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Substance Use and Abuse

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The use and abuse of alcohol and other drugs has become a major health problem in the United States. It is estimated that during any given month, 14 million people in the nation have consumed some type of illicit drug and that 2.7% of the population 12 years or older are in need of treatment for substance abuse problems (Glantz & Pickens, 1992). As might be expected, the consumption of legal drugs is even more prevalent. In a recent national survey of high school seniors, 81% of the sample reported having used alcohol (National Institute on Drug Abuse, 1991). Everyday use of alcohol was reported by 4% of the seniors, and 32% of the students reported having five or more drinks during a single occasion within the previous 2 weeks. These trends are cause for great concern, because in addition to their obvious effects on individuals' health and social, psychological, and vocational functioning (Ball, Shaffer, & Nurco, 1983; Kandel, Davies, Karus, & Yamaguchi, 1986; Ross, Glaser, & Germanson, 1988; Roy et al., 1991), alcohol and other drug abuse problems incur substantial health care costs for society. Rice, Kelman, and Miller (1991) estimate that total losses to the economy

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that are related to alcohol and drug abuse are \$85.5 billion and \$58.3 billion, respectively.

In contrast to the increased salience of alcohol and other drug issues for the nation at large, there exists a common perception that these problems have relatively little impact on Asian Pacific American communities, given the apparently low prevalence of alcohol and other drug use in these communities. The prevalence of drug abuse in these communities is a very controversial topic because of its important implications for research funding and health services to these communities. Because there is a pressing need to understand the extent of drug use and abuse among Asian Pacific Americans, the purpose of this chapter is to provide a detailed review of the research on substance use and abuse within this population, with attention to (a) the prevalence of substance use and abuse, (b) the effectiveness of prevention and treatment programs in serving these communities, and (c) the major methodological limitations of such studies. We also discuss certain strategies that may improve substance abuse research with Asian Pacific American populations.

Extent of Substance Abuse Among Asian Pacific Americans

The relatively small amount of research that has been conducted on Asian Pacific Americans suggests that this population uses and abuses substances less frequently than do members of other racial/ethnic groups (e.g., Iiyama, Nishi, & Johnson, 1976; Johnson, Nagoshi, Ahern, Wilson, & Yuen, 1987; McLaughlin, Raymond, Murakami, & Gilbert, 1987; Sue & Morishima, 1982; Sue, Zane, & Ito, 1979; Trimble, Padilla, & Bell, 1987; Tucker, 1985). These data trends have been found using both treated case and untreated case methods for examining rates of alcohol and drug abuse. In the former, prevalence rates are estimated from utilization data of those seeking treatment for substance abuse problems; in the latter, rate estimates are based on surveys of samples drawn from noninstitutionalized populations.

Estimates From Untreated Cases

Research using untreated cases has involved primarily small-area surveys of either student or community populations. The majority of the studies have considered Asian Pacific Americans as

one homogeneous population and have not examined inter-Asian group variations that may exist in substance use and abuse. Consequently, it is difficult to determine the extent to which these findings can be generalized to specific Asian Pacific populations. Recent surveys of students have shown that Asian Pacific Americans report the lowest use of cigarettes, alcohol, marijuana, and cocaine and other hard drugs when compared with other ethnic groups, particularly whites (Kandel, Single, & Kessler, 1976; Maddahian, Newcomb, & Bentler, 1985, 1986; McCarthy, Newcomb, Maddahian, & Skager, 1986; Newcomb, Maddahian, Skager, & Bentler, 1987).

Kandel et al. (1976) studied student drug use in New York and collected data in two waves, in autumn 1971 and spring 1972. The samples included 8,206 and 7,250 students, respectively, and identified African American, American Indian, Asian Pacific American, white, and Hispanic ethnic groups. Asian Pacifics ($n = 63$) reported the lowest levels of drug use for alcohol (liquor, beer, or wine), cigarettes, marijuana and hashish, barbiturates, cocaine, and heroin. In the case of hard liquor, 18% of the Asian Pacific adolescents reported having at least one drink in their lifetimes, compared with 74% of American Indians, 59% of African Americans, 50% of Hispanics, and 68% of whites. For the sample of Asian Pacific Americans, beer or wine (53%), cigarettes (39%), and hard liquor (18%) were the most frequently used substances.

Newcomb et al. (1987) surveyed middle school students in California and assessed substance abuse frequency, perceived harmfulness of marijuana, perceived parental attitudes toward drug use, and various emotional states. A number of risk dimensions, such as emotional distress, low educational aspirations, and poor psychological adjustment, were used to predict the likelihood of later substance abuse. In this study, the group designated *Asians* ($n = 77$) was found to have the lowest risk for future substance abuse.

Only a few studies have included sizable samples of Asian Pacific Americans. In New York, Welte and Barnes (1987) sampled 27,000 junior and senior high school students, of which 2% were Asian Pacifics. They found that the average use in one's lifetime of any nonalcohol drug for Asian Pacifics was comparable to that for whites and Hispanics, higher than that for African Americans and West Indians, and lower than that for American Indians. A substantial proportion of Asian Pacific students reported having used the following drugs: marijuana, 23%; over-the-counter drugs (including solvents, glue, air fresheners, and nonprescription cough medi-

cine), 31%; pills (barbiturates, amphetamines, and tranquilizers), 20%; and hard drugs (heroin, cocaine, and hallucinogens), 12% (Welte & Barnes, 1985). However, Asians had the lowest percentage of drinkers (Barnes & Welte, 1986). Only 45% of Asian Pacific students reported drinking at least once in the past year. This rate was considerably lower than the next-lowest group, the West Indians (61%). Asian Pacifics ranked among the lowest groups in terms of the proportion of heavy drinkers (i.e., those who drink once a week and consume five or more drinks per occasion). Asian Pacifics (6%) were comparable to Hispanics (8%), blacks (5%), and West Indians (4%), but lower than whites (16%) and American Indians (18%). However, the Asian Pacific heavy drinkers did consume more alcohol per day when they did drink (1.46 ounces per day compared with 0.76 ounces for whites). All of the heavy drinkers among Asian Pacifics were males, whereas the other ethnic groups had small proportions of females who were heavy drinkers. Overall, the rate of heavy drinking among males was 18%, compared with 8% for females. The proportions of heavy drinkers among females in these ethnic groups were as follows: white, 11%; American Indian, 9%; Hispanic, 4%; black, 2%; and West Indian, 2%.

