Elder, J. P., Young, R. L., Wildey, M. B., & Molgaard, C. A. (1989). Generic tobacco use among four ethnic groups in a school age population. *Journal of Drug Education*, 19, 257-270.
- Gam-Anon Publishing. (n.d.). *Gamblers Anonymous* (3rd ed., pamphlet). Los Angeles: Author.
- Horwitz, A. V., White, H. R., & Howell-White, S. (1996). The use of multiple outcomes in stress research: A case study of gender differences in responses to marital dissolution. *Journal of Health and Social Behavior*, 37, 278-291.
- Hugick, L. (1989). Gambling on the rise: Lotteries lead the way. *Gallup Reports*, No. 285, pp. 32-39.
- Hurh, W. M., & Kim, K. C. (1984). *Korean immigrants in America: A structural analysis of ethnic confinement and adhesive adaptation*. Rutherford, NJ: Fairleigh Dickinson University Press.
- Jaffe, J. H. (1985). Drug addiction and drug abuse. In Goodman and Gilman (Eds.), *The pharmacological basis of therapeutic behavior*. New York: Macmillan.
- Kandel, D., Single, E., & Kessler, R. C. (1976). The epidemiology of drug use among New York State high school students: Distribution, trends, and change in rates of use. *American Journal of Public Health*, 66, 43-53.
- Kaplan, H. I., & Sadock, B. J. (1991). *Synopsis of psychiatry: Behavioral sciences, clinical psychiatry* (6th ed.). Baltimore, MD: Williams & Wilkins.
- Kim, Y. (1996). Leaving Las Vegas. *A Magazine*, 42, 39-43, 83-84.
- Kitano, H. L., & Chi, I. (1985). Asian Americans and alcohol: The Chinese, Japanese, Koreans, and Filipinos in Los Angeles. In D. Spiegler, D. Tate, S. Aitken, & C. Christian (Eds.), *Alcohol use among U.S. ethnic minorities* (pp. 373-382). Rockville, MD: National Institute on Alcohol Abuse and Alcoholism.
- Kitano, H. H. L., Chi, I., Rhee, S., Law, C. K., & Lubben, J. E. (1992). Norms and alcohol consumption: Japanese in Japan, Hawaii and California. *Journal of Studies on Alcohol*, 53(1), 33-39.
- Kitano, H. H. L., & Daniels, R. (1988). *Asian Americans: Emerging minorities*. Englewood Cliffs, NJ: Prentice Hall.
- Klatsky, A. L., Friedman, G., Siegelau, A. B., & Gerard, M. J. (1977). Alcohol consumption among White, Black, or Oriental men and women. *American Journal of Epidemiology*, 105, 311-323.

- Klatsky, A. L., Siegelau, A. V., Landy, C., & Friedman, G. D. (1983). Racial patterns of alcoholic beverage use. *Alcoholism: Clinical and Experimental Research*, 7, 372-377.
- Kotani, R. (1982). AJA's and alcohol abuse. *Hawaii Herald*, 3(13), 4.
- Landrine, H., Richardson, J. L., Klonoff, E. A., & Flay, B. (1994). Cultural diversity in the predictors of adolescent cigarette smoking and the relative influence of peers. *Journal of Behavioral Medicine*, 17, 331-346.
- Lemert, E. M. (1964). Forms and pathology of drinking in three Polynesian societies. *American Anthropologist*, 66, 361-374.
- Lesieur, H. R. (1979). The compulsive gambler's spiral of options and involvement. *Psychiatry*, 42, 79-87.
- Lesieur, H. R. (1984). *The chase: Career of the compulsive gambler*. Cambridge, MA: Schenkman Books.
- Lesieur, H. R. (1988). The female pathological gambler. In W. R. Eadington (Ed.), *Gambling studies: Proceedings of the 7th International Conference on Gambling and Risk Taking* (pp. 230-258). Reno: University of Nevada.
- Lesieur, H. R. (1989). Current research into pathological gambling and gaps in the literature. In H. J. Shaffer, S. A. Stein, B. Gambino, & T. N. Cummings (Eds.), *Compulsive gambling: Theory, research, and practice* (pp. 225-248). Lexington, MA: Lexington Books.
- Lesieur, H. R., & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry*, 144, 1184-1188.
- Lesieur, H. R., & Blume, S. B. (1991). Evaluation of patients treated for pathological gambling in a combined alcohol, substance abuse and pathological gambling treatment unit using the Addiction Severity Index. *British Journal of Addiction*, 86, 1017-1028.
- Lesieur, H. R., Cross, J., Frank, M., Welch, M., White, C. M., Rubenstein, G., Moseley, K., & Mark, M. (1991). Gambling and pathological gambling among university students. *Addictive Behaviors*, 16, 517-527.
- Lesieur, H. R., & Rosenthal, R. J. (1991). Pathological gambling: A review of the literature (prepared for the American Psychiatric Association Task Force on DSM-IV Committee on Disorders of Impulse Control not elsewhere classified). *Journal of Gambling Studies*, 7, 5-39.
