
Prevention of Adolescent Alcohol Problems in Special Populations

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Abstract. Research on the prevention of alcohol abuse in America has only recently begun to consider the needs of special populations. This chapter will consider alcohol prevention as a function of four major special population divisions: gender, ethnicity, region (population density), and socioeconomic status. Specific ethnic groups examined will include Hispanics, African-Americans, Asian-Americans, and Native Americans. In general, there is some support for the utility of current alcohol prevention approaches on special populations. Much population-specific work completed to date has not been rigorously designed or evaluated, though it appears likely that partnering with population gatekeepers and showing cultural respect and sensitivity to the population, and providing material that is relevant to the population's adaptation to their environment are essential.

1. Introduction

Minority youth, together with adolescents defined by other sociodemographic characteristics, require special attention from alcohol researchers. In America today, youth from special populations are under-researched, under-served, and poorly represented in alcohol prevention studies. Within the National Institutes of Health, special populations research is becoming a focal point, as illustrated by the significant investment by the National Institute on Alcohol Abuse and Alcoholism in the prevention of teenage alcohol-related problems in special populations.¹ Most often, demographics delineate special populations. Consequently, this chapter considers alcohol prevention as a function of gender, ethnicity, region (population density), and socioeconomic status.

To set the stage for this discussion, the research backdrop for special population research must be articulated. Research on special populations is

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sometimes assumed to be needed because of another assumption—that a body of knowledge has all ready been accumulated on general populations, and that this body of knowledge may not apply well or maximally to populations less often studied carefully. This latter assumption may not apply well to the field of alcohol prevention research. The limit of progress in special population work is rendered difficult by the current general status of alcohol prevention knowledge.

Prevention of alcohol abuse has been relatively difficult to effect among substances of abuse.² At least five major reasons exist for this quandary. First, ambiguity surrounds information about the dangers of alcohol use. Small doses of alcohol are purportedly healthy, at least among an adult population.³ Generally, available guidelines suggest that no more than one drink a day for women and two drinks a day for men (12 oz beer, 5 oz wine, 1.5 oz 80-proof spirits) are considered a ceiling of healthy drinking.³ Arguably any drinking is dangerous for a young teen because it could set up a pattern for heavy drinking as a young adult. Among youth, it is not clear that small doses are injurious although they are illegal. Certainly, larger doses of alcohol may be dangerous particularly while one's nervous system is still in development.⁴ Unfortunately, there is a widespread acceptability of alcohol use across many societies alongside a widespread denial that alcohol use is dangerous.⁵ As a corollary to this large social climate attitude, relatively few treatment agents will warn youth about the dangers of alcohol use. For example, at present only about 50% of primary care physicians will warn their young patients about the risks of alcohol abuse.⁶

Second, that alcohol use is illegal among youth but not among adults may present alcohol as "forbidden fruit" among teens. Because adults can legally drink, youth may be more tempted to drink than if drinking were not appropriate for anyone. Third, many cultures through use of rituals, special events, specialty shops, or in their mass media, promote use of alcohol as a means of social lubrication, sophistication, or as rites of passage to adulthood. Many movies depict teens drinking to excess and experiencing almost transcendent pleasure.

Fourth, alcohol generally is easy to obtain by teens as well as by adults. It can even be manufactured at home with readily available products. Finally, many researchers popularly assert that different youth are differentially vulnerable to suffering chronic problems with alcohol. Possibly, up to 50% of "alcoholism" has a genetic basis⁷, which may be related to relatively early onset and sensation seeking tendencies. From such assertions, some people may assume that a progression of alcohol use among vulnerable persons is intractable. That is, prevention would not be successful. (These assertions run parallel to and separate from other findings that suggest social and environmental variables are largely responsible for delayed initiation of alcohol use; see ref. 4) Even though a blanket of skepticism clouds the progress of alcohol prevention work, such work does and should continue to prevent the consequences that adolescents who drink alcohol may suffer.

2. Consequences of Teen Alcohol Use

Alcohol use results in numerous life problems. Alcohol accounts for two-thirds of substance abuse disorder treatment worldwide,⁸ and incurs enormous health care costs due to alcohol use-related accidents or injuries, fetal effects, and diseases such as alcoholic liver disease.⁵ Negative effects on one's productivity in society are additional dire consequences of use.

Among youth, these consequences begin with increased tolerance to alcohol and much time sacrificed to obtain and use alcohol. Then, youth who drink may suffer impairments in their social and role functioning. Eventually, youth may begin to desire to control use and find that they are having difficulty doing so, resulting in or related to new problems such as fights, poor school performance, and illegal or dangerous behavior.⁹ Serious and fatal consequences can occur with very occasional use. Any high quantity drinking can result in alcohol poisoning. Traffic fatalities are the number one cause of death among adolescents and many are alcohol-related. Alcohol is associated with many other unintentional injuries including drowning, boating accidents, and fire burns.¹⁰ Drinking is associated with violence, including rioting as well as fights and assaults; adolescents who are under the influence of alcohol are vulnerable to assaults, especially sexual assaults. Hangovers are incompatible with schoolwork. Drinking exacerbates depression and alcohol use increases the risk for suicide. Decision making is impaired and may lead to having unprotected sex (e.g., see refs. 10,11,12,13).

Perversely, youth seek out alcohol often to improve social functioning, and then later suffer social consequences related to alcohol use. Youth look to alcohol as an enjoyable distraction and then become preoccupied with its use to the exclusion of other activities. If they become accustomed to using alcohol at an early age, they are relatively likely to suffer the more severe alcohol-related problems in adulthood.^{2,5} Many researchers have searched for means to delay youth from using alcohol or prevent youth from abusing alcohol, to try to curb the negative consequences that eventually would result otherwise. Any program that delays the onset or increases in alcohol use also is likely to succeed in interrupting the cascade of increasing risk.

3. Universal Prevention Program Effects

Before examining alcohol use prevention programming among special populations, this chapter first examines what is known about alcohol use prevention, in general. This knowledge sets a limit, perhaps, on what can be discerned among special populations since, by definition, there is less known and available to assist special populations. Numerous types of alcohol use prevention strategies are being attempted. One general type of programming focuses on changes in the alcohol use environment (sometimes referred to as "supply reduction"; see 14). Environmental prevention strategies include traffic safety education, policy mechanisms (e.g., raising the minimum drinking age, alcohol

taxation, BAL limits and enforcement, zoning), server training, and community involvement (coalitions, point-of-sales stings, community leader and business involvement, media and family involvement; see 2, 4, 5). Some environmental manipulations, such as use of warning labels and provision of alternative youth activities outside of school may serve to reduce demand for alcohol, as well as potentially limit exposure to alcohol. Results of these programs are promising; they have effected decreases in heavy drinking among youth and decreases in numbers of fatal car crashes (see review in refs 2, 15). These various prevention program components attempt to make alcohol use less accessible, less desirable socially, as well as make one's social environment more supportive to nonuse.^{2,4,5} These programs are likely to be of relative importance in the prevention of youth alcohol use because alcohol is so widely available to youth, both outside and inside the home (see refs. 15,16).