Two studies were conducted in Los Angeles among seventh and eighth graders, and these also included sizable samples of Asian Americans. In one study Asian Pacific students ($n = 275$) reported low lifetime marijuana use (2.6%), but their lifetime cigarette use (11.7%) and alcohol use (10.5%) were quite comparable to or greater than levels found for other ethnic groups studied (Hansen, Johnson, Flay, Graham, & Sobel, 1988). For example, white cigarette use and alcohol use were 12.7% and 9.7%, respectively. However, Sasao (1987) reported on another study that found that Asian Pacifics ($n = 596$) had lower rates of lifetime drug use for cigarettes (10.6%), alcohol (13.9%), and marijuana (2.6%) when compared with blacks, Hispanics, or whites. For example, the white use rates for these drugs were 34.2%, 36.2%, and 10.6%, respectively. Although both of these studies had considerable numbers of Asian Pacifics within their samples, they did not differentiate between specific Asian Pacific ethnic groups. Similar patterns were found in a statewide biennial survey of drug and alcohol use among students in grades 7, 9, and 11 (Skager, Fisher, & Maddahian, 1986; Skager, Frith, & Maddahian, 1989). At all grade levels, Asian Pacific students had significantly lower rates of alcohol use than the other ethnic groups included within the study.

Other research has focused on college-age samples, and the data trends have been similar to those found for younger Asian students. Adlaf, Smart, and Tan (1989) studied the rates of drug use among eight ethnic student groups in Ontario, Canada. After controlling for certain demographic variables such as acculturation level, religion, age, provincial region, and gender, the Asian Pacific group, consisting of Chinese and Japanese respondents, reported the lowest levels of tobacco, alcohol, and cannabis use. The researchers' definition of *ethnicity* differed somewhat from that used in most other studies. Ethnic group identification was operationalized as the ethnicity of the participant's "ancestors on the male side on coming to this continent." Accordingly, participants of mixed parentage/ancestry were included in the various ethnic samples. Most studies have not included mixed-ethnic individuals.

Sue et al. (1979) examined the drinking patterns of Asian Pacific and Caucasian college students in Washington. Asian Pacific students reported lower rates of drinking, had more negative attitudes toward drinking, and used fewer cues in the regulation of their own drinking than did the Caucasian students. More Asian Pacific students (15%) than Caucasians (9%) reported abstinence or light drinking, but Caucasians were two times more likely to be heavy or very heavy drinkers than Asians (66% and 34%, respectively). These results suggest that cultural factors play an important role in consumption patterns. More acculturated Asian Pacific individuals (based on generation in the United States and ability to speak the ethnic language) reported higher levels of drinking. Asian Pacific students reported that they and their parents held more negative attitudes toward drinking than did their Caucasian counterparts. However, Asians held less negative attitudes than Caucasians toward the harmfulness of alcohol on the body. Akutsu, Sue, Zane, and Nakamura (1989) also found that Asian Pacific American students reported lower levels of alcohol consumption than Caucasian students. Self-reported physiological reactions to alcohol as well as drinking attitudes accounted more for ethnic differences in drinking than did general cultural values.

Klatsky, Siegelau, Landy, and Friedman (1983) studied interethnic differences in alcohol consumption of 59,766 individuals who participated in the multiphasic health examinations at Kaiser Permanente medical programs from 1978 through 1980. They found that Asian Pacific Americans, both men and women, reported significantly less drinking than individuals from other ethnic groups. Among

the Asian groups, the Japanese reported the most alcohol use and the Chinese reported the least drinking. Among Asian women, Filipino women reported the least alcohol use and Japanese women reported drinking more alcoholic beverages than those in other Asian subgroups. The lower drinking rates among the Asian Pacific Americans were partly attributable to the sizable proportion of abstainers among the foreign-born Asians (Chinese 38.8%, Japanese 29.4%, and Filipinos 12.6%). Klatsky, Friedman, Siegelau, and Gerard (1977) obtained information collected from a large ambulatory population using the Kaiser Permanente Medical Care Program in Oakland and San Francisco. They found that, when compared with whites and blacks, Asian Pacific males and females ($n = 4,319$) had the highest level of abstinence from alcohol.

The studies constituting small-area community samples suggest that Asian Pacific Americans from different geographic regions use and abuse substances less frequently than do non-Asian Pacific Americans. Such ethnic group comparisons are difficult to interpret because Asian Pacific sample sizes are usually small—with some exceptions, such as the studies by Klatsky and his colleagues. Small sample size becomes especially problematic because Asian Pacific samples are not homogeneous (i.e., sampled from only one specific Asian Pacific ethnic group). Consequently, it is unclear if these findings of lower comparative use are generalizable to any particular Asian Pacific American group. Based on the time periods and geographic regions of most of the aforementioned studies, it appears that the most frequently sampled groups may have been the most acculturated ones, primarily Japanese and Chinese Americans. The tendency for Asian Pacific Americans to have lower comparative alcohol and other drug use may apply only to these groups, but again, this tendency should be considered with caution in view of the lack of inter-Asian differentiation in the research.

