Numerous research studies have shown that sociocultural factors influence the initiation and continued use of alcohol and tobacco among adolescents and adults. Few studies have examined the effects of sociocultural factors on the tendency of smokers to drink and drinkers to smoke. However, the limited evidence available suggests that such factors exist and that the strength of the association between alcohol and tobacco use behaviors varies with the levels of alcohol use. Public health interventions focused on concurrent tobacco and alcohol use could yield further reductions in the morbidity and mortality associated with these substances. 

Key words: sociocultural AODC (causes of alcohol or other drug [AOD] use, abuse, and dependence); sociocultural aspects of AOD use; smoking; AOD use initiation; adolescent; family as an AODC; peer group; adult; AOD abstinence; public health

Research indicates that sociocultural factors influence the initiation and continued use of alcohol and tobacco among adolescents and adults. Few studies have examined the effects of sociocultural factors on the tendency of smokers to drink and drinkers to smoke. However, the limited evidence available suggests that such factors exist and that the strength of the association between alcohol and tobacco use behaviors varies with the levels of alcohol use. Public health interventions focused on concurrent tobacco and alcohol use could yield further reductions in the morbidity and mortality associated with these substances.

This article first reviews research on the sociocultural factors that influence whether adolescents begin smoking and/or drinking. The article then discusses similar mechanisms that may sustain alcohol and tobacco use among adults. Some sociocultural factors influence smoking and drinking across much of the adult population. Other factors that predict continued tobacco use among adults might differ for alcohol abstainers, moderate drinkers, heavy drinkers, and recovering alcoholics.

Although this article discusses adolescent and adult populations separately, a strong, positive relationship exists between alcohol and tobacco use in both age groups. Results from the 1997 National Household Survey on Drug Abuse (Substance Abuse and Mental Health Services Administration [SAMHSA] 1998) indicated that among the respondents ages 12 to 17 as well as ages 18 and older, current drinkers were much more likely to be current smokers compared with former drinkers or people who had never consumed alcohol (i.e., “never drinker”) (see table 1). The survey results also showed an especially strong relationship between binge drinking (defined as consuming five or more drinks per occasion) and current smoking among adolescents. Adolescents who reported engaging in binge drinking within the past 30 days were more than five times more likely to smoke than were adolescents who denied participating in binge drinking (76.8 versus 14.1 percent). Adults who reported episodes of binge drinking within the past 30 days were approximately twice as likely as were non-binge-drinking adults to be current smokers.

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Initiation and Continued Tobacco and Alcohol Use Among Adolescents

The strong association between binge drinking and smoking among adolescents may be attributable, in part, to the fact that both adolescent alcohol use and tobacco use share a number of sociocultural risk factors. Researchers have found that these factors—including family and peer influences, demographics, advertising, economics, and alcohol and tobacco availability—are associated with adolescents’ initial and continued tobacco and alcohol use.

Family and Peer Influences

Adolescents are more likely to smoke cigarettes if their parents (Gritz et al. 1998; Flay et al. 1998), siblings (Mittelmark et al. 1987), or friends (Flay et al. 1998; Conrad et al. 1992) smoke. In addition, adolescents whose friends, siblings, or parents smoke are more likely to smoke at an earlier age than are other adolescents (Unger and Chen 1999). Adolescent alcohol use is also associated with drinking by peers (Botvin et al. 1998), parents (Brook et al. 1986), and siblings (Rittenhouse and Miller 1984). Together these findings demonstrate that family and peers exert similar influences on adolescent smoking and drinking.

Among teens, parent-child relationship factors—such as limited or poor-quality familial attachments; low levels of parental supervision and strictness; inadequate parental monitoring; and lack of parental affection, concern, and involvement—have also been related to smoking (Conrad et al. 1992; Biglan et al. 1995; Hundleby and Mercer 1987; Brook et al. 1983) and drinking (Arkin and Funkhouser 1990; Scaffa 1998). Data from the Adverse Childhood Experiences Study have further shown that any one of eight childhood stressors, including verbal, physical, or sexual abuse, significantly increases both a youth’s risk of smoking by age 14 and continued tobacco use as an adult (Anda et al. 1999).

Demographic Factors

National student surveys show that white students, overall, are more likely than Hispanic and African-American students to report engaging in smoking (Kann et al. 1998; An et al. 1999) or drinking (SAMHSA 1998) within the previous 30 days. Hispanic students also are more likely to smoke (Kann et al. 1998) or drink (SAMHSA 1998) compared with African-American students. In addition, males generally are more likely than females to report current and frequent smoking (Kann et al. 1998) as well as current and heavy drinking (SAMHSA 1998).

In their review of multiple studies on teen smoking, Conrad and colleagues (1992) found that lower socioeconomic status consistently predicted smoking onset among teens. D’Onofrio (1997) found that alcohol use was also disproportionately concentrated among economically disadvantaged youth. Similar demographic factors have also been associated with adolescent smoking and drinking and may contribute to the relationship between smoking and drinking among adults.

Advertising

In a study of adolescents who, when first interviewed, had never engaged in smoking, Pierce and colleagues (1998) found at the 3-year followup that having a favorite cigarette advertisement as well as possessing or being willing to use a tobacco promotional item at the

| Alcohol Use History | Current Smoker (%) | Former Smoker (%) | Never Smoker (%) |
|---------------------|--------------------|-------------------|-----------------|
| **Ages 12 to 17**   |                    |                   |                 |
| Current drinker     | 58.1               | 23.4              | 18.5            |
| Former drinker      | 23.8               | 37.9              | 38.3            |
| Never drinker       | 05.6               | 11.2              | 83.2            |
| Binge drinking* in past 30 days |                |                   |                 |
| Yes                 | 76.8               | 17.9              | 05.3            |
| No                  | 14.1               | 18.8              | 67.2**          |
| **Age 18 and older** |                   |                   |                 |
| Current drinker     | 36.9               | 45.6              | 17.5            |
| Former drinker      | 27.1               | 50.8              | 22.1            |
| Never drinker       | 13.4               | 18.8              | 67.9**          |
| Binge drinking in past 30 days |            |                   |                 |
| Yes                 | 54.5               | 35.7              | 09.9**          |
| No                  | 26.1               | 45.1              | 28.7**          |

*Binge drinking was defined as five or more drinks on one occasion.