Alcohol demand reduction programs also have been evaluated. Social influences and comprehensive life skills programs have been considered to be relatively effective demand reduction programs.¹⁷ Social influences programming provides normative information and skill instruction (e.g., corrective prevalence and peer approval norms, awareness of social influences, refusal assertion skill instruction, making a public commitment not to use). The theoretical basis of social influences programming in its simplest form is that inoculation against direct or indirect social pressure to use alcohol will help prevent use when youth enter alcohol use situations. Comprehensive life skill programming subsumes social influence material, and adds life skill information (e.g., problem solving, general social skills, and coping skills). However, some recent empirical reviews and meta-analyses question the clinical significance of programming designed to reduce alcohol use prevalence among teens at a 1-year follow-up.^{2,18,19,20,21,22} Even iatrogenic effects have been suggested among those youth who are drinkers prior to program implementation.²² One suggestion made is that social skills training programs attempt to influence a very narrow range of factors that influence the development of drinking behavior. In particular, these programs are argued to focus on interpersonal factors, whereas correction of erroneous (intra-personal) alcohol-related beliefs, counteraction of widespread acceptability and tolerance of alcohol use, tailoring of delivery to different groups, or multi-faceted modalities of implementation are needed.^{20,21}

Very recently, Skara & Sussman²³ examined all school-based alcohol and drug abuse prevention education programs (which may also include family and community involvement) that reported data of at least a two-year follow-up, extending at least from junior high school to high school age. A total of nine social influences or comprehensive life skill studies summarize the total pool of programming that reported longer-term quantitative data on alcohol-specific program effects in that review. Ten other alcohol prevention studies were added here to provide information on all work that provides at least a two-year follow-up. Six of these ten studies do not cross over from junior high school to high school age.^{21,25,26,27,28} Four studies do cross over this transition period.^{29,30,31,32,33} One pioneer, brief pilot study program (3 sessions plus booster activities), that utilized a

very small sample of 9th grade youth (91 social influences program participants and 30 controls from one high school), is not reported among this total set of 19 programs (i.e., ref. 34). While a 3-year behavioral follow-up in 11th grade was reported, the sample is too small and limited to include other than as a historical note. (No effects were found at the 3-year follow-up.)

These programs are presented in Table 1. Some of these programs had initial effects that later decayed. At 1-year follow-up, the MMCSHE project found no difference in frequency of drinking but did find a difference in numbers of drinks per sitting (mean difference=.52 drinks). This number-of-drinks effect vanished by the 6-year follow-up. AMPS found an effect at 27-months follow-up only on the baseline “unsupervised use” subgroup (8% of the sample) for which the rate of alcohol misuse was halved compared to the control sample. This subgroup effect disappeared by the last, 4-year follow-up time-point^{19,33,35}. Project Northland found effects on weekly use that vanished by the 5-year follow-up, although effects on binge drinking remained. Project ALERT found only a temporary effect on baseline non-drinkers. Finally, Project TND found a 10% relative reduction effect among baseline drinkers on 30-day alcohol use at a 1-year follow-up that vanished by the 2-year follow-up.

A brief summary of these 19 long-term follow-up studies is enlightening. These studies primarily were implemented with young teens at baseline that received a mean of 14.9 sessions of program material. Primarily white youth were targeted in 11 of the studies (ethnicity was not reported in two studies). A total of 13 studies used an experimental design, and 6 were quasi-experimental. A total of 10 studies were social influence-oriented, and 8 studies were comprehensive life skills oriented (i.e., social influences programming plus material on coping skills and communication skills). One other study also included motivation enhancement material along with comprehensive life skill material (Project TND). These 19 long-term follow-up studies involved an average of 3.8 years follow-up. Interestingly, 11 studies demonstrated program effects at final follow-ups. Albeit effect sizes were small, eight studies achieved effects on problematic use, over varying geographic regions.

Though a majority of the studies targeted mostly white subjects, ethnic minorities were represented in several studies. Of the 17 studies that reported ethnicity, 14 included whites, eight included Hispanics, eight included African-Americans, four included Asians, and two included Native Americans, as composing at least 5% of the sample in the study. In addition, 10 of the studies were conducted at least in part in rural areas, and four took a focus on poor youth. Alcohol abuse prevention shows some promise long-term among general and special populations.

4. Special Populations and Alcohol Prevention

Special populations are those which require specially focused attention by virtue of social and historical circumstance, process or elements of culture, or

having been significantly neglected in past studies or programs.¹ This section will discuss what is known about alcohol prevention as a function of four special population divisions: gender, ethnicity, region, and socioeconomic status.

4.1. *Gender*

Males are more likely than females to have ever been drunk by 12th grade (65.1% versus 62.2%) and are more likely to report having been drunk in the last 30 days (37.0% versus 28.4%). They are also more likely to consume large quantities in a single sitting.⁷ Males also are at greater risk for poor refusal skills, which is associated with greater risk for alcohol use.³⁶ Conversely, girls may be pressured into drinking by their peers more so than are boys.³⁷ Gender differences have failed to be found regarding alcohol abuse and dependence among teen drug abusers attending drug clinics.³⁸ Also prevention program findings on alcohol use apply across gender. Many prevention studies did not examine alcohol use results by gender. Rather, gender was not discussed or it was entered as a covariate (adjustment variable). But among those studies that directly examined gender effects, no differences were revealed (see refs. 17, 23, 28, 39, 40). Even so, some specialized prevention studies focus only on delivery to females (e.g., ref. 41), and there may be gender-specific issues that youth would not want to share only with the other gender (e.g., physical maturation).

4.2. *Ethnicity*

Whites are relatively likely to have been ever drunk by 12th grade compared to African-Americans and Hispanics (67.9 versus 40.5% and 63.8%) and are relatively likely to report having been drunk in the last 30 days (37.7% versus 25.5% and 12.0%; ref. 42). Generally, Asian-Americans show the lowest level of drinking among ethnic groups, though notable differences exist between different Asian groups.¹ With great variation across tribes, Native Americans show the highest rate of alcoholism-related consequences among any ethnic group.^{43,44} While whites report greater prevalence of alcohol use, alcohol use is understudied among other ethnic groups, and these groups do suffer alcohol-related consequences. Arguably, one may have more confidence in prevalence data on alcohol use among white persons because there is more data about them. The following subsections present the information on alcohol prevention as applied to Hispanics, African-Americans, Asian-Americans, and Native-Americans ethnic groups.

4.2.1. Hispanics. Ethnic minorities are underrepresented in alcohol research, and studies that are completed generally do not consider within (molar) group label variability.⁴⁵ For example, in the few prevalence comparison studies completed with Hispanics, Mexican-Americans generally have been found to report higher drinking rates and alcohol-related problems than Puerto Rican or Cuban-Americans.⁴⁵ One reason for this disparity in reporting among Hispanic

ethnic groups could include differential cross-cultural influences. In particular, Mexican Americans experience easy and proximal travel between Mexico and the U.S., leading to a relatively greater number of communications across cultures. These frequent communications might lead some Mexican-Americans to search for ways to maintain their cultural uniqueness and pride while traveling to and from the wealthier, dominant culture. Inadequate preparation and flexibility in adapting to experiences in both cultures may lead to alcohol use as an escapist means of coping. Interestingly, Cinco de Mayo is a Mexican holiday that celebrates Mexican determination to retain hard-fought independence from invaders. This holiday has achieved greater importance among Mexican-Americans than Mexicans, perhaps because Mexican-Americans may have a relatively greater desire to instill or maintain ethnic pride amidst the presence of the dominant culture. The alcohol industry has responded to this holiday by a promotion that has linked the holiday and “being Mexican” to drinking beer,⁴⁶ anecdotally resulting in much drinking occurring on this day among Mexican Americans, particularly males. Not so surprisingly, perhaps, Mexican-American males are at relatively high risk for alcohol-related problems (e.g., Alcoholic Liver Disease), when compared to whites.⁴⁷

Among Mexican-American youth, there appears to be a relation between using the language of the dominant culture (English) and alcohol use. Language-based acculturation measures predict 30-day drinking among Mexican-American youth, including those who are migrant farm children.^{32,48} Possibly, these youth that learn English find themselves at a greater emotional distance from their Spanish-only speaking parents. Certainly, acculturation processes are complicated and need continued research.