More informative studies are those that have made some attempt to distinguish various Asian Pacific American groups. No national survey of alcohol or drug use has been conducted for these different populations. Research focused on specific Asian Pacific ethnic groups has tended to sample West Coast populations, primarily from Hawaii and California. McLaughlin et al. (1987) examined inter-Asian Pacific differences in substance use as part of a statewide alcohol, drug, and mental health survey in Hawaii that sampled 2,503 households. Using in-person interviews, the researchers assessed lifetime prevalence of alcohol and other drug use among Chinese Americans

(3.7%), Japanese Americans (21.6%), Filipino Americans (11.4%), Native Hawaiians (18.9%), and white Americans (28.5%). Caucasians reported higher lifetime prevalence than most Asian Pacific groups for most drugs, including alcohol, cocaine, heroin, amphetamines, tranquilizers, barbiturates, and major analgesics (e.g., morphine). However, drug use among Asian and Pacific Islander Americans was not uniform across groups. Hawaiians tended to have higher lifetime prevalence than the other Asian Pacific groups for alcohol, cocaine, amphetamines, and marijuana. Also, their alcohol lifetime prevalence was comparable to the Caucasian rate. Compared with the other Asian Pacific groups, Japanese and Chinese had a higher prevalence of tranquilizer use. The results underscore the importance of examining inter-Asian Pacific differences in substance use, but it is unclear if the differences observed can be generalized to Asian communities outside of Hawaii. Hawaiian Asian Pacific groups may be quite different from their mainland counterparts in terms of their nonminority status, acculturation, English-language proficiency, community cohesiveness, social-political identification, and so on (Kitano & Daniels, 1988; Sue & Morishima, 1982).

As part of a statewide Asian drug service needs assessment in California, a bilingual community telephone survey was conducted in order to assess the prevalence of perceived levels of alcohol and other drug use (Sasao, 1991). The sample included 409 Chinese, 416 Japanese, 399 Korean, 149 Filipino, 322 Vietnamese, and 78 Chinese-Vietnamese community residents from both Southern and Northern California. The Japanese group had the highest percentage of individuals who reported lifetime use of cigarettes and tobacco products (45.4%), followed by Filipinos (38.0%), Vietnamese (36.3%), Koreans (36.1%), Chinese (24.9%), and Chinese-Vietnamese (24.4%). Compared with the national statistics reported in the 1988 National Household Survey on Drug Abuse (National Institute on Drug Abuse, 1990), the lifetime use of cigarettes appears to be lower for Asian Pacific Americans than for the general population (approximately 80%). With respect to the proportion of respondents who had 10 or more alcoholic drinks in their lifetime, the Japanese had the highest level of lifetime use (68.8%), followed by Koreans (48.6%), Chinese (41.8%), Vietnamese (43.2%), Filipinos (39.3%), and Chinese-Vietnamese (38.5%). These rates were lower than the national prevalence (85%). Of those who reported drinking alcohol in the past month, the Chinese, Japanese, Korean, and Filipino groups tended to drink less than both the Vietnamese and Chinese-

Vietnamese. Most Asian Pacific drinking appeared to be socially based, as a large majority of drinkers in each Asian Pacific group (Chinese, 85%; Japanese, 92%; Koreans, 77%; Filipinos, 90%; Vietnamese, 86%; Chinese-Vietnamese, 81%) reported that they tended to drink on social occasions.

Using purposive random sampling from a local Japanese phone directory, Sasao (1989) conducted a bilingual telephone survey ($n = 127$) of a predominantly Japanese community in Southern California to assess the perception of substance abuse as a community problem and the lifetime and 30-day prevalence of cigarette, alcohol, and marijuana use. Substance abuse was perceived as a significant social and health issue in this community. Results indicated that lifetime alcohol use (73%) and cigarette use (55%) of both U.S.-born and Japanese-born respondents are slightly lower than that found for the general U.S. population. Telephone surveys have been criticized for sampling biases owing to low respondent participation, reliability and validity problems, and anonymity and confidentiality issues. However, in this study the interview completion rate was high (82%). In addition, there were important differences found between U.S.-born and foreign-born Japanese. The latter had a higher rate of refusing to participate and exhibited less knowledge and social concerns about substance abuse. Many of the foreign-born respondents were spouses of Japanese businessmen, who tended to have lived in the United States for only a few years. The two subgroups also defined *substance abuse* differently. Specifically, Japanese-born respondents tended to use this term for hard drugs such as marijuana, LSD, and heroin and did not include alcohol use and cigarette use as potential substance abuse problems. However, U.S.-born Japanese defined substance abuse as involving the use of both alcohol and cigarettes. These differences underscore the heterogeneity related to acculturation and other variables that often exists within one particular Asian Pacific American group.

Studies by Kitano and his colleagues have focused on the alcohol drinking patterns among several Asian Pacific populations (Chi, Lubben, & Kitano, 1988, 1989; Kitano & Chi, 1985; Kitano, Lubben, & Chi, 1988; Lubben, Chi, & Kitano, 1989). Using Los Angeles phone directories, these researchers selected surnames of Chinese, Japanese, and Korean respondents in proportion to the Los Angeles population of each group. Snowball sampling was used to obtain Filipino respondents. In the final sample there were 298 Chinese,

295 Japanese, 280 Korean, and 230 Filipino Americans. The demographic characteristics of the participants indicated that most of them were married men who ranged in age from 30 to 60 years. The majority were foreign-born, with the exception of the Japanese. The investigators found that the alcohol drinking practices of young Asian Pacific males were comparable to national norms (Cahalan & Cisin, 1976), and they question the myth of Asian Pacific Americans as nondrinkers. Also, it appears that certain Asian Pacific groups have high proportions of heavy drinkers. The Japanese group studied had the highest percentage of individuals who were heavy drinkers (25.4%), followed by the Filipinos (19.6%), the Koreans (14.6%), and the Chinese (10.4%). Analyses of attitude items converged with Sue et al.'s (1979) findings, in which more permissive attitudes associated with greater acculturation were related to heavier alcohol consumption. These findings suggest that, at least in the case of alcohol consumption, Asian Pacific American substance use has been underestimated (see D. Sue, 1987).

