Alcohol Use in Hawaii

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Abstract

This article provides a review of the existing literature on alcohol use in Hawaii (i.e., epidemiology, reasons for use, associated problems, and intervention) and offers clinical implications of the findings and suggestions for further areas of research. In general, Caucasians, Hawaiians, younger Filipinos, males, adolescents, young adults, and those with lower educational attainment were found to be at higher risk. Overall, Hawaii's rates were either comparable or lower than those for the entire United States. Factors associated with different rates of alcohol use included accessibility, ability to resist offers, parent use and sanctions, peer influence and use, attitudes and beliefs (e.g., perceived normal drinking, dangerousness), religious affiliation, social occasions, and school intervention. Variable rates and trends in help-seeking behaviors, treatment admissions, and treatment utilization reflected the socio-cultural diversity in Hawaii. Perceived effectiveness of different treatments were generally consistent across ethnic groups, but did not necessarily represent actual efficacy. There is a clear need for additional prevention, screening, and intervention programs in Hawaii, including socio-culturally appropriate ones, as well as a need for further research.

Introduction

There have been three previous reviews of alcohol use in Hawaii: Voss in 1961,[1] the Hawaii Alcoholism Research and Evaluation (HARE) Team in 1974-75,[2-4] and Ahern in 1985.[5] A common theme for these reviews was the need for additional research on epidemiology and intervention outcomes. Since these reviews were published, a considerable amount of research has been conducted. The purposes of this article are to provide a review of the existing literature on alcohol use in Hawaii (i.e., epidemiology, reasons for use, associated problems, and intervention), to offer clinical implications of the findings, and to suggest further areas of research. Emphasis will be placed on cross-cultural comparisons because of the need for such research in general,[6] the under-researched ethnically diverse groups in Hawaii,[7] and the accelerated growth of Asian/Pacific Islanders in comparison to other major ethnic groups in the United States (based on 1980 and 1990 census data).[8]

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Method

Procedure

A research literature review primarily focusing on the psychosocial aspects of alcohol use in Hawaii was conducted based on *Medline* (national medical database), *PsychLit* (national database by the American Psychological Association), the resources at Hamilton Library at the University of Hawaii at Manoa (including the Hawaiian and Government Sections), and other independent sources (e.g., local and national epidemiologic studies published as reports, Hawaii State Department of Health reports).

Measures

Several measures of alcohol use were examined (e.g., lifetime use, drink in the past 30 days, daily drinking, age when first drink consumed). Acute or "binge" drinking is defined as having five or more alcoholic beverages on at least one occasion in the past 30 days. Chronic drinking is indicated by 60 or more alcoholic beverages in the past 30 days (or an average of 2 or more drinks per day for the past 30 days). Alcohol disorders (i.e., abuse and dependence) include a component of functional impairment. Much of the findings reported herein on alcohol disorders were based on the *Diagnostic and Statistical Manual of Mental Disorders, Third Ed.—Revised* (DSM-III-R).[9] DSM-III-R defines alcohol abuse as a maladaptive pattern of use indicated by (a) continued use despite knowledge of having a persistent or recurrent problem that is caused or exacerbated by alcohol use and/or (b) recurrent use in situations in which use is physically hazardous (e.g., driving while intoxicated), with some of these symptoms persisting for at least one month or occurred repeatedly over a longer period of time. A person who is diagnosed as abusing alcohol cannot have met the criteria for alcohol dependency. DSM-III-R defines alcohol dependency based on meeting at least three of nine criteria (e.g., persistent desire or unsuccessful effort to cut down use, frequent intoxication or withdrawal, activities given up, continued use, marked tolerance) for at least one month or repeatedly over a longer period of time.