- Linden, R. D., Pope, H. G., & Jonas, J. M. (1986). Pathological gambling and major affective disorder: Preliminary findings. *Journal of Clinical Psychiatry*, 47, 201-203.
- Livingston, J. (1974). *Compulsive gamblers: Observations on actions and abstinence*. New York: Harper Torchbooks.
- Lopez-Ibor, J. J., & Carrasco, J. L. (1995). Pathological gambling. In E. Hollander & D. J. Stein (Eds.), *Impulsivity and aggression* (pp. 137-149). Chichester, UK: Wiley.
- Lorenz, V. C., & Shuttlesworth, D. E. (1983). The impact of pathological gambling on the spouse of the gambler. *Journal of Community Psychology*, 11, 67-76.
- Lubben, J. E., Chi, I., & Kitano, H. H. L. (1989). The relative influence of selected social factors on Korean drinking behavior in Los Angeles. *Advances in Alcohol and Substance Abuse*, 8(1), 1-17.
- Maddahian, E., Newcomb, M. D., & Bentler, P. M. (1985). Single and multiple patterns of adolescent substance use: Longitudinal comparisons of four ethnic groups. *Journal of Drug Education*, 15, 311-326.
- Marchand, L. L., Kolonel, L. N., & Yoshizawa, C. N. (1989). Alcohol consumption patterns among the five major ethnic groups in Hawaii: Correlations with incidence of esophageal and oropharyngeal cancer. In National Institute on Alcohol Abuse and Alcoholism (Ed.), *Alcohol use among U.S. ethnic minorities* (NIAAA Research Monograph 18, DHHS Publication No. [ADM] 89-1435, pp. 355-371). Rockville, MD: NIAAA.
- Martin, R. V., Cummings, S. R., & Coates, T. J. (1990). Ethnicity and smoking: Differences in White, Black, Hispanic, and Asian medical patients who smoke. *American Journal of Preventive Medicine*, 6(4), 194-199.
- Moran, E. (1970). Varieties of pathological gambling. *British Journal of Psychiatry*, 116, 593-597.
- Morgan, M. C., Wingard, D. L., & Felice, M. E. (1984). Subcultural differences in alcohol use among youth. *Journal of Adolescent Health Care*, 5, 191-195.

- Murakami, S. R. (1989). An epidemiological survey of alcohol, drug, and mental health problems in Hawaii: A comparison of four ethnic groups. In National Institute on Alcohol Abuse and Alcoholism (Ed.), *Alcohol use among U.S. ethnic minorities* (NIAAA Research Monograph 18, DHHS Publication No. [ADM] 89-1435, pp. 343-353). Rockville, MD: NIAAA.
- Nakagawa, B., & Watanabe, R. (1973). *A study of the use of drugs among Asian American youths of Seattle*. Seattle, WA: Demonstration Project for Asian Americans.
- Nakuda, A. (1972). Urbanization and consumption of alcoholic beverages. *Journal of Human Ergology*, 1, 29-44.
- National Council on Alcoholism. (1986). *Facts on alcoholism*. New York: Author.
- National Institute on Alcohol Abuse and Alcoholism & National Institute on Alcoholism in Japan. (1991). *Alcohol consumption patterns and related problems in the United States and Japan: Summary report of a joint United States-Japan alcohol epidemiological project*. Washington, DC: Government Printing Office.
- National Institute on Drug Abuse. (1989). *1988 National Household Survey on Drug Abuse*. Rockville, MD: Author.
- National Institute on Drug Abuse. (1990). *National Household Survey on Drug Abuse: Population estimates 1988*. Rockville, MD: Author.
- Oetting, E. R., & Beauvais, F. (1990-1991). Orthogonal cultural identification theory: The cultural identification of minority adolescents. *International Journal of the Addictions*, 25, 655-685.
- Park, J. Y., Huang, Y., Nagoshi, C. T., Schwitters, S. Y., Johnson, R. C., Ching, C. A., & Bowman, K. S. (1994). The flushing response and alcohol use among Koreans and Taiwanese. *Journal of Studies on Alcohol*, 45, 481-485.
- Peck, C. P. (1986). A public mental health issue: Risk-taking behavior and compulsive gambling. *American Psychologist*, 41, 461-465.
- Porter, M. R., Vieira, T. A., Kaplan, G. J., Heesch, J. R., & Colyar, A. V. (1973). Drug use in Anchorage, Alaska: A survey of 15,634 students in Grades 6 through 12—1971. *Journal of the American Medical Association*, 223, 657-664.
- Rachal, J. V., Williams, J. R., Brehm, M. L., Cavanaugh, G., Moore, R. P., & Echerman, W. C. (1975). *A national survey of adolescent drinking behavior, attitudes and correlates: Final report*. Springfield, VA: National Technical Information Service.
- Ramirez, L. F., McCormick, R. A., Russo, A. M., & Taber, J. L. (1984). Patterns of substance abuse in pathological gamblers undergoing treatment. *Addictive Behaviors*, 8, 425-428.
- Schwitters, S. Y., Johnson, R. C., McClearn, G. E., & Wilson, J. R. (1982). Alcohol use and the flushing response in different racial-ethnic groups. *Journal of Studies on Alcohol*, 43, 1259-1262.