In spite of some evidence of heavy drinking in these samples, very little problem behavior was reported. There were a number of instances of respondents' being arrested for drinking, but otherwise there was little to implicate alcohol drinking in problems such as job loss, personal impairment, and drastic changes in lifestyles. Much of the drinking tended to occur with friends and on special occasions. There appeared to be social controls on drinking behavior. Kitano and his colleagues attribute the diversity and variability in alcohol drinking practices among Asian Pacific American groups to cultural patterns brought with them from their countries of origin. In a related finding, Maddahian et al. (1985) found that Asians were the largest group that tried *only* alcohol and no other substances. The Kitano et al. study was one of the first large-sample surveys conducted to determine the alcohol drinking practices of different Asian Pacific American groups. However, the telephone survey methodology may have excluded certain individuals in the population who may be at highest risk for alcohol problems. For example, single, recent-immigrant males living alone or in crowded communal arrangements with no private phones may not have been sampled adequately.

In another large epidemiological survey ($n = 2,418$) conducted in Hawaii, Wilson, McClearn, and Johnson (1978) examined the prevalence of alcohol use among four different ethnic groups: Chinese, Japanese, whites, and Asian-whites (mixed parentage with one

white and one Asian parent). There were more than 600 respondents in each group, with the exception of Asian-whites (443 respondents). The effects of certain sociodemographic variables (e.g., social class, gender) were controlled for in the design of this study. Asian Pacific subgroups were found to be more likely than whites to be abstainers (Chinese, 18%; Japanese, 17%; Asian-whites, 7%; whites, 4%). Whites had the highest consumption of alcohol and flushed less than either the Chinese or Japanese, whereas the two Asian Pacific groups were similar to each other in their patterns of drinking and flushing. Individuals of mixed Asian-white ancestry had mean alcohol consumption levels that were comparable to those of the white group. However, Asian-whites resembled Asian Pacifics more than whites in their tendency to flush. This set of findings is interesting because some researchers have noted that the tendency for Asian Pacifics to flush reflects an alcohol-related physiological sensitivity. They hypothesize that this ethnic difference in physiological response accounts for the tendency for Asian Pacific individuals to have lower drinking rates than whites (Agarwal, Eckey, Harada, & Goedde, 1984; Ewing, Rouse, & Aderhold, 1979; Goodwin, 1979). However, after reviewing the research on ethnicity-based physiological determinants of drinking, both Chan (1986) and Johnson and Nagoshi (1990) conclude that the physiological model cannot adequately account for much of the ethnic variation in drinking rates. Moreover, Wilson et al. (1978) indicate that whereas Asian-whites more closely resemble Asians in their physiological sensitivity to alcohol, their drinking patterns are more similar to those of whites. It appears that cultural variables (in this case, marital assimilation) may have a more significant influence on the extent of alcohol use than physiological factors. Using almost the same ethnic classifications, Johnson et al. (1987) found similar results in another sample from Hawaii.

In a binational study of alcohol consumption patterns, an extensive epidemiological survey was conducted using Japanese in Japan, Japanese Americans in Hawaii, and Japanese and Caucasians in Santa Clara County, California (National Institute on Alcohol Abuse and Alcoholism & National Institute on Alcoholism in Japan, 1991). The samples from Japan were selected by stratified random sampling from four areas in Japan and included 1,224 individuals (579 males, 646 females). The 514 Japanese Americans interviewed in Hawaii (271 males, 243 females) were drawn using a randomly generated telephone list. The Japanese Americans in Santa Clara

the ethnic groups in this cross-national study were major determinants of alcohol consumption.

The Asian Pacific population is diverse, and certain Asian Pacific American groups are considered at high risk for developing health and/or mental health problems. For example, many Southeast Asian refugees have experienced extensive trauma as a result of their forced evacuation from their home countries, prolonged stays in refugee camps, and hazardous migration to the United States (Beiser, Turner, & Ganesan, 1989; Charron & Ness, 1983; Cohon, 1981). Unfortunately, not many studies have been conducted on these high-risk groups. In one of the few studies undertaken, Yee and Thu (1987) examined the prevalence and nature of substance use problems among Southeast Asians in Texas. They sampled 840 adult refugees, mainly Vietnamese (90%), and employed household interviews to elicit information on individual drug use and mental health status. A majority of the sample (52%) reported occasional problems involving alcohol and/or tobacco use. It appears that drugs were used by those in this sample for coping purposes. Close to half of the respondents reported that they used alcohol and/or smoked to cope with stressful situations or with personal problems resulting from stress.

A community survey of San Diego Job Corps members found that Indochinese youth had the lowest level of drinking (use in the past six months), compared with whites, blacks, and Hispanics (Morgan, Wingard, & Felice, 1984). Two thirds (66%) of Indochinese males and 43% of Indochinese females drank, compared with an average of 87% for males and 88% for females for the other groups. Indochinese youth began drinking later than other groups. The average initiation age was 18 for both Indochinese males and females, compared with 11 years for Caucasian males and 14 years for Caucasian females. The Indochinese who did drink had very low levels of other drug use. None had used cocaine, and only 3% used marijuana, whereas 53% of the whites who drank had used marijuana and 7% had used cocaine.

In contrast to most of the previous studies, Wong (1985) found relatively high rates of substance use among Chinese youth in a community associated with high-risk indicators, San Francisco's Chinatown. Using a chain referral method to sample 123 Chinese youths who ranged in age from 13 to 19, Wong estimated that the prevalence of substance abuse among these youth was higher than that found among other non-Asian youth in the previous study conducted in San Francisco with the same methodology. The lifetime

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County were selected based on Japanese surnames found in the Santa Clara County telephone directory. The study used a revised World Health Organization survey questionnaire to assess alcohol drinking and relevant predictors or correlates of drinking (e.g., frequency, reasons for drinking, alcohol-related problems). The proportions of current drinkers (those who drank alcohol within the past year) in all of the study sites were somewhat high when compared with rates for the adult population of the United States as a whole. Japanese men (91%) had the highest percentage of current drinkers, followed by Caucasian men (85%), Japanese American men in Santa Clara (84%), and Japanese American men in Hawaii (80%).