Some prevention programming developed for Latinos has been delivered to multiple ethnic groups, among which Latinos are a large minority or a majority. For example, Botvin, Schinke and colleagues^{29,49} developed a culturally tailored intervention for Latinos and African American youth. This program made use of a professional “story teller” who told mythic stories drawn from African, Spanish, and Greek cultures to relay important social or life skills. Also used were biographies of minority heroes who used their skills to overcome adversity; a rap video that instructs how skills are used in different situations; and peer leaders who assisted adult leaders. This program was compared to standard Life Skills Training (both were 23 sessions long) and an 8-session information-only control condition (IC) at six inner city schools (mean age=12.7 years; n=757 at pretest; two schools per condition), in which 49% were African American and 37% were Latino. Results at 2-year follow-up indicated that youth in the culturally sensitive program (Culturally Focused Intervention; CFI) reported less drinking than those in the Life Skills Training condition, although both conditions reported less drinking and drunkenness than youths in the control condition. Use in the last 30 days was 13% for IC, 10% for LST, and 6% for CFI. This study appeared promising, but the number of schools per condition was small (see Table 1).

Table 1. Long-term Evaluations of Youth Alcohol Prevention Programs

Name of Program Developers	Name of Program	Grade of Subjects at Baseline	Length of Follow-up (years)	Number of Program Sessions	Methodological Design	Outcomes*	Subject Ethnicity	Region	Type of Program
Botvin et al.	Life Skills Training (LST)	7th	6	30	Exp.	7% monthly drunkenness	91% White	Suburban/rural NY	CLS; S
Pentz et al.	Midwest Prevention Project (MPP)	6th and 7th	6	15 and comm. support	Quasi-Exp. KS Exp. Ind.	2% last week use; 17% KC, 1% Ind. monthly drunk	77% White, 19% Afr. Am., 2% Hisp.	Urban/suburban/rural KS and IN	CSI; S,F,M,SR
Hansen et al.	Adolescent Alcohol Prevention Trial (AAPT)	5th and 7th	5	10	Exp.	Small effect on light drinkers	47% White, 28% Hisp., 16% Asian Am., 2.5% Afr. Am.	Urban/suburban CA	CSI; S
Flynn et al.	Mass Media and School Intervention (MMSI)	4th, 5th, and 6th	5	22 and media support	Quasi-Exp.	6% drinking beer more than once	96% White	Suburban MT, NY, and VT	SI; S
Shope et al.	Michigan Model for Comprehensive School Health Education (MMSHE)	6th	6	23	Quasi-Exp.	No effect	94% White	Suburban/rural Midwest	SI; S
Perry et al.	Project Northland	6th	5	20 and comm. support	Exp.	.09 growth of binge drinking (5+ / 3 weeks)	94.5% White, 5.5% Nat. Am.	Rural Midwest, poor	CSI; S,F,SR
Ellickson et al.	Adolescent Learning Experiences in Resistance Training (ALERT)	7th	5	11	Exp.	No effect	67% White, 10% Hisp., 10% Afr. Am., 8% Asian Am.	Urban/Suburban/Rural CA and OR	CSI; S

Loveland-Cherry et al.	Child and Parent Relations Project (CPRP)	4th	4	3 (to family)	Exp.	No overall effect**	86% White	Suburban/rural Midwest	CLS; S;F
Wynn et al. (Dielman)	Alcohol Misuse Prevention Study (AMPS)	6th	4	17	Exp.	No overall effect	77% White, 13% Afr. Am.	Suburban/rural Midwest	SI; S
Schinke et al., 2000	Bicultural Life Skills Program (BLSPP)	3rd, 4th, and 5th	3.5	15 plus comm. support	Exp.	20% 4+ drinks per week (6% difference)	100% Nat. Am.	Rural ID OK, MT, ND, SD	CLS with cultural material; S;F; SR
Hawkins et al.	Preparing for The Drug Free Years (PDFY)	7th	3.5	5 (multi-media, to parents)	Exp.	16% monthly use; 10% been drunk	100% White	Rural Midwest, poor	CLS; F
Cuijpers et al.	Healthy School and Drugs Project (HSDP)	7th	3	9	Quasi-Exp.	12.7% weekly use; 1 less drink per occasion	?	Holland	CSI; S
Hansen et al.	Tobacco and Alcohol Prevention Program (TAPP)	6th and 7th	3	15	Quasi-Exp.	No effect	60% White, 15% Asian Am., 10% Hisp., 5% Afr. Am.	Urban CA	CSI; S
Sussman et al.	Project Towards No Drug Abuse (TND)	9th, 10th, 11th, 12th; mean of 17 years	2	12	Exp.	No effect	45% White, 42% Hisp, 10% Afr. Am.	Urban/suburban CA	MSD; S
Botvin et al., 1995	Culturally Focused Life Skills Training (CFI)	7th	2	23	Exp., but 2 schools per condition	CFI=6%, LST=10%, 5% White, 37% Hisp, 49% Afr. Am.	IC=13% alcohol use last 30 days	Urban NYC	CLS with cultural material; S
Botvin et al., 2001	Culturally Focused Life Skills Training-2 (CFI-2)	7th	2	25	Exp., 16 program, 13 control schools	CFI-2=2.2%, Control=5.2% binge drinking, typically	3% White, 8% Asian Am., 24% Hisp, 57% Afr. Am.	Urban NYC	CLS with cultural material; S

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Name of Program Developers	Name of Program	Grade of Subjects at Baseline	Length of Follow-up (years)	Number of Program Sessions	Methodological Design	Outcomes*	Subject Ethnicity	Region	Type of Program
Elder et al.,	Sembrando Salud	5th to 10th grade	2	8	Exp.	No effect; 5.3% in attention control, 6.8% in program group	100% Hisp.	Urban/Suburban/Rural CA, material; S, F poor	CLS with cultural material; S, F
Schinke et al., in press	Thinking Not Drinking: A SODAS City Adventure (T:S)	8 to 10 years old	2	10	Exp.	46% less likely to be drunk in last month, two program groups; no other alcohol effects (lifetime, 30-day use)	11% White, 30% Hisp, 54% Afr. Am.	Urban NYC, poor	CLS; M (CD-ROM computer-based, urban landscape), F
Telch et al.	Counseling Leadership about Smoking Prevention (CLASP)	9th, 10th, 11th, 12th; mean of 17 years	2	12	Exp.	No effect	45% White, 42% Hisp, 10% Afr. Am.	Urban/Suburban CA	

Notes. comm. support = community support; Quasi-exp. = quasi-experimental; Exp. = experimental; K.S. = Kansas City; Ind. = Indianapolis; * Outcomes refers to a comparison of relative effects of a program condition with a control condition, generally a difference score; ** refers to a small (0.3) difference in drinks per week over the last year favoring the program condition, for baseline non-drinkers—whereas for baseline drinkers the program appears to exert an iatrogenic effect (1.6 difference in drinks per week over last year); Hisp. = Hispanic; Asian Am. = Asian American; Afr. Am. = African American; Nat. Am. = Native American; initials in Region category refer to the States the study was conducted in; SI = traditional social influences program (refusal assertion focused) and decision making; CSI = comprehensive social influences program (includes public commitment, normative education components); CSL = comprehensive life skills (also includes communication and self-control skill material); ? = information not provided; S, F, M, and SR = school, family, media, and supply components, respectively.