- Singer, K. (1972). Drinking patterns and alcoholism in the Chinese. *British Journal of Addiction*, 67(1), 3-14.
- Sommers, I. (1988). Pathological gambling: Estimating prevalence and group characteristics. *International Journal of Addictions*, 23, 477-490.
- Stinson, F. S. (1984). *Use of alcohol by Native Hawaiians*. Unpublished manuscript, CSR Inc., Washington, DC.
- Strimbu, J. L., Schoenfeldt, L. F., & Sims, O. S., Jr. (1973). Drug usage in college students as a function of racial classification and minority group status. *Research in Higher Education*, 1, 263-272.
- Sue, S., Kitano, H. H. L., Hatanaka, H., & Yeung, W. T. (1985). Alcohol consumption among Chinese in the United States. In L. A. Bennett & G. M. Ames (Eds.), *The American experience with alcohol*. New York: Plenum.
- Sue, S., & Morishima, J. K. (1982). *The mental health of Asian Americans*. San Francisco: Jossey-Bass.
- Sue, S., & Nakamura, C. (1984). An integrative model of physiological and social/psychological factors in alcohol consumption among Chinese and Japanese Americans. *Journal of Drug Issues*, 14, 349-364.
- Sue, S., Zane, N., & Ito, J. (1979). Alcohol drinking patterns among Asian and Caucasian Americans. *Journal of Cross-Cultural Psychology*, 10, 41-56.

- Sue, S., Zane, N., & Young, K. (1994). Research on psychotherapy with culturally diverse populations. In A. Bergin & S. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed.). New York: John Wiley.
- Thoits, P. A. (1995). Identity-relevant events and psychological symptoms: A cautionary tale. *Journal of Health and Social Behavior*, 36, 72-82.
- Toneatto, T., Sobell, L. C., Sobell, M. B., & Leo, G. I. (1991). Psychoactive substance use disorder (alcohol). In M. Hersen & S. M. Turner (Eds.), *Adult psychopathology and diagnosis* (2nd ed., pp. 84-109). New York: John Wiley.
- Trimble, J. E., Padilla, A., & Bell, C. S. (1987). *Drug abuse among ethnic minorities*. Rockville, MD: National Institute on Drug Abuse.
- Uba, L. (1994). *Asian Americans: Personality patterns, identity, and mental health*. New York: Guilford.
- Umberson, D., Chen, M. D., House, J. S., & Hopkins, K. (1996). The effect of social relationships on psychological well-being: Are men and women really so different? *American Sociological Review*, 61, 837-857.
- U.S. Bureau of the Census. (1990). *Statistical abstract of the United States* (110th ed.). Washington, DC: Government Printing Office.
- U.S. Department of Health and Human Services. (1981). *The fourth special report to the United States Congress on alcohol and health*. Washington, DC: Alcohol, Drug Abuse, and Mental Health Administration.
- U.S. Department of Health and Human Services. (1989). *Reducing the health consequences of smoking: 25 years of progress* (DHHS Publication No. CDC 89-84-11). Washington, DC: Author.
- Volberg, R. A. (1996). Prevalence studies of problem gambling in the United States. *Journal of Gambling Studies*, 12, 111-128.
- Volberg, R. A., & Steadman, H. J. (1988). Refining prevalence estimates of pathological gambling. *American Journal of Psychiatry*, 145, 502-505.
- Volberg, R. A., & Steadman, H. J. (1989). Prevalence estimates of pathological gambling in New Jersey and Maryland. *American Journal of Psychiatry*, 146, 1618-1619.
- Wanda, G., & Foxman, J. (1971). *Games compulsive gamblers, wives and families play*. Downey, CA: Gam-Anon Publishing.
- Wiecha, J. M. (1996). Differences in patterns of tobacco use in Vietnamese, African-American, Hispanic, and Caucasian adolescents in Worcester, Massachusetts. *American Journal of Preventive Medicine*, 12, 29-37.
- Wilson, J. R., McClearn, G. E., & Johnson, R. C. (1978). Ethnic variation in use and effects of alcohol. *Drug and Alcohol Dependence*, 3, 147-151.
- Yeh, E., & Hwu, H. (1984). *Alcohol abuse and dependence in a Chinese metropolis: Findings from an epidemiologic study in Taipei City*. Paper presented at the Third Pacific Congress of Psychiatry, Seoul, Korea.
- Yu, E. S. H., Liu, W. T., Xia, Z., & Zhang, M. (1989). Alcohol use, abuse, and alcoholism among Chinese Americans: A review of the epidemiological data. In National Institute on Alcohol Abuse and Alcoholism (Ed.), *Alcohol use among U.S. ethnic minorities* (NIAAA Research Monograph 18, DHHS Publication No. [ADM] 89-1435, pp. 329-341). Rockville, MD: NIAAA.
- Zane, N., & Kim, J. (1994). Substance use and abuse among Asian Americans. In N. Zane, D. Takeuchi, & K. Young (Eds.), *Confronting critical health issues of Asian and Pacific Islander Americans*. Thousand Oaks, CA: Sage.