In general, women drank less and their pattern of ethnic variation differed from that found for men. Caucasian women had the highest proportion of current drinkers (81%), followed by Japanese women in Santa Clara (75%), Japanese women in Hawaii (68%), and Japanese women (61%). With regard to frequency of drinking alcoholic beverages, the data show that patterns of alcohol use vary across the different locations. A large proportion of Japanese men in Japan (62%) reported drinking at least three times a week; only 7% of this group said they drank less than once a month. Almost half of Caucasian male drinkers (44%) reported drinking three or more times a week, whereas 13% indicated that they drank less often than once a month. These figures indicate that the alcohol drinking patterns of Caucasian men in Santa Clara County are very similar to the national rates (National Institute on Drug Abuse, 1990). However, the data reveal that Japanese Americans use alcohol less frequently. Less than one third of the male Hawaii (32%) and Santa Clara County (29%) Japanese samples 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 women. Caucasian women in Santa Clara (32%) had the highest proportion of individuals drinking three or more times a week. These women drank more than either Japan Japanese or Japanese Americans, and their consumption was higher than that of Caucasian women in the U.S. national sample (21%). Japanese women in Japan had the next-highest proportion of frequent drinkers (21%), and Japanese American women had the lowest proportion of frequent drinkers in either of the Japanese American groups (9% for both Hawaii and Santa Clara County). Also, Parrish et al. (1990) found that drinking norms of

use of cigarettes, marijuana, cocaine, and Valium by the Chinese sample was similar to that reported by the non-Asian Pacific samples (i.e., whites, blacks, Hispanics). The proportions who indicated they had ever used various drugs were as follows: beer, 77%; cigarettes, 75%; marijuana, 59%; wine, 54%; hard liquor, 49%; quaaludes, 42%; cocaine, 40%; hashish, 22%; Valium, 16%; and LSD, 15%. Limited use was reported for amphetamines (5%), amyl nitrate (2%), opium (2%), PCP (1%), and glue (1%). Males and females had roughly comparable levels of use for most drugs, but females more often reported use of Valium, codeine, and quaaludes. No one reported use of heroin. The Chinese sample tended to use quaaludes more frequently than did the other groups. By comparison with previous community surveys of drug use among other ethnic groups in San Francisco, quaalude use was twice as high among Chinese American youth as among white and Latino youth and five times greater than among black youth. On the other hand, Chinese Americans had lower use of heroin, PCP, amphetamines, and Valium than other groups. The nonrandom sampling method used in this study raises serious questions about the representativeness of the sample obtained and how comparable this study is to previous surveys that have employed more systematic sampling strategies.

In one of the few studies on actual alcohol abuse, Yamamoto, Lee, Lin, and Cho (1987) used DSM-III diagnostic criteria to examine alcohol abuse among elderly Asian Pacific Americans (age 65 and older) in Los Angeles. This research is one of the few studies conducted on elderly Asian American substance use problems. Filipino males were found to have the highest rate of alcohol abuse/dependence (10.5%). Rates for Chinese and Japanese men were considerably lower, 4.3% and 5.7%, respectively. In accord with previous research, males in each of the ethnic groups had much higher prevalence rates of alcohol abuse/dependence than did females. The sample sizes were small (48 Chinese, 129 Japanese, and 65 Filipino), and the sample may not have been representative of the elderly Asian population in Los Angeles because convenience sampling was used, in which the Asian respondents were drawn from lunch programs, retirement homes, and community parks.

The various studies that have been reviewed here suggest that, in general, Asian Pacific Americans have higher rates of abstinence and lower rates of heavy alcohol and/or drug use than do individuals from other racial/ethnic groups. However, important variations occur among the specific ethnic groups of Asian Pacific Americans.

Estimates From Treated Cases

The use of treated cases, or utilization data, to estimate prevalence can be problematic, considering the host of socioeconomic, administrative, and other nosocomial factors that may influence utilization patterns (Kramer & Zane, 1984). Nevertheless, this method provides an alternative source for investigating Asian Pacific substance use and abuse. For the past few years in both San Francisco and Los Angeles, Asian Pacific Americans have consistently underutilized drug abuse treatment services compared with their respective proportions in the local populations. Low rates of alcohol-related hospital admissions for these populations have been reported. It has been noted that low utilization rates may reflect the tendency of Asian Pacific individuals not to seek services for help rather than a lower need of such services (e.g., Murase, 1977). Asian Pacific individuals with problems such as substance abuse or mental illness may not seek formal treatment because of the shame and stigma associated with these problems, lack of knowledge about available help, and shortages of bilingual, bicultural staff to provide appropriate care (Sue & Morishima, 1982). Indeed, in the case of mental health services, when such services are provided by bilingual, bicultural personnel, utilization rates for Asian Pacific Americans have been shown to increase dramatically (True, 1975; Wong, 1977; Zane, 1989).

Using a key informant approach, Asian, Inc. (1978) estimated that the substance use of Chinese and Filipino Americans is lower than that of the general population, whereas the level of use for Japanese Americans is similar to that found in the general San Francisco population. Phin and Phillips (1978) conducted a national study of drug abuse programs and found that Asian Pacific Americans (55%) and whites (63% to 67%) were admitted primarily for heroin abuse. Asian Pacific clients reported higher levels of barbiturate use than did whites (45% and 11%, respectively). Namkung (1976) found that in the California prison population, 95% of the Asian Pacific inmates incarcerated were there for drug-related crimes. The utilization research has suffered from limitations similar to those found in the untreated cases studied. The research has not distinguished among different Asian Pacific groups in the context of relatively small samples, has failed to identify and/or control for important demographic variables (e.g., socioeconomic status, living arrangement, family size) that may be confounded with ethnicity, and has

relied predominantly on self-report instruments. The self-report measures have often been used without adequate testing for conceptual equivalence among items, regional dialect differences in language translations, and literacy levels of respondents in both Asian and Pacific Islander countries of origin languages and English.