Epidemiology

Ethnicity

On the basis of the literature review (see Table 1), a relatively robust finding was the higher proportions of alcohol use on the part of Caucasians and Hawaiians as compared to the major Asian ethnic groups in Hawaii (e.g., Japanese, Filipino, Chinese, Korean).[1,5,10-30] These trends appeared in the late 1950s and has persisted through the end of the 20th century. More recent epidemiologic data indicated that these ethnic differences start as early as the 6th grade (i.e., daily drinking, drink in the past 30 days, abuse, dependency).[25,28] The noteworthy exceptions to these patterns included: low rates of

Table 1. Prevalence Rates of Different Types of Alcohol Use and Associated Problems By Ethnic Group in Hawaii

Type of Alcohol Use	Studies (in chronological order)	Sample Descriptions	Ethnic Groups (% within ethnic group unless otherwise indicated) Caucasian	Chinese	Filipino	Hawaiian	Japanese	Other	Other Notes
Abstainers	Epidemiologic Study (1982)[10]	Adults	31%		53%	41%	59%		
	Wilson et al. (1978)[20], Schwitters et al. (1982)[31], & Johnson et al. (1985)[22]	>20 years of age, Oahu	4%	18%	31%	11%	17%		7% Hapa Haole[a]
Lifetime use	Voss (1960)[18]	Oahu	74%	58%	46%	62%	50%	62%	
	Bickerton (1975)[19]	Oahu	84%	67%	71%	91%	82%		
	Hawaii Substance Abuse Survey (1979)[10]	>11 years of age	91%	73%	53%	81%	78%	76%	87% Portuguese
	Youth Risk Behavior Surveillance (1997)[13,30]	High school	79%			80%		71%	68% Non-Hawaiian
	Hawaii Student Alcohol & Other Drug Use Survey (1998)[25]	6th grade	35%	28%	32%	35%	25%		
		8th grade	56%	37%	55%	59%	43%		
		10th grade	76%	55%	74%	80%	64%		
		12th grade	87%	70%	84%	82%	75%		
First drink before age 13	Youth Risk Behavior Surveillance (1997)[13,30]	Middle school				51%			43% Non-Hawaiian
		High school	36%			36%		30%	26% Non-Hawaiian
Daily drinking	Hawaii Student Alcohol & Other Drug Use Survey (1998)[25]	6th grade	1.1%	0.5%	0.9%	1.4%	0.1%		
		8th grade	3.5%	1.5%	1.9%	3.5%	1.3%		
		10th grade	3.9%	2.8%	2.9%	5.8%	2.3%		
		12th grade	3.7%	0.8%	2.8%	4.4%	1.7%		
Drink in past 30 days	Hawaii Substance Abuse Survey (1979)[10]	>11 years of age	78%	41%	36%	53%	45%	51%	53% Portuguese
	Youth Risk Behavior Surveillance (1997)[13,30]	Middle school				31%			23% Non-Hawaiian
		High school	49%			48%		38%	37% Non-Hawaiian
	Behavioral Risk Factor Surveillance (1997)[32]	Adults	67%					42%	
	Hawaii Student Alcohol & Other Drug Use Survey (1998)[25]	6th grade	15%	8%	13%	13%	7%		
		8th grade	32%	12%	24%	33%	15%		
		10th grade	47%	19%	34%	46%	29%		
		12th grade	55%	31%	46%	48%	36%		
Acute binge drinking (for those who drink)	Hawaii Behavioral Health Survey (1993)[24]	Adults	19%		7%	20%	12%	14%	
	Youth Risk Behavior Surveillance (1997)[13,30]	Middle school				16%			8% Non-Hawaiian
		High school	31%			33%		23%	22% Non-Hawaiian
	Behavioral Risk Factor Surveillance (1997)[32]	Adults	28%					35%	
Chronic drinking (for those who drink)	Hawaii Substance Abuse Survey (1979)[10]	>11 years of age	41%	2%	9%	19%	11%	18%	(row %)[b]
	Hawaii Behavioral Health Survey (1993)[24]	Adults	5%		4%	4%	5%	7%	
Any treatment needs (abuse or dependency)	Voss (1961)[1] (excessive drinking)	Adult males	5.5%	1.1%	8.6%	7.4%	5.8%		
	Hawaii Student Alcohol & Other Drug Use Survey (1998)[25]	6th grade	2.7%	0.3%	1.9%	2.3%	0.5%		
		8th grade	6.7%	1.3%	6.3%	10.9%	3.1%		
		10th grade	18.3%	6.7%	13.8%	20.1%	10.7%		
		12th grade	27.9%	12.6%	19.6%	26.5%	17.7%		
Alcohol treatment admissions	Hawaii Substance Abuse Survey (1979)[10]	Adults	70.8%	0.2%	2.3%	10.2%	3.7%	10.8%	(row %)[b]
	Hawaii State Department of Health (1983)[10]	Adults	18.0%	9.0%	10.0%	17.0%			
Drinking & driving	Hawaii Behavioral Health Survey (1993)[24]	Adults	1.0%		1.0%	3.0%	3.0%	2%	
Arrests for drinking under the influence (DUI)	Crime in Hawaii (1997)[26]	Juveniles	25.0%	0.0%	17.5%	27.5%	11.3%	18.7%	(row %)[b]
		Adults	43.6%	2.0%	9.9%	13.9%	10.9%	19.7%	(row %)[b]
Arrests for liquor-law violations	Crime in Hawaii (1997)[26]	Juveniles	32.0%	0.4%	10.2%	31.3%	5.9%	20.2%	(row %)[b]
		Adults	43.0%	2.0%	11.3%	17.6%	5.3%	20.8%	(row %)[b]