Schinke, Botvin and their colleagues followed this study with the development of an adapted Life Skills Training Program that was much less drastically altered than the prior study version. This newer program subsequently was shown to prevent binge drinking at a 2-year follow-up, targeting African-American and Latinos (as described in the next subsection on African Americans; see refs. 30, 31).

Sussman and colleagues' drug abuse prevention programming with alternative and regular high school youth (Project TND) showed a 10% relative reduction in alcohol use across three randomized trials at a one-year follow-up among baseline drinkers in a sample that is 40% Latino.⁴⁰ This project involves only a little cultural tailoring (e.g., names used in activities). However, effects on alcohol use were found to dissipate by 2-year follow-up in one of those trials.²⁸

Eisen, Zellman, & Murray⁵⁰ provided a 1-year post-program evaluation of the Lions-Quest Skills for Adolescence drug education program. The program was delivered at four program sites [Los Angeles, Detroit (city and suburb), and Washington-Baltimore] to 7,400 6th grade youth in a randomized design. Of these youth, 34% were Latino, 26% were White, 18% were African American, and 7% were Asian. Youth received 40 program sessions over a full school year, which involved building self-competence while becoming a teen, communication skills, mood management, refusal assertion training and managing friendships, and healthy living and being drug-free (e.g., instruction on harm of drug use). No main effects were found on alcohol use compared to a standard care control condition. There was one significant treatment by pretest use interaction. Baseline binge drinkers (drinking 3 or more times in last 30 days) in the program condition were less likely to binge drink at follow-up (27% versus 37%).

Valentine et al.⁵¹ provided a 6-month evaluation of an approximately 10-session student-counseling program among 439 middle and high school youth in Boston (Urban Youth Connection Program). Counseling sessions were provided at the schools to individuals, pairs, or larger groups by graduate student interns (in Education). Contents of the counseling were not specified. No behavioral effects were found among this sample (43% Latino, 42% African American and 12% white), in this quasi-experimental design.

Some alcohol prevention programming has emphasized a specific focus on a Latino culture. For example, La Familia is a community-based alcohol and drug use prevention program that targets Latino families with high-risk youth 6 to 11 years old.⁵² The approach involves building protective environments by engaging multiple families in the process of learning healthy lifestyles and how to build "social capital" (i.e., time and energy that adults exert to support each other in reciprocal relationships). In addition apparently the Strengthening Families Program was implemented within La Familia.⁵³ Parent-child communication, drug education, problem solving, and instruction in community responsibility were emphasized. Approximately 30 sessions of material were delivered to each family. The authors mention that over the two years the program had been in existence, 219 Hispanic youths and 61

families had been enrolled. The program retention rate was 92%. However, over the time of the evaluation only 20 youth had tried alcohol 1–10 times, and none had used alcohol more than 10 times. The behavioral effects of this study are not interpretable given the low prevalence of use, along with lack of a comparison group.

Another Latino-specific alcohol prevention program involves the development of “novelas” (episodics) for youth and their families. Specifically, a TV, radio, and storybook episodic (*La Esperanza del Valle*) was implemented to improve family communications and youth attitudes about alcohol use. Subjects were relatively poor, rural Latinos in Washington State. Latino rituals (e.g., coming of age ceremony for a teenage girl), appreciating the family as a unit, and cultural values (e.g., Dignidad-self worth, Repeto-value of rituals, Caridad-assisting other Latinos in need, *La unidad de familia*-family alliance) were included in the novelas, with an overall theme of family bonding and protection. The TV version (telenovela) consisted of 6 22-minute episodes. Airings occurred numerous times over the different communication systems (two TV stations, radio, print). There was a small improvement in alcohol attitude scores after viewing the telenovela among approximately 800 Latino youths 11 to 19 years of age. No behavioral effects are reported.⁵⁴

Litrownik, Elder, and colleagues^{32,55} involved 660 Latino migrant families in a randomized design which involved exposure to an 8-session culturally sensitive program (*Sembrando Salud*) presented by bilingual/bicultural college students (see Table 1). Youth were recruited at 22 schools into 70 total groups. Parents attended three of these sessions, and assisted in helping their children complete relevant homework assignments. Students were taught about tobacco and alcohol consequences, communication skills (listening, speaking, and refusal assertion), and development of parent-child communication skills to support youth decision-making. Cultural values such as familismo and respeto (parental respect) were incorporated into the refusal assertion role plays, and other material, to increase the cultural relevance of the material. This program was compared with one involving learning first aid and home safety. Data were collected at an immediate posttest two months after the pretest, and at one and two year follow-ups. No effects on alcohol use behavior were reported at any time point, and a favorable parent-child communication effect only was reported among families with a relatively small family size.

One other pilot study program (Project HOPE) was delivered to 130 Latino 7th and 8th graders in English as a Second Language (ESL) class⁵⁶. A-12 session drug education and career development curriculum was offered as well as team-building leadership activities and counseling by bicultural specialists. In addition, a 9-session parenting skill workshop and school advocacy for the parents of these youth was offered. A normative data comparison at an approximately 2-year follow-up showed that 11% of the project sample reported alcohol use in the last 30-days compared to 40% of a large normative comparison. However, changes in alcohol use by sample or comparability of samples were not reported. These behavioral data are difficult to interpret.

4.2.2. African-Americans. While heavy drinking is a stereotype that has proliferated about African-Americans (with Ripple or malt liquor in hand), across the life span African-Americans generally show a relatively lower level of alcohol use than whites.⁴⁵ Still, among substances of abuse, alcohol is the most abused substance among African American adolescents and adults, and its use may remain stable with increasing age (instead of decreasing as with whites; see ref. 57). Relatively low socioeconomic status, social disorganization, allostatic stresses, and relatively older age have been thought to be most descriptive of continued heavy drinking among African-Americans.