In summary, on the basis of research on either untreated or treated cases it is difficult to obtain good estimates of the level of substance use and abuse for various Asian Pacific American populations. Zane and Sasao (1992) recently identified a number of trends in the research, and these appear to remain unchanged, even with the inclusion of more recent studies. First, use of various drugs, including alcohol, nicotine, cocaine, and marijuana, appears to be lower for many Asian Pacific groups when compared with rates for whites and other ethnic minority groups. However, it may be more important to note the considerable variation in substance use among the different Asian Pacific populations. For example, Hawaiians tend to use alcohol and other drugs more frequently than do other Asian Pacific groups, and their alcohol use is comparable to that of whites. Second, although the general drinking rates of Asian Pacific Americans are lower than national norms, it appears that alcohol use has been underestimated, particularly for certain groups, such as Japanese American males and Filipino American males. Third, some evidence suggests that for Chinese and Japanese Americans barbiturate and tranquilizer use may be an increasing problem. Fourth, cultural factors appear to play an important role in limiting and, at other times, enhancing substance use among certain Asian Pacific groups.

Treatment of Substance Abuse

To date, few studies have directly examined the outcomes (in terms of decreased drug use) of Asian Pacific American clients in substance abuse treatment. Phin and Phillips (1978) compared the treatment of outcomes of Asian Pacific and white Americans using retention in treatment, drug use patterns, change in employment, and legal status as indices of treatment outcome. Asian Pacific clients reported that treatment had positive effects on living conditions and/or health and led to decreased drug use. Compared with whites, Asian Pacific clients stayed in therapy longer but had higher rates of continuing drug abuse. These outcome data are difficult to

interpret because the Asian Pacific and white samples were not comparable in age or drug abuse patterns at admission to treatment.

Culturally Responsive Services and Programs

Given that Asian Pacific Americans tend to underutilize substance abuse treatment programs, it is not surprising that emphasis has been placed on developing programs that are responsive to the specific needs of these communities and their youth. Various strategies and solutions have been proposed to develop effective services for Asian Pacific Americans. Murase (1977) has identified certain features that may enhance cultural responsiveness of services to these communities. These include delivering services from community-based sites, incorporating community input into service delivery decisions, using bilingual and bicultural staff, linking with indigenous formal and informal community care/support systems, and developing intervention methods that address culturally salient aspects of Asian Pacific American functioning (e.g., value of family, face concerns, survival-related issues, flexibility in the use of time).

In terms of program development, a number of parallel services in substance abuse prevention and treatment have developed in areas highly impacted by Asian Pacific populations. Parallel services are programs that focus on providing services to particular ethnic groups; they operate independent of the mainstream services used by the general public (S. Sue, 1977). They are parallel to mainstream services in that they are similar in function and organizational structure to those services, but they are separate in operation and usually in location.

A number of parallel programs in substance abuse prevention or treatment have been developed. For example, in San Francisco, the Asian Youth Substance Abuse Project (AYSAP) involves a coordinated effort among several Asian Pacific communities to implement a community-based intervention for the prevention of alcohol and drug abuse among high-risk youth (Asian Youth Substance Abuse Project, 1991). Operating from a consortium of seven community-based agencies, AYSAP has designed a set of coordinated program activities that draw from a number of empirically validated prevention approaches, including social competence, empowerment, parenting skills, and community resource development. The great variation among the specific prevention approaches used in each community agency clearly reflects the diversity that exists among Asian Pacific populations.

larly effective in improving various aspects of interpersonal functioning for these youth. Filipino family members participating in a counseling program reported significant increases in psychosocial functioning and significant decreases in social acculturation (e.g., having more contact with Asian friends) and hierarchical role relationships with children. A major objective of the Filipino family counseling program was to encourage parents to adopt a less restrictive approach to child rearing and child management. The self-reported decrease in hierarchical role relationships with children suggests that the parents developed less restrictive attitudes.

A community education program directed toward Vietnamese and other Southeast Asians in a high-risk community involved an aggressive door-to-door education campaign with an extensive bilingual mass-media campaign. Independent community surveys conducted prior to and after the program found significant increases in community perception of drug use and drug problems of both youth and adults. Also, a significant increase was found in knowledge about the effects of different drugs. There was no reported increase in drug use with respect to alcohol drinking, smoking, and marijuana or cocaine use. Thus the increase in the perception of more drug problems and drug use in the community appears to reflect an increase in awareness as opposed to actual changes in use. The effects attributed to this program were particularly marked considering that changes were detected with independent community surveys.

AYSAP appears to have succeeded in developing a number of culturally responsive prevention strategies. First, it was critically important to link peer- and family-oriented prevention approaches into the natural support systems of particular Asian Pacific communities and to structure prevention interventions so that they complemented this support system. For example, the Filipino community program provided substance abuse education and family empowerment interventions within a religious context. This program used the church as the major community medium or forum for prevention work. For many Filipinos the church is the most natural place to discuss personal problems. Self-disclosure in this spiritual setting often counters the shame and stigma associated with revealing family problems and substance abuse. The value of fatalism is dominant in Filipino culture, but spiritual practices are seen as a culturally appropriate way of changing one's behavior. This prevention program capitalized on these beliefs to introduce

The results of a program evaluation of AYSAP suggest that certain types of prevention programs are effective in different Asian Pacific communities (Asian Youth Substance Abuse Project, 1993). A significant increase in knowledge about the effects of drugs and a significant decrease in engagement in high-risk behaviors (e.g., truancy, cheating on exams) were reported by Japanese youth who participated in a year-long, after-school drug-free alternatives program focused on providing recreational and youth group support activities. A life skills program focused on leadership development for Vietnamese youth from a high-risk community (i.e., economically depressed, large number of latchkey children, high crime rate) appears to have significantly increased social skills, assertiveness, and goal-directed behaviors. Process evaluation findings suggest that this success is largely attributable to the high dosage and structure of the program. Youth participated in the program for 4 hours each weekday for more than 2 months. Detailed curricula were applied in which structured exercises (e.g., frequent role-playing) were used to develop skills. It appears that the program served a primary prevention function in that most of the youth participating tended to be the "clean" members of families in which one parent and/or sibling were using substances.