[a] Hapa Haole = one parent Caucasian, other parent either Japanese, Chinese, or Korean.

[b] These are row percentages (denominator based on only those arrested across ethnic groups), and therefore, should be interpreted in conjunction with State of Hawaii ethnic population figures: Total population of Hawaii = 1,148, 676: 22.1% Caucasian, 20.8% other mixed ancestry (not including part-Hawaiians), 20.6% Hawaiians/part-Hawaiians, 20.3% Japanese, 10.0% Filipino, 3.1% Chinese, 1.4% African American, 0.8% Korean, 0.8% Samoan or Tongan, and 0.1% Puerto Rican (Hawaii Health Surveillance Program; Department of Business, Economic Development & Tourism, State of Hawaii. *The State of Hawaii Data Book, 1997: A Statistical Abstract.* Honolulu, HI: Department of Business, Economic Development & Tourism, State of Hawaii; 1998).

drinking in the past 30 days for Hawaiian plantation workers on the Big Island (based on a 1959-60 study by Lemert[31]; however, 50% of the Hawaiians were Mormons[5]), highest rates of alcoholism for Filipino males based on 1950-1960 data (with alcoholism estimated from cirrhosis death rates),[1] relatively elevated rates for Filipino children and adolescents who were recently surveyed,[25] inconsistent results for Caucasians and acute drinking,[13,24,32] mixed results for chronic drinking in individuals 12 years of age or above[10,24,27,33-35] and higher alcoholic rates in the 1970s for a heterogeneous group of non-Hawaiians (which included Caucasians) as compared to Hawaiians.[36]

When examining different types of alcoholic beverages and adult drinkers, Le Marchand et al.[28] found Hawaiians consumed more beer than Caucasians, Japanese, Filipinos, and Chinese, while Caucasians drank more wine and hard liquor than the remaining ethnic groups. Finally, a higher percentage of Hawaiian adolescents tended to drink on school property than non-Hawaiians in middle school (Hawaiian = 6%, non-Hawaiian = 3%) continuing into the 9th-12th grades (Hawaiian = 14%, non-Hawaiian = 6%).[30]