Prevention programming for African Americans has attempted to be culturally sensitive through use of materials that portray African American youth as pathfinders, provide situations that reflect African American contexts, and use language or expressions familiar to the target population³⁰. Botvin et al. tested a 25 session version (15 core, 10 booster) of Life Skills Training among a sample of 3,041 baseline 7th grade inner city youth (1,713 that received the program) from 29 schools in New York City. Of these youth, 57% were African American, 24% were Latino, 8% were Asian, 3% were white, and 7% were of mixed or other backgrounds (see Table 1). This curriculum was adapted by depicting African American characters in illustration, modifying role plays to refer to familiar situations, and adapting language. A two-group blocked randomized design was used. Results at a 1-year follow-up indicated small but significant program effects on drinking frequency, drunkenness frequency, and drinking quantity. These effects were statistically mediated by reductions in intention to drink and risk taking. At the 2-year follow-up, effects were maintained on binge drinking (those who typically consume 5 or more drinks on drinking occasion). Approximately, 5.2% versus 2.2% of control versus program youth reported binge drinking.³¹

Four culture-specific substance abuse prevention programs for African-American teens were located in the published literature.^{58,59,60,61} For example, Maypole & Anderson's⁶⁰ program ("Soulbeat") was developed to complement church and school-based programs and involves participation in plays that dramatizes the problems of drug abuse, peer pressure, parent-teacher relations, and institutional racism, followed by discussion among church members. The only data provided were training data (only 4 of 14 teens attended over half of the five training sessions), and anecdotal reports that church members enjoyed the play and discussion after it.

In Cherry et al.⁵⁹, the "NTU" (Bantu African culture word for "essence of life") program had involved 85 5th grade youth in a quasi-experimental design. The program included a "rites of passage," substance abuse prevention, education, and parenting components. The "rites of passage" component involved instruction in principles of Kwanzaa and other Africentric principles (e.g., Heshema-respect for others, Ujima-importance of family, Nia-purpose, and Ujamaa-cooperative economics) in a total of 42 group sessions and retreats, field trips or ceremonies. The substance abuse prevention component involved an average of 10 sessions on drug education. The parenting program

involved 6–8 parent education sessions with an additional 5 in-home counseling sessions. While a great deal of programming was offered, only 25% of the youth reported ever drinking wine or beer, and most held negative attitudes toward drug use, at baseline. No significant relative changes on alcohol use were found over a 1-year period. The other two culture-specific programs were family-oriented, emphasized cultural specificity in contents and language, and one contained competency-based skills education; however, neither provided a behavioral outcomes evaluation (see ref. 58, Safe Haven; ref. 61, Project SAFE).

4.2.3. Asian-Americans. There are up to as many as 60 different groups that may be classified as Asian-Americans or Pacific Islanders. Vietnamese-Americans and Japanese-Americans report the heaviest drinking. Filipino-Americans and Korean-Americans generally report somewhat less heavy drinking. Generally, Chinese-Americans report the lowest levels of drinking^{1,45}. There is no simple explanation for these differences. Generally, though, Asian-Americans show a lower prevalence of drinking than other groups, perhaps due to cultural influences, a tendency to exhibit a flushing response, or other factors; and Asian American women show much lighter levels of drinking than the men. Those persons who are subjected to rapid economic growth and changing demands on lifestyle, social isolation, and barriers related to recent immigration are relatively likely to use alcohol to excess.

Little knowledge exists on effective alcohol prevention programming among Asian Americans.⁶² Many predictors of drug use are similar across ethnic groups, including peer use and problem behavior⁶². Five prevention programs were located that provided behavioral data on Asian Americans. Project SMART utilized a quasi-experimental design in urban/suburban southern California, and compared exposure to program (there were two types, both generally social influence oriented, combined for this assessment) versus a standard care control condition. Subjects were 5,070 7th graders, of whom 6% were Asian American, 20% were African-American, 31% were Hispanic, and 43% were white. The results at a 1-year follow-up revealed program effects for alcohol use, with relatively strong effects among non-whites compared to whites. For alcohol, the program effect was strongest for Asians, with Hispanics, African-Americans, and whites successively less affected by the program³⁹. The effect size on a 3-item index of lifetime and current alcohol use was small, and no numerical measure of mean effect or percentage difference was offered regarding the alcohol ethnicity by condition-type analysis. Two other programs reviewed in this chapter that intervened on multiple ethnic groups including Asian Americans showed effects on drinking (Projects AAPT and CFI-2), whereas two other studies failed to show effects on drinking (Projects ALERT and TAPP; see Table 1). No culturally tailored study was located that focused on alcohol prevention among Asian Americans.

4.2.4. Native-Americans. Great variations in attitudes toward drinking exist across the more than 500 Native American tribes living in the United States

today. Some tribes show very low rates of drinking and high disapproval of drinking (e.g., many Southern tribes), whereas others do not (many Northern tribes). Still, Native Americans show the highest rate of alcoholism-related consequences among any U.S. ethnic-racial group, including driving and other accidents and fetal alcohol syndrome.^{43,44} Very little empirical data exists to explain differences in drinking among these many tribes, although many theories (e.g., poverty, lack of integration, or hopelessness) continue to be presented.⁴⁵ These theories might suggest that non-use of alcohol may lead to depression among youth unless some means of upward mobility or meaningfulness is offered in its place (see ref. 63).

Generalizations about Native American youth are difficult to make. Nonetheless, prevalence of teen alcohol use among these youth may not be higher than among Anglos. However, the amount of alcohol consumed by Native youths on occasions of use is relatively high with worse consequences; and family influences may be relatively important.¹

At least three comprehensive empirical reviews of alcohol prevention among Native Americans have been written.^{64,65,66} Across these three reviews, 26 different studies were located. In 20 of these studies, all subjects were Native Americans. However, only 11 studies included comparison groups and, of them, only five used experimental designs. In addition, half of the studies included sample sizes less than 100. Effects on alcohol use were reported in 13 of these studies, eight of which included comparison groups and four of which involved experimental designs.

All three reviews suggest that including cultural objects and events into programming are means to enhance effectiveness of alcohol prevention efforts. These culturally sensitive efforts include adding traditional songs, dances, ceremonies, and crafts, and involvement of the elders and other community leaders in prevention activities or decision making (also see refs. 67, 68). These efforts can energize core learning or policy change efforts.

In terms of core learning activities, skill enhancement programs show promise.^{27,44,69} For example, Carpenter and colleagues (1985) instructed a peer-managed drinking self-control program in a residential high school to 30 at risk youth. Youth were randomly assigned to three program groups, involving incremental amounts of programming (alcohol education, self-monitoring, and self-control). The investigators found decreases in drinking that were maintained over a 1-year period (with breath test validation of self-reports), but no condition differences were revealed between minimal and full program conditions, and no standard care control group was included.

Schinke and colleagues⁶⁹ found a small to moderate effect on alcohol use (use in last 14 days rating scale item; means=3.76 versus 4.92 days of use), at a 6-month follow-up, using a 10-session program that focused on bicultural competence skills. This program included 137 12-year old youth from two western Washington reservation sites, comparing program versus control conditions in a small, randomized design. The purpose was to teach youth how to cope with pressures from within the Native American community and within the majority

culture. Culturally focused program material included instruction on myths and facts about Indian drinking, involvement of peer and adult tribal speakers, and inclusion of healthful concepts such as “thinking like an elder.”

This program influenced development of the Schinke, Tepavac, & Cole study,²⁷ which studied approximately 1,400 Native American youth, and included a 3 1/2 year follow-up (also see Table 1). Schinke and colleagues used an experimental design (standard care, school-based, school plus community involvement). The skill condition included instruction in Native American legends, values, and stories (15 weekly sessions), and the community condition also involved the school-based program plus community-wide awareness efforts. Core learning activities were derived from Life Skills Training, and included problem-solving, personal coping, interpersonal communication skills, and refusal assertion, all culturally woven. No differences were found between the two intervention arms. Youths in each of the intervention arms showed less drinking at a long-term follow-up compared to the standard care condition (24% versus 30% drinking). This study involved baseline 3rd, 4th, and 5th grade Native American youth (mean age=10 years) from rural schools located in 10 reservations in North and South Dakota, Idaho, Montana, and Oklahoma.