Similarly, a life skills summer program for Japanese youth used peer role models and support groups to develop social skills and discourage engagement in high-risk behaviors. Significant decreases in drug use and risk behaviors were reported by youth participants. There were also significant increases in social skills, drug knowledge, and perceived environmental risk (e.g., people offering drugs, asking youth to help cheat on tests). Paradoxically, a significant decrease in self-esteem was found. This program relied heavily on prevention staff to serve as youth mentors in the support groups. Often staff acted as sounding boards for youth who were coping with interpersonal problems and drug issues. In the support groups, the actions of positive role models among the peers were recognized and peer pressure was applied to reinforce members for not engaging in risk behaviors.

Filipino youth participating in a brief counseling program reported significant improvements in psychosocial functioning, self-esteem, and family support. Increases in interpersonal adjustment also approached significance. Staff rated youth participants as significantly improved with respect to psychological adjustment. A program targeted for Filipino youth appears to have been particu-

alternative ways of dealing with family problems that often place youth at risk for abusing drugs. Previous prevention programs were often minimally successful because they failed to recognize the prominent role that spiritualism plays in the Filipino community.

Second, the key to empowering many Asian families involved providing Asian immigrant parents with the skills and mastery experiences they needed to help their children adjust to American cultural norms and expectations. For example, the prevention program for the Vietnamese community implemented an empowerment strategy for Vietnamese parents. The prevention approach assumed that Vietnamese parents often felt ineffective because they could not help their children with schoolwork or school-related problems. The great emphasis placed on education in Asian families tended to exacerbate these feelings of powerlessness. Many parents were also very determined to improve the family economically, but in this process they lost focus on their relationships with their children and with each other. All these factors combined to disempower parents. The prevention approach attempted to reverse this maladaptive trend by teaching parents their role in the American educational system and by validating parental roles. In role validation, parents were encouraged to see themselves as cultural experts who can only enrich their children's bicultural heritage and functioning. Mass-media campaigns reinforced anti-drug use messages and challenged the belief that refugees and immigrants are better off when they become totally acculturated.

Third, an important issue that often complicates prevention efforts in Asian Pacific communities is extreme shame over substance abuse as well as over problems that place youth at risk (e.g., intergenerational conflict, mental health problems). A number of prevention programs have developed innovative strategies to minimize shame and loss of face in Asian Pacific families. For example, a program focused on the Japanese American community adopted a graduated approach to handle intergenerational conflicts in Japanese and other Asian Pacific families. In many Asian Pacific communities intermediaries are often used to manage interpersonal conflicts. Intermediaries present or advocate for a person's position without personalizing the issue with the other party. In this way, loss of face is minimized and opposing views are presented so as not to violate the hierarchical relationships in a family. In this prevention effort, workers often served as intermediaries to help maintain communi-

cation among family members. Essentially, the program presented the youth view to parents and the parental view to youth in a number of workshops and community forums. In this program a culturally syncretic problem-solving approach was utilized to support Japanese American families at risk.

Finally, community education programs that involved more personalized contacts rather than primarily relying on mass-media mechanisms appeared to be more effective with certain Asian Pacific communities. For example, the Vietnamese prevention program conducted a door-to-door education campaign in a high-risk community. A personalized approach was considered more effective and efficient because Vietnamese and other Asian Pacifics tend to minimize or deny that substance abuse and other related problems exist in their communities. This program combined the personalized education approach with mass-media anti-drug use messages and community events centered on disseminating information on the effects of drugs and on the treatment and support services available to the community.

The successful development of substance abuse programs by parallel service agencies implies that drug abuse treatment may require modification in some way to make it effective and culturally responsive to the needs of Asian Pacific clients. Evaluations of other parallel programs like AYSAP are needed to determine if similar culturally responsive features result in effective prevention programs for other Asian Pacific American youth.

Methodological Limitations of Past Research

Past research has not been very informative because it has often been unclear which Asian Pacific groups have been studied. This is a serious methodological shortcoming, because Asian and Pacific Islander groups that appear at highest risk for developing substance abuse problems have seldom been studied or have not been identified separately in previous research. There have been dramatic changes in the Asian Pacific American population. Whereas the Japanese and Chinese constituted the largest groups in 1970, it is estimated that by the year 2000 Filipinos will be the largest group, followed by Chinese, Vietnamese, Koreans, and Japanese. Moreover, many of the fastest-growing groups (i.e., Southeast Asian refugees, Koreans, and Filipinos) are also the ones with the highest

risk factors for drug use and abuse. Given these substantial changes in population and sociodemographics, it is likely that the estimates provided by past and current data will soon be gross underestimates of substance use and abuse among Asian Pacific Americans.

In general, the lack of empirical information seriously limits our understanding of Asian Pacific Americans and their particular patterns of substance abuse (Austin, Prendergast, & Lee, 1989; Johnson & Nishi, 1976; Trimble, Padilla, & Bell, 1987). The data that are available on Asian Pacific use patterns also has major limitations. As noted earlier, most of the research has sampled the relatively more acculturated Asian Pacific groups, such as Chinese and Japanese, who tend to be at lower risk for use and abuse. The research also has used primarily student samples, which tend to be at lower risk than older populations. The groups who may be at greatest risk for substance abuse problems (e.g., refugees, recent immigrants, adolescents) have been inadequately sampled, which prevents any meaningful disaggregated analyses. Further, studies have seldom controlled for socioeconomic and other demographic differences that may be confounded with ethnic or cultural variation.