Gender

Perhaps the most robust epidemiologic finding was the consistently higher rate of alcohol use by males as compared to females especially for more heavy alcohol consumption and alcohol use during adulthood[18,27] (i.e., first drink before age 13,[11-15] daily drinking for 6-10th graders,[25] at least one drink in the past 30 days for adults,[32] acute/binge drinking for adults,[32,37] chronic drinking for adults[27,32,37]). The very few exceptions to this included females having slightly higher rates for lifetime alcohol use for 8th graders and high schoolers,[11-15,25] and no consistent pattern for having had a drink in the past 30 days for high schoolers.[11-15,25]

Age

Another relatively consistent finding was the increase in alcohol use up to adolescence and young adulthood (i.e., first drink before age 13,[11-15] lifetime use,[11-15,25] daily drinking,[25] drink in past 30 days,[11-15,25] acute drinking,[11-15] abuse/dependency[25]), followed by a decline in use in later adulthood (i.e., drink in past 30 days,[26] acute drinking especially for females[32]). However, male rates of having had at least one drink in the past 30 days increased substantially from high school (41.5%) to adulthood (63.5%), whereas female rates remained approximately the same from high school (38.8%) to adulthood (38.5%).[11-15]

Educational Attainment

The relation between alcohol use and educational attainment varied as a function of the type of alcohol use. In general, there was a positive association between education and alcohol use for less severe drinking (i.e., the higher the education, the more individuals had at least one drink in the past 30 days).[24] In contrast, a negative association was found for more heavy alcohol use (i.e., the higher the education, the less individuals binged).[24]

Comparison to National Figures

In general, people of Hawaii use alcohol at approximately the same rate (i.e., first drink before age 13 for high schoolers,[13] lifetime for adolescents,[25] chronic drinking for adults[32]) or lower (i.e., lifetime for high schoolers,[11-15] drink in the past 30 days and acute drinking for high schoolers[13]) compared to the entire United States. However, when examining adult drinkers, a slightly higher rate of acute drinkers was found for those in Hawaii.[32] Regardless of these findings, Hawaii consumed more gallons of ethanol per year per person than the average for the entire United States[38] perhaps due to the impact of the tourist industry.[5] The consumption of beer and wine was higher for Hawaii, whereas the consumption of spirits (i.e., hard liquor) was higher for the entire United States.[38]

Reasons for Alcohol Use

There are many factors that determine the rates of alcohol use: (a) access, (b) internal attitudes and beliefs, and (c) external influences.

Access

When 6th, 8th, 10th, and 12th graders in Hawaii were asked how difficult it would be to get alcohol, 23.0%, 51.3%, 72.1%, and 77.4%, respectively, responded "fairly easy."[25] Not surprisingly, research on children and adolescents in Hawaii found a positive association between access to and use of alcohol (r = .20 to .45).[25] In examining 14 risk factors, the third highest correlation (r = .56) involved the availability of alcohol.[25]

Internal Attitudes and Beliefs

Several internal attitudes and beliefs (e.g., perceived causes, "normal" drinking, perceived dangerousness, and ability to resist) may be related to alcohol use. A fair degree of agreement has been found between different ethnic groups of undergraduates and adults in Hawaii in perceived causes of alcohol drinking,[16,22,39-43,44] with the exception that Caucasians tended to view problem drinking as due more to heredity and disease and less to social factors.[42] Regarding "normal" drinking, Johnson and his associates[16,22,39-42] found that for different ethnic groups in Hawaii, there was a strong relation between what an adult perceived to be normal drinking and the amount of alcohol consumed. Related to "normal" drinking, as children progressed through adolescence (6th to 12th grade), less severe drinking (e.g., try 1-2 drinks) was perceived to be less dangerous, while more severe drinking (e.g., 1-2 drinks nearly everyday) was perceived to be more harmful.[25] In addition, resistance to alcohol use was found to be related to age and who offers. The greatest amount of resistance to alcohol use was found for 6th graders based on self-reports.[25] By the 8th grade and above, the rates were comparable, although declining resistance was noted when offers were made by friends and strangers. However, overall, the highest rate of resistance was found for offers from strangers (42.9% for 12th graders) and the lowest rate of resistance was offers from parents (13.6% for 12th graders).[25]