One pilot program (the Seventh Generation—which refers to a “time of healing”) developed and evaluated a culturally focused after-school alcohol prevention program for Native American 4th to 7th graders in Denver, utilizing a quasi-experimental design (257 program youth, 121 control youth; ref. 65). The program aimed to correct inaccurate stereotypes about Native American alcohol consumption, enhance values in conflict with alcohol use, provide refusal assertion training, teach decision making, and coach making a personal commitment to not use alcohol. In addition, to enhance Indian identity, Native American values of harmony, respect, generosity, courage, wisdom, humility, and honesty were instructed (e.g., as reflected in the Medicine Wheel), as part of this 18-week program. At a one-year follow-up of this program the program group reported better decision making, less positive beliefs about alcohol use effects, a more positive self-concept, and only 5.6% of the program versus 19.7% of the comparison group, reported drinking in the last 30 days. Pretest differences across groups were minimal.

Another pilot program (Family Circle Prevention Program) took a bicultural educational approach with a strong emphasis on Native American cultural enhancement within the context of family systems education (24-week program; see refs. 65,70). Eight rural schools participated, focusing on nine to 18 year old youth (N = 1,937). A culturally focused school-based substance abuse curriculum was developed and implemented, including instruction in tribal legends, cooperative learning, and building resiliency skills. Classes also included instruction in the Ojibwe Native American language. A community curriculum also was developed and implemented with a family focus. Role modeling a “good way of life” was imparted by involvement of respected community elders, who told stories and instructed youth on how to live like they

did. The program emphasized a four-fold message regarding the collective physical, spiritual, emotional and intellectual selves. Instruction in self-esteem building, positive thinking, self-awareness, creation myths, and Native American family values was emphasized. Further, counteraction of a sense of communal powerlessness was targeted. A pretest-posttest comparison group design was employed, and a school in another community served as a comparison. The program appeared to slow the rise of alcohol use, but no difference was found in perceived likelihood of accepting alcohol from friends, and the adequacy of the comparison group was not well established.

Also, a few empowerment-centered programs have been implemented (e.g., ref. 68), which show effective action to create alternatives to alcohol use (e.g., building a teen center) but provide no data on effects on alcohol use behavior. Little policy, school based, family, or media prevention research exists that demonstrates behavioral effects on Native American youths' drinking behavior¹.

4.3. Region

While there have been many fluctuations over the last 10 years, in 2001, lifetime prevalence of alcohol use was higher among 8th graders in relatively low population density areas (Non-MSA=53.5% and Large MSA=49.1%). Likewise, prevalence of ever having been drunk was higher among 8th graders in relatively low population density areas (Non-MSA=26.7%; Large MSA=21.1%). Difference in lifetime prevalence was not evident by 12th grade (Non-MSA=78.9%, Large MSA=79.9%), but reporting having ever been drunk remained higher among rural youth (Non-MSA=66.3%, Large MSA=61.6%). This same pattern of reporting was observed for 30-day prevalence (i.e., in 12th grade; alcohol use in last 30 days=50.0% and 49.7%, and having been drunk in the last 30 days=36.7% and 30.6%, respectively in Non-MSA versus Large MSA areas). Differences were especially pronounced among youth living in rural areas in the North Central region of the country.⁴² Thus, there is some evidence of increased risk for alcohol-related problems among rural youth.

D'Onofrio⁶⁷ provided a comprehensive review of this arena. Among the problems stated in the review regarding the alcohol prevention literature included disparities in the definition of "rural." At least three have been used: (1) Standard Metropolitan Statistical Area (SMSA) < 25,000 people; (2) non-Metropolitan Statistical Area (MSA), < 100,000 people, with no economic relation with an adjoining central city; or (3) Census Bureau, < 2,500 people outside of urbanized areas. Use of these different definitions led to variation in composition and number of rural regions. For example, 15% to 30% of the U.S. can be considered to be rural depending on which of these three definitions is used⁶⁷. Even given definitional limitations, some generalities have been found across several studies. In particular, common risk factors for alcohol use and abuse exist between urban and rural sites (e.g., peer and family influences, sensation

seeking). Relative sparseness of social support and services, combined with economic hardship, may be of relative unique importance in predicting alcohol use in rural areas.

No distinctively rural prevention strategy was uncovered by D'Onofrio⁶⁷, in her search of the literature. Four recent studies not in her review also were not tailored for rural areas. A prevention study targeting alcohol prevention among 4406 rural youth in New Hampshire⁷¹ presented a 3-year follow-up that contrasted the Here's Looking at You 2000 school-based curriculum, a Parent Communication Course along with a community task force, and a delayed intervention control. The school-based curriculum was implemented in grades one through 12. Program contents, number of sessions, degree of exposure to the program, or success of follow-up tracking were not located. This study failed to find a program effect on alcohol use. The conclusion of the authors is that by the end of high school most students are drinking regularly, and the only predictor of multiple drunkenness is regular drinking in middle school and early high school.

Another recent outcome study that was implemented among primarily rural white youth was Project Northland. Perry et al.²⁶ used classroom (a total of 20 comprehensive social influence sessions), parent involvement, peer leader, print media, peer activism and activities (an average of four activities per school), and community task force components over three years of implementation. They did find effects on binge drinking (through use of growth curve analysis), and ability to obtain alcohol, but not on regular drinking. Effects were relatively strong on baseline non-drinkers (see Table 1).

A test of Life Skills Training versus Life Skills Training-plus the Strengthening Families Program (the latter, a 7-session version) recently was completed among 7th graders from 36 Midwestern rural schools (96% white). This was a 3-condition experimental study (LST+SFP, LST only, or standard care control). The study revealed at a 1-year follow-up that Life Skills training showed a 1.5% lower onset of alcohol use, and the combined condition showed an 11% lower onset of alcohol use, than the control condition.⁷² Only 38% of eligible families were recruited into SFP. Thus, while the results show potential importance of family-based prevention of alcohol onset, and other meta-analytic work suggests that the SFP program is promising,¹⁹ involvement of families in this programming remains a challenge.

One recent quasi-experimental pilot study (see ref. 72; Families in Action; 43 program participant "graduates") offered 6 2 1/2 hour family sessions to young teens and their parents, involving skill building (decision making, assertiveness, responsibility) and family systems elements. No behavioral data was presented during the one-year follow-up in this rural Michigan sample. However, Pilgrim and colleagues did report a main effect of programming on treatment seeking (talking to counselors), reporting appropriate attitudes regarding alcohol use (by boys only), and reporting improvements in school and peer attachment (for boys only). Parents reported more involvement in family counseling and school activities than did non-participants.

4.4. Socioeconomic Status

Lifetime or 30-day likelihood of having been drunk is inversely associated with plans to attend college, but is positively (although weakly) associated with parental education.⁴² Alcohol prevention programs have been implemented among youth varying widely in economic background. Prevention program effectiveness has not been found to vary as a function of socioeconomic status in these many studies (e.g., MPP, LST, TND, and AAPT).