Finally, the reliance on self-report measures for assessing substance use may be questionable. Researchers have noted how cultural differences may influence assessment procedures, particularly those involving self-reports (e.g., Sue & Sue, 1987). A number of cultural differences between Asian Pacific and white Americans may affect self-report responses. First, symptom tolerance—how much impact a symptom or problem has on an individual's life—is a phenomenon that has not received much attention. Studies have shown that cross-cultural differences exist in how much physical pain or distress can be tolerated. For example, in the case of Japanese Americans, Kitano (1976) has noted the importance of the cultural attitude of *ski-ka-ta-ga-nai*, which refers to a fatalistic feeling that things are the way they are. If this is the case, there may be cultural differences in the ways substance use or abuse problems are perceived and, consequently, reported. Second, shame and stigma are often associated with substance abuse problems, and these factors may inhibit self-reporting of such problems. Shame is a salient interpersonal dynamic for most Asian Pacific cultures. Kim (1978) notes that *huiji* for Japanese, *hiya* for Filipinos, *mentz* for Chinese, and *chaemyun* for Koreans are the terms used to convey the concept of shame. This concept has been used to explain the underutilization of mental health services, and the underreporting of mental health problems, as well

as the reluctance to self-disclose among Asian Pacific Americans (Sue & Morishima, 1982). Third, cultures differ in their tolerance for the public display of excessive behaviors, including those associated with intoxication. In most Asian cultures behavioral signs of drug intoxication are considered socially inappropriate and are greatly discouraged. Given this context of intense social disapproval of excessive behaviors, signs of intoxication may be more suppressed or hidden by Asian Pacific users. As a result, there may be social norms for the underreporting of substance use and/or abuse.

A Model for Examining Cultural Differences in Substance Abuse Research

A research model developed by Zane and Sue (1986) can be used to facilitate research in Asian Pacific communities. Through point research, one can investigate if Asian Pacific Islanders and white Americans differ on a particular measure of substance use or risk for substance use and abuse. By using linear research, we can determine if the differences are consistent across different measures. Finally, the parallel research strategy allows us to test explanations for any observed ethnic or cultural differences on the measures.

Point research is the most frequently used approach and involves the employment of an instrument derived in one culture with members of another culture. In many cases the scores on the instruments are compared between the different cultures and interpreted from the norms developed from one culture. The problem in point research is that the cross-cultural validity of instruments is often unknown and application of the norms from one group to another may be inappropriate.

Linear research was developed because of the problems associated with point research. It involves the use of a series of studies that systematically test hypotheses generated by the construct of interest. As with point research, the assessment instruments are developed in one cultural group and used on another. However, instead of depending on one study, the researcher performs two or more studies to gain more points of reference on which to compare the cultural groups. If the hypotheses are supported by the separate studies, the construct may be considered to be cross-culturally valid and can be used meaningfully for cultural comparisons.

Parallel research is a strategy that develops means of conceptualizing the behavioral phenomena from both cultures in question. A parallel design is essentially two linear approaches, each based on its own cultural viewpoint. The advantage of this design is that the framework or perspective of one cultural group is not imposed on another. In this way, similarities and differences of the construct or concept under investigation can be determined. For example, applied to substance abuse research, the parallel strategy has the advantage of directly examining specific cultural factors that would, for example, affect self-reporting of substance use. If the results of the two parallel approaches converge, the researcher can be relatively confident that the prevalence rates found reflect good estimates of rates in that particular ethnic community.

Conclusions

In this review we have noted that the majority of studies have found that certain Asian Pacific groups, particularly Chinese and Japanese, may use and abuse substances less frequently than American whites and other ethnic minority groups. However, there has been little research to determine if all Asian Pacific groups have similar use patterns. Moreover, few studies have been conducted on groups that may be expected to show higher use rates, namely, those at greater risk for health and mental health (e.g., Southeast Asian refugees). There clearly is a need for more research on the recent immigrant and refugee groups, because, in addition to their high-risk status, many of these groups are also the fastest-growing populations among Asian Pacific Americans.

Despite the methodological difficulties described earlier and the limited scope of past research (in terms of the various Asian Pacific groups sampled), there has been a tendency to focus on the lower drinking rates of certain Asian Pacific groups as evidence of lower need for substance abuse services. This interpretation appears to be unwarranted. Relative need depends on two variables: prevalence and the availability of appropriate services. Even when prevalence is relatively low, relative need may be high if appropriate care is not made available to individuals in need of service. It is highly possible that the relative need for substance abuse services is similar to that for other ethnic groups, including whites, when one considers the other major empirical trend in Asian Pacific substance abuse. Many

studies have documented that Asian Pacific Americans tend to underutilize substance abuse and mental health services; this underutilization reflects problems in service delivery rather than a low need for such services. The lack of appropriate culturally responsive services may create a situation in which many individuals who need services are not receiving them. Under these conditions, the relative need of Asian Pacific Americans for substance abuse services remains high. There appears to be a critical shortage of culturally responsive substance abuse treatment and prevention programs for these groups. More programs such as the Asian Youth Substance Abuse Project are clearly needed to respond to the substance abuse issues that have developed in many Asian Pacific communities.

On the other hand, the relatively low rates of alcohol and other drug use found among certain Asian Pacific groups should be more closely examined for their possible important implications for the prevention of substance abuse problems. There has been no systematic program of research to (a) determine if the lower rates of drinking and other drug use are reliable trends for certain Asian Pacific groups and, if this is the case, (b) investigate the cultural, community, and other social factors that account for these tendencies. The examination of sociocultural factors that influence drinking and other drug use in Asian Pacific communities that have relatively low rates of use may provide some keys for making substance abuse prevention programs more effective. Intergroup comparisons within Asian Pacific American communities on community norms, cultural values, attitudes toward drinking and drunkenness, and culture-based self-regulatory practices (e.g., how family members monitor drinking of each other) may identify specific sociocultural variables that could be manipulated or affected by these programs to discourage and control substance use. In this manner, substance abuse research on Asian Pacific populations can guide the systematic development of culturally responsive prevention approaches as well as provide guidelines for better community-based prevention strategies in general.

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