External Influences

The 1998 Hawaii Student Alcohol and Drug Use Survey[25] found that of the 14 risk and 6 protective factors associated with alcohol drinking, externally based influences had the highest relations. The highest associated risks were friends' substance use (r = .69), perceived peer substance use (r = .67), and availability (r = .56, as reported above). The greatest associated protective factors were peer disapproval (r = -.45), parental substance use sanctions (r = -.30), and school prevention efforts (r = -.22). Ironically, these

factors may work counter to one another within the same family. On the one hand, (a) the greater the perceived family efforts in teaching the dangers of alcohol use and how to deal with peer pressure, the less the alcohol consumption of 6th to 12th graders in Hawaii and the higher the resistance to offers from friends and strangers, (b) only a very small minority of 6th to 12th graders felt that their friends would "think it was cool" to have five or more drinks once or twice every weekend or take one or two drinks nearly everyday, and (c) 6th to 12th graders indicated that their parents, teachers, and coaches were telling students not to use alcohol more so than their siblings, relatives, friends, or priests. On the other hand, (a) family efforts were perceived to decrease from the 6th to 12th grade, (b) the primary source of exposure of alcohol and drugs to adolescents were their own parents (e.g., 25.8% for 12th-grade respondents), (c) for 6th graders, parents (11.4%) and other relatives (12.9%) were most likely to offer alcohol, and (d) for 12th graders, friends (82.9%) were by far more likely to be the ones to offer alcohol.

For adults in Hawaii, social occasions influence alcohol use. For example, increased rates were found for Japanese and Chinese due to attending weddings or other "formal" occasions.[3] Similarly, the Epidemiologic Survey of 1984[27] found a positive association between alcohol use and social activities for Japanese and Filipinos. For Caucasians, a positive relation was found between alcohol use and visits by others to one's home, and between alcohol consumption and visits to friends' homes. For Hawaiians, an association was found between alcohol use and visits by others to one's home. However, the overall higher rates of alcohol consumption for Hawaiians was unlikely to be solely due to social drinking, given the lower rate of social drinking on the part of Hawaiians (36.6%) as compared to the State of Hawaii (67.5%).[45-46]

Given the diverse religious affiliations that parallel the multiethnic people of Hawaii, religion may also play a role in the rate of alcohol consumption. Clark, Beeghley, and Cochran found that the influence of people's religious groups was more than that of their class.[47] Persons of Chinese, Japanese, and Korean ancestry make up well over one-fifth of the population of Hawaii and frequently maintain affiliation with Buddhist religion and Confucian philosophy. Although these affiliations may not directly influence alcohol use,[48] they probably are associated with a kind of social conservatism that results in a low rate of alcohol consumption, thus reducing the state-wide rates described previously. Protestant, as compared with Catholic, affiliation was associated with no or low use in North America,[49] Scotland,[50] and Korea (females only).[48] Clark et al. found the Protestant-Catholic difference resulted largely from the low rate of alcohol use among proscriptive (conservative) Protestant religious groups. Persons of Hawaiian ancestry (even when involved with traditional Hawaiian religious beliefs) were far more often Protestant than Catholic, probably because the royalty were Congregationalists until the time of King Kamehameha IV, when they became Episcopalians. The Hawaiians' Protestantism (though liberal) might be expected to result in lower rates of alcohol consumption, but this did not appear to be the case or was only one factor influencing alcohol use rates. One worthy note regards the substantial number of persons of Hawaiian ancestry who belong to the Latter Day Saints (Mormon) religion. On the basis of personal conversations with persons who joined the Latter Day Saints as well as findings from the late 1950s,[5,31] it seems highly probable that many who joined (given the strong Mormon prohibitions) did so in order to support their own desire to avoid problems having to do with excessive alcohol use.