Only four published studies (and one in press) were located that reported placing a focus of their alcohol prevention program on economically disadvantaged youth (Werch and colleagues' work, STARS for Families, Preparing for the Drug Free Years (PDFY), Northland, Sembrando Salud, and T:S). Werch and colleagues' STARS for Families program was implemented with 211 economically disadvantaged youth at urban, suburban, and rural schools in northern Florida.⁷³ This program was developed for middle and junior high school youth (11 to 15 years old), and involved a nurse health care consultation (for youth who are considering being on a sports team at school), key fact postcards sent to parents, and four family take-home lessons. STARS for Families found effects on alcohol use behavior that vanished by 1-year follow-up.

PDFY involved a 5-session multi-media skills-training program for parents of 7th grade, white youth at 33 relatively poor Midwestern rural schools (see ref. 25). Project Northland focused on 20 school districts in Northeastern Minnesota, from poor, rural communities. Northland and PDFY did find effects that lasted several years (see Table 1). Sembrando Salud, presented previously in this chapter, involved Hispanic migrant families and failed to show effects on alcohol use. T:S (see ref.) was CD-ROM based and did achieve effects among poor Hispanic and African American youth on 30-day likelihood of getting drunk. However, this program did not impact 30-day use or lifetime use of alcohol. Since youth were 8–10 years old at baseline, the long-term importance of these results are not clear (see Table 1). None of these programs were developed with material that reflects the perspective or stories of poor people.

5. Summary of the Outcomes of Programs for Special Populations

This section provides a brief summary regarding the status of alcohol abuse prevention among the different populations described in this chapter (aside from socioeconomic status). A total of 16 of the 19 long-term studies (Table 1) contained at least some element relevant for special populations. Also, 18 other studies were not presented in Table 1, but were discussed within specific population sections of the text (five on Hispanics, four on African-Americans, one on Asian-Americans, five on Native Americans, and three on rural regions). Taken together, subsets of these 34 studies were used to generate an overall sense on whether previously developed programming may be impacting on each population.

Regarding Hispanic youth, of 14 studies total, there were 10 studies delivered to mixed ethnic samples (seven of the 19 long-term studies in Table 1 and 3 studies discussed only in the text). Four studies (one in Table 1 and three discussed only in the text) targeted only Hispanics. Seven of the programs that intervened on multiple ethnic groups showed at least 1-year follow-up effects on drinking (Projects AAPT, CFI, CFI-2, Quest, SMART, T:S, and TND). Three mixed-group studies failed to find effects (Projects ALERT, TAPP, and the culturally tailored Urban Youth Connection). Two of the Hispanic-only programs did not report behavior effects (La Familia, La Esperanza del Valle), a third well-designed study failed to find effects (Sembrando Salud), and a fourth program's effects were not interpretable (Project HOPE).

Regarding African-American youth, there were 11 studies delivered to mixed ethnic samples (eight of the 19 long-term studies in Table 1 and 3 studies in the text). Four studies (in the text) targeted only African-Americans. Seven programs that intervened on multiple ethnic groups showed at least 1-year follow-up effects on drinking (CFI, CFI-2, MPP, Quest, SMART, T:S, and TND). Four mixed-group studies failed to find effects (Projects ALERT, TAPP, AMPS, and the Urban Youth Connection). Four African-American only programs were located (Soulbeat, NTU, Safe Haven, and Project SAFE), but behavioral outcome data were provided in only one of them (NTU), failing to find effects on alcohol use.

Regarding Asian-American youth, there were 5 studies that were delivered to mixed ethnic samples (four of the 17 long-term studies in Table 1 and one study in the text), and no studies that targeted only Asian-Americans. Three programs that intervened on multiple ethnic groups showed effects on drinking at a 1-year follow-up (Projects AAPT, CFI-2, and SMART). Two mixed-group studies failed to find effects (Projects ALERT and TAPP).

Regarding Native American youth, among the studies discussed specifically in the chapter, one study involved a mixed ethnic sample (one of the 19 long-term studies in Table 1), and 6 studies that targeted only Native-Americans (one of which is also in Table 1). One program that intervened on multiple ethnic groups may have exerted effects on drinking among Native Americans (Project Northland, although the Native American sample was too small to analyze program effects as a function of white versus Native American ethnicity; refs. 4,26). Two small-sampled culturally tailored Native American focused pilot studies reported finding effects (see refs. 69,76), and two did not report data on behavioral effects.^{68,70} One quasi-experimental trial of culturally-focused programming (Seventh Generation) found strong effects at a 1-year follow-up on 30-day alcohol use.⁶⁵ Also, one recent large experimental trial that focused on Native Americans showed a 20% relative reduction in recent alcohol use over a 3 1/2 follow-up period (see ref. 27), using a bi-culturally enhanced life skills training approach. Overall, little rigorously designed research on alcohol prevention has been completed with Native Americans.

Regarding rural region, seven studies were delivered in multiple regions that included rural regions (Projects CPRP, LST, MPP, ALERT, AMPS and MMCSHE in Table 1, and STARS for Families, in the text). Six studies were

delivered only in rural regions [Northland, BLSP (for Native Americans), and PDFY in Table 1, and HLY2000 (see ref. 71), SFP+LST, and Families in Action, in the text]. In the rural regions-focused programming, however, rural-tailored materials were not developed. Among these 13 studies, seven programs showed effects on drinking at a 1-year follow-up (Projects BCSP, CPRP, LST, LST+SFP, MPP, Northland, and PDFY). Five studies failed to find lasting effects (Projects ALERT, HLY2000, MMCSHE, STARS for Families, ref. 71). One pilot study did not report behavioral data (Families in Action). Alcohol prevention programming as currently developed appears applicable for rural populations, though no rural-specific program has been evaluated.

5.1. *Summary of the Summary*

These studies also can be examined using “study” as a single, exchangeable unit, to explore effects on alcohol use at a 1-year follow-up. For Hispanics, 12 of 14 programs reported behavioral data. Of the 12 programs, 58% found preventive effects. For African-Americans, 12 of 15 programs reported behavioral data. Of these 12 programs, 58% found preventive effects. For Asian Americans, all five programs reported behavioral data and 60% of the programs found preventive effects. For Native Americans, five of 7 programs reported behavioral effects. All five programs found preventive effects. Finally, 58% of the programs conducted at least in part in rural regions showed preventive effects (12 of 13 programs reported behavioral data). The pattern of these findings suggests that approximately 60% of currently developed alcohol prevention programming show effects on the alcohol use behaviors of different special populations. Programs that include provision of bicultural education along with life skill material appear to be particularly promising.

Most of these 34 studies were school-based, though 15 involved family involvement or took a family-focus (MPP, Northland, BLSP, La Familia, Sembrando Salud, Soulbeat, NTU, Safe Haven, Project SAFE, Family Circle Prevention Program, HLY2000, LST+SFP, STARS for Families, T:S, and PDFY). In addition, five studies actively involved visual, auditory, or print media (MPP, La Esperanza del Valle, Northland, PDYF, and T:S). Finally, four programs also emphasized environmental strategies (MPP, Northland, BLSP, and Stiver’s program).⁶⁸

6. Future Research Needs

The impetus for studying special populations stems from health disparities. Minority groups, females, those in rural regions, those who are relatively poor, are persons for whom relatively less is known (etiology), less has been developed (effective prevention programming), and less has been delivered (reduced access or reach). By definition, etiology, prevention development, and implementation-related research are needed on special populations.

6.1. *Etiology*

When studies have examined the predictors of problem drinking, generally the same protective and risk factors operate across gender, ethnicity, region, and socioeconomic status (e.g., ref. 77). Relatively low expectations for success, low self-esteem, hopelessness, peer use, family use or tolerance of use, low school achievement, stress, tolerance of deviance, perceived availability and safety of alcohol, and lack of involvement in adult-supervised, pro-social activities predict drinking across groups. However, as presented previously in this review, their relative impact may differ as a function of the subject population (e.g., males have relatively worse refusal assertion skills than females). Also, currently used variables explain a lower percentage of the variance in the behavior of special populations than mainstream populations⁷⁸. Importantly, there are some unique variables that should be considered. For example, ethnic pride may be important as a predictor (protective variable) of drinking in disadvantaged ethnic groups. A recent study found that ethnic identity (e.g., having a lot of pride in one's ethnic group and its accomplishments) moderated the effects of social skills on alcohol use. Also, in another statistical model in that study containing perceived competence (e.g., self-management and persistence) and ethnic identity as predictors, ethnic identity directly and inversely predicted alcohol use among a sample of young minority adolescents. In this sample, 60% were African-American and 40% were Latino⁷⁹.

Another consideration is that delineation of special populations is certain to change over time, as recognition of lack of access on the basis of different population groupings, or as changes in the social-geographical climate, come to pass. For example, most drug abuse prevention work has been completed with general population, middle school youth. Only a few researchers have investigated older teens that may be potential dropouts among a regular high school population, attending alternative schools, or otherwise are at the peak age for drug experimentation. Certainly, issues pertaining to formal education and work aspirations, family creation, and increasing self-identification with an alcohol-centered lifestyle, are of relative importance for the study of older teens. They may become formally recognized as a special population in the near future.⁸⁰

6.2. *Prevention*

Social influences programming or comprehensive life skills training is considered the most effective programming currently available, and may be relatively effective for minority youth compared to whites.¹⁷ However, as previously mentioned, the effectiveness of this programming on alcohol use is relatively weak compared with other drugs². Also, most drug abuse prevention research has been conducted with white majority populations. For example, in Tobler and colleagues'¹⁷ review of 207 drug abuse prevention program studies, only 42 studies involved greater than a 50% non-white majority (20% of the studies). Much research is needed on the prevention of alcohol use among special populations.

Since alcohol use is relatively widely available to youth, among drugs of abuse, there is a great need to evaluate further the effects of supply reduction approaches in special populations. Both nondiscriminatory policies and empowerment motives may be important mediators of the effects of these types of programs. In addition, it is not clear why culturally focused components added to effective demand reduction programs increase their efficacy. Potential mediators (e.g., increased receptivity versus increased ethnic pride) should be examined. Clearly, much more research is needed among minority populations both in mixed-ethnic group settings, and in mono-ethnic settings.

At this point in time, it is not clear what would be the most effective composition of ethnic group-oriented programming. One possibility is that deep structure culturally appropriate programming,⁵³ which considers critical values and traditions of a culture in specific social sectors, might be most effective. However, almost none of this type of programming has provided an evaluation of behavioral effects. A second possibility is that surface structure culturally appropriate programming, which considers and adapts graphic material and names, as examples, is sufficient to make ethnic-oriented programming maximally effective.⁵³ Current evaluations of such programming are promising (e.g., see refs. 30,31). One caveat is that there may be a tendency for implementers to add ethnic-specific elements of programming, while reducing the dosage provided of the evidence-based program material. This change in the programmatic soup's ingredients could reduce the program's overall effectiveness.⁵³

A third possibility is that generic programming is relatively effective in the prevention of alcohol use, that interactive contents permit incorporation of ethnic-specific features.⁷⁸ Indeed, in any given community, diversity exists among members of ethnic groups and between ethnic groups, and sensitivity to each other's differences may be imperative to mobilize unifying action that prevents alcohol use. If a program can't address all groups involved in the programming, then perhaps a more generic form is needed. It would appear that generic programming is effective across gender, ethnicity, socioeconomic status, and region. Regarding any special population, a direct test of these three program formulations (deep structure, surface structure, or generic) has not yet been completed.

Also, most programs described have been delivered to young teens. Considerably more work should be entertained with preteen youth that involves long enough follow-ups to detect alcohol behavioral effects, as well as with older teens, and young adults. Programming for older teens as a new special population category needs continued thought. They tend to reject some of the strategies employed with young teens (e.g., refusal assertion training), and are more self-motivated than is assumed within social influence-type programming.⁸⁰ A different model of programming is needed. One such model is illustrated in Project TND. It might be referred to as a motivation-skills-decision model. Youths' motivations are harnessed against alcohol abuse. They learn that (a) they don't have to yield to stereotypes of others and use alcohol, (b) they learn to place partly-formed specific self-attitude ratings within a more

general self-rating as a moderate, and (c) they learn to value their health as a means to achieving life goals. Youths are provided with skills to change, including (a) effective listening, (b) effective communication skills, and (c) self-control skills. Finally, youth learn to make a decision about their behavior, based on motivation, skills and consequences information. Consequences information includes (a) myths people hold about drug use, (b) the insidious nature of life consequences of alcohol abuse, and (c) the effects of alcohol abuse on others. Motivation and skills material is integrated by use of a decision-making process. While effects of TND are promising (i.e., 9% relative reduction of alcohol use has been observed across three experimental trials), effects do dissipate by two-year follow-up. Possibly, a mix of both prevention and cessation material are needed to maintain program effects among older teens.²⁸ Consideration of other special population types adds complexity, as these special populations might cross in various ways (e.g., poor rural African American older teens), and a wide spectrum of continued work is demanded.

6.3. *Implementation and Diffusion*

Ethnic minorities have relatively less access to effective programs,⁷⁸ as do poor sectors of society and rural populations.⁶⁷ Certainly, even with good contents, without the ability to reach a special population, programming will not be of any practical assistance. Funds are needed to be able to offer the programming, and institutionalization of programming is needed to be able to keep programming going a long time. Also, without ethnic-minority representation in program development or delivery, the target group may not be receptive to the program, and implementation will fail as well.⁷⁸ Very little implementation and dissemination research has been conducted on any drug (with any population) including alcohol use.⁸¹

7. Conclusions

Special population research is in its infancy. Consideration of unique variables relevant to gender (e.g., sex roles, hormonal expression), ethnic group (e.g., skin color, acculturation, discrimination, active coping), region (e.g., low density of institutional units, transportation issues), and socioeconomic factors (e.g., poverty, survival, crime) are needed to provide a more thorough assessment of etiologic factors. Participatory research involving extensive involvement of members of the special population is needed to make programming palatable, if not more effective, for its members. Consideration of how to make programming fresh and "hard wired" to special population delivery systems is needed. Certainly, a reconsideration of appropriate and inappropriate patterns of drinking is needed across groups to delineate more safe patterns of intake, or promote temperance.

ACKNOWLEDGMENTS: This study was supported by the Research Center for Alcoholic Liver and Pancreatic Diseases (P50 AA11999) funded by the National Institute on Alcohol Abuse and Alcoholism, and by grants from the National Institute on Drug Abuse (DA01070, DA07601, DA13814, and DA16094).

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