Associated Problems

An important consideration regarding alcohol use is its adverse effects on the user (e.g., lower intellectual functioning, increased perceived problems, decreased perceived future educational attainment, comorbid drug abuse, comorbid mental illness, "flushing" [vasodilation of blood vessels in the skin], increased adolescent sexual activity, driving under the influence, liquor-law violations/arrests, suicide, withdrawal, cirrhosis, other physiological outcomes including cancer and mortality), his or her social relations (e.g., birth defects, child maltreatment on the part of parents, family discord, marital dissatisfaction, assaults), and society (e.g., poor work functioning, motor-vehicle violations, corrections facilities, rehabilitation services, societal costs).[1-3,10-15,20-21,24-25,27-28,32,37,43,45-46,51-71]

Ethnicity

Ethnic differences regarding associated problems have generally reflected the disproportionately higher rates of alcohol use for Caucasians and/or Hawaiians in comparison to the major Asian groups in Hawaii. These problems included alcohol-related cognitive and physical symptoms,[27] parents who were alcoholic (Hawaiians),[65] provision of perinatal health services to women,[59] alcohol and drug use by adults,[27] comorbid mental illness (Caucasians),[1] drinking and driving,[24] driving under the influence (see Table 1),[51-53] liquor-law violations (see Table 1),[53] and alcohol-related causes of death (homicide [Hawaiians], motor-vehicle accidents [Hawaiians], suicide [Hawaiians], cirrhosis [Caucasians]).[66]

The only exceptions to the greater levels of associated problems for Caucasians and Hawaiians were as follows: (a) highest to lowest rates of fetal alcohol syndrome per 10,000 births = Vietnamese (14.4), Native American Indian (11.5), Hispanic (11.0), Hawaiian (7.1), and Caucasian (4.2), with all other ethnic groups equal to or below 3.0,[60] (b) alcohol use higher than average for Filipino, Samoan, Tongan, and Pacific-Islander inmates (excluding Hawaiians) for those incarcerated in the State of Hawaii correctional facilities,[68] (c) highest to lowest rates of heavy polydrug use for the incarcerated = 57% Hispanics, 48% Hawaiians, 48% Asians, 39% African American, 36% others, 33% Caucasians, 32% Filipinos, and 17% Pacific Islanders,[68] and (d) rates of cirrhosis of the liver per 100,000 people = 8,590 Filipino males (highest), 7,410 Hawaiian males, 5,790 Japanese males, 5,530 Caucasians males, 1,100 Chinese males; and 1,850 Caucasian females (which was the highest for females other than "other").[1]

Intervention

Alcohol Abuse/Dependency and Treatment Needs

The prevalence of alcohol abuse and dependency has been equated to alcohol treatment needs.[25] The 1995 Hawaii Adult Household Survey of Substance Use and Treatment Needs[72] used DSM-III-R criteria and found alcohol abuse/dependency to have the highest rates as compared to other drugs (i.e., marijuana, cocaine, hallucinogens, heroin, amphetamines). Of those surveyed, 6.4% needed treatment for alcohol only, 1.4% for both alcohol and other drugs,

and 8.9% for alcohol and/or other drugs. Similar results were obtained by Kroliczak et al.[73] However, much higher rates were found for 10th and 12th graders based on the 1998 Hawaii Student Alcohol and Other Drug Use Survey (see Table 1), with relatively escalated prevalences for Caucasians and Hawaiians.[25]

Help Seeking, Treatment Admissions, and Treatment Utilization

Based on the 1996 Hawaii Student Alcohol and Other Drug Use Survey,[74] the four most common reasons for not seeking help were: (a) no idea where to go for assistance, (b) could solve problems by oneself, (c) fear that the teacher or parent would find out, and (d) get in trouble with the law. For adults, Kroliczak et al. found that lack of transportation was the most frequent reason given as an obstacle for substance use treatment.[73]

Actual admission records also shed light on the problems associated with alcohol use. In the early 1970s, the data indicated that for those who were in treatment programs, the majority (2/3 to 4/5) were males as compared to females, and most (1/2 to 9/10 depending on the type of treatment with the exception of seeing clergy) were Caucasian (as opposed to Hawaiian, Japanese, Filipino, Chinese, and other).[2,4,75-76] Despite Hawaiians constituting 17.2% of the population of Hawaii at the time, relatively low rates of treatment utilization were evidenced (e.g., 8.0% for detoxification[75]). Similar results were found based on the 1979 Hawaii Substance Abuse Survey (as cited in E Ola Mau[10]), where Caucasians were over-represented in alcohol treatment facilities and the other ethnic groups were under-represented (see Table 1). However, figures from 1983 (by the Hawaii State Department of Health, as reported in E Ola Mau[10]) indicated a decrease in the treatment rate for Caucasians, but an increase for Hawaiians. More recent data from the Hawaii State Department of Health (1992-97)[77] supported the higher admissions rate for Hawaiians (as cited in the Native Hawaiian Data Book, 1998[45]). Admissions to substance abuse treatment programs (with purchase of service contracts from the Alcohol & Drug Abuse Division) across a six-year period indicated that approximately one-third of the clients were Hawaiian (e.g., 1,992 of 5,258 cases = 37.7%). It must be noted, however, that treatment access and utilization may be at least partially determined by socioeconomic and cultural variables (e.g., Asians sought less help from institutions,[5] Hawaiians sought more help from friends and family members[5] and sought less help from professionals,[27] Caucasians had smaller extended families).

Efficacy

Related to help-seeking behaviors and treatment utilization is the perceived and actual effectiveness of alcohol programs. Based on the 1998 Hawaii Student Alcohol and Drug Use Survey, the majority of 8th, 10th, and 12th graders felt that the schools' efforts regarding alcohol/drug education and treatment programs were not good or not excellent.[25] In another study, the five most highly rated treatments for Hawaiians (most of whom were adults) were: (a) positive thinking, (b) Alcoholics Anonymous, (c) willpower, (d) residential treatment, and (e) mental health professionals.[43] "Traditional healer" was consistently rated low. Research on undergraduate college students in Hawaii regarding their beliefs in alcohol treatment effectiveness found a fair degree of agreement between ethnic groups.[42] However, contrary to the research on the effectiveness of various treatments, the undergraduates believed that Alcoholics Anonymous and residential treatment were the most effective treatments. According to Johnson based on a review,[78] "Maturing out, family involvement, religious involvement and learning useful skills seem to be the kinds of treatment that have worked for Hawaiians," p.15 with Alcoholics Anonymous probably being less effective. Alternative activities such as boating, sailing, literacy, and cultural involvement may also serve to decrease alcohol use.[78]

Conclusions

The present article summarized the research literature on alcohol use in Hawaii by discussing epidemiology, reasons for alcohol use, associated problems, and interventions, with particular focus on ethnic similarities and differences. *In general*, the following points can be reasonably made on the basis of the review:

- Particular groups tended to have higher rates and more associated problems: Caucasians, Hawaiians, males, adolescents, and young adults.
- Variable results were found for Filipinos; greater alcohol use was suggested for younger Filipinos than older ones. However, this may have been due to either differences in developmental stages or discrepancies in generational attitudes and behaviors.
- Ethnic minority groups (e.g., African American, Hispanic, Native American Indian, Samoan, Tongan, Vietnamese) in contrast to the major ancestries in Hawaii (i.e., Caucasian, Filipino, Japanese, Hawaiian) may have been at even greater risk for some of the types of alcohol use.
- Higher educational attainment was associated with higher levels of less-severe drinking, whereas lower educational attainment was related to more heavy forms of alcohol consumption.
- The people of Hawaii had either lower or comparable rates of alcohol use as compared to the United States. Although higher levels of overall alcohol consumption was found, this was likely related to alcohol use by tourists.
- Access and availability to alcohol were risk factors, as expected, with a dramatic increase in accessibility from the 6th to 10th grades, and with parents, relatives, and friends the most likely to offer alcohol to children and adolescents than other social-network groups.
- Other associated risks included perceived "normal" versus dangerous drinking, peer/friends' substance use, and social occasions (e.g., weddings, home visits).
- Protective factors included ability to resist offers, peer disapproval, parent substance use sanctions, school prevention efforts, and religious affiliation.
- The reasons for lack of help-seeking behaviors varied as a function of developmental age and perhaps ethnic differences.
- Treatment admissions and utilization rates steadily increased across the past two to three decades for Hawaiians, such that Hawaiians are now over-represented in such treatment programs.
- Although there appeared to be a fair degree of agreement on the perceived efficacy of alcohol treatments, the perceived effectiveness was not necessarily consistent with the known efficacy of common programs (e.g., Alcoholics Anonymous).

Some caution is warranted in interpreting the research findings. The studies cited were not conducted with a common research agenda (heterogeneous samples and data sets from different periods of time examining many alcohol-related topics). However, the accumulation of knowledge about alcohol use in Hawaii has progressed to a point where further statements can be made, especially regarding clinical implications and future research.

Clinical Implications and Program Needs

There is a clear need for additional alcohol prevention, screening, and intervention programs in Hawaii. In addition to obvious environments for prevention programs (e.g., schools), health professionals can play important roles. Prevention programs should begin early in childhood (prior to the 6th grade), pay particular attention to at-risk groups (as outlined above), and strongly consider family, social, and cultural influences. Pediatricians and nurses are particularly at the "front line" of prevention as are physicians who treat adults (especially parents) with alcohol-related problems. Issues concerning accessibility, attitudes (e.g., normal drinking, stigma), beliefs (e.g., dangerousness, religion), source of offers, resistance to offers, and alternative socially productive activities are highly pertinent.

Effective screening and identification are also critical in light of the prevalences from community samples. Although screenings should occur on various fronts (e.g., physicians' offices, schools), greater community outreach efforts may be warranted because of the varied rates of help-seeking behaviors on the part of people in Hawaii. This may include community-based educational programs to decrease the stigma associated with alcohol-related illnesses[1] and to increase awareness of the availability of cost-effective screening and treatment programs.

Treatment programs (e.g., outpatient, partial hospitalization, medically monitored/managed inpatient care,[63] residential) should be tailored to the individualized needs of each person. In addition to the alcohol use per se, treatment considerations should include other associated issues and problems such as comorbid mental illness,[68] polysubstance abuse (e.g., crystal methamphetamine[68]), social support, and so on.

As a general statement, the consistent differences found between socio-cultural groups suggest the need for socio-culturally appropriate preventions, screening programs, and treatment interventions.[29,78] This is particularly important given the variable rates of helping-seeking behaviors, admissions, and treatment utilization.

Further Research

Despite the progress made in our knowledge related to alcohol use, research is needed in virtually all areas. The following domains have been particularly neglected:

- Etiology of alcohol use of risk groups, including differentiating between biological, educational, social, cultural, and economic determinants.[78]
- Individuals of mixed (40% of Hawaii's population) and less-frequently represented ancestries (e.g., African American, Hispanic, Native American Indian, Alaska Native, Chinese, Korean, Vietnamese, Samoan, Tongan).[5]
- Developmental and longitudinal approach (e.g., child, adolescent, and adult drinking; treatment progress and recidivism).
- Efficacy of interventions that incorporate relevant socio-cultural (e.g., attitudes, beliefs, cultural sensitivity, social support, community norms) and alcohol-related issues (e.g., polysubstance use, comorbidity, etc.).[1,68]

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