**Values shown are from weighted analyses. Due to rounding, some row totals will not sum to exactly 100.

SOURCE: Substance Abuse and Mental Health Services Administration 1997.
The ease of obtaining cigarettes also influences smoking among adolescents. Both the general availability of cigarettes and offers of cigarettes from parents and siblings have been found to predict smoking onset among teens (Conrad et al. 1992). Vending machines increase the availability of tobacco products to youth and are used more often by children and adolescents than by the general public (U.S. Department of Health and Human Services [USD HHS] 1994).
declined in 18 of 19 studies and that smoking prevalence declined in 17 studies. Both workplace and household smoking restrictions have also been associated with higher rates of quit attempts, lower rates of relapse among smokers who attempted to quit, and higher rates of light smoking among current daily smokers (Farkas et al. 1999). Another study compared changes in smoking prevalence among smokers employed at smoke-free hospitals with changes in smoking among smokers in the community who were employed at non-smoke-free workplaces. Beginning with the smoking ban and continuing for 5 years after implementation, statistically significant differences in the postban quit ratio were observed between smokers employed at the smoke-free hospitals and their counterparts in the community. The overall difference in postban quit ratios remained significant even after adjustment for socioeconomic, demographic, and smoking-intensity variables (Longo et al. 1996).

The extent of tobacco and alcohol use may also be influenced by stress. One theory suggests that people are more likely to use drugs, especially multiple drugs, when unable to cope with stressful situations (Wills and Shiffman 1985). A 1995 review of the literature concluded that adults often use alcohol and tobacco for similar reasons, but the coping functions for use are more likely to involve distraction and forgetting, whereas the coping functions for smoking were related to increased attention and concentration (Wills and Cleary 1995).

A recent review of the “smoke to cope” literature portrays a more complex relationship between stress and smoking (Parrott 1999). Although most smokers report that cigarettes help them relax, several studies indicate that smokers are more anxious overall than are nonsmokers and that former smokers who maintain complete nicotine abstinence for at least 6 months report significant reductions in their stress levels. These findings suggest that nicotine-dependent smokers must smoke on a regular basis to cope with the withdrawal symptoms experienced when nicotine blood levels drop between cigarettes. Smoking is thus a major contributor to stress and a conditioned response to adverse moods.

Although much has been learned about sociocultural influences on adult tobacco use, the available literature does not satisfactorily explain the substantial variability in prevalence of smoking within the alcohol use levels displayed in table 1. Some insights on possible factors associated with this variability can be obtained by considering various levels of alcohol use sequentially.

**Tobacco Use Among Adult Lifetime Alcohol Abstainers**

Adults who have rarely or never consumed 12 or more drinks per year have tobacco-use patterns that differ markedly from moderate drinkers, heavy drinkers, and recovering alcoholics or problem drinkers. As the data in table 1 indicate, smoking is relatively uncommon among nondrinkers. Factors that discourage tobacco use in this group have not been studied extensively to date, although the tendency for positive health behaviors to cluster in individuals is well established. In addition, several religious groups, including Mormons and Seventh Day Adventists, strongly oppose the use of both alcohol and tobacco (Jensen et al. 1996).

**Tobacco Use Among Adult Heavy Drinkers**

Smoking is especially prevalent among heavy drinkers, including people diagnosed with alcohol abuse or alcoholism. Table 2 summarizes the results of 17 studies published from 1967 to 1993 that reported the prevalence of tobacco use among alcoholics recently admitted for treatment. Until the early 1990s, about 90 percent of all such patients were regular smokers. More recent data suggest a marked decline in smoking prevalence in this population. Studies reported in 1996 (Hurt et al. 1996) and 1997 (Stuyt 1997) reported tobacco use rates among alcohol treatment patients of 75 and 71 percent, respectively.

1The authors contend that hospital employees comprise an appropriate study population and cite evidence that hospital employees smoke at rates equivalent to people in the general population. The study excluded physicians and included managerial, clerical, blue-collar, skilled, and unskilled workers.

2A drink is considered to be 12 ounces of regular beer, 5 ounces of wine, or 1.5 ounces of 80 proof distilled spirits (USDHHS and USDA 1995).

3Alcohol abuse and alcoholism are conditions defined according to specific criteria published by the American Psychiatric Association (APA) in its Diagnostic and Statistical Manual of Mental Disorders (DSM). The most recent edition (DSM–IV) defines alcohol dependence as a cluster of symptoms that includes continued drinking despite significant alcohol-related problems. Alcohol abuse is defined as repeated drinking in harmful situations with negative consequences (APA 1994).
Stress may influence levels of both smoking and drinking among heavy drinkers, as it does among moderate drinkers (Wills and Shiffman 1985). In addition, depression has been associated with smoking and severity of nicotine dependence (Ziedonis et al. 1998) and with alcohol dependence, although research has not determined whether alcohol dependence precipitates depression or results from it (see Schuckit 1996).

In a national survey of adults, smoking and drinking were both associated with self-reported negative moods (e.g., depression, loneliness, restlessness, boredom, and feeling upset) (Schoenborn and Horm 1993). Women who scored the highest on a scale of negative moods were almost three times more likely to smoke than were women who had a score of zero. Among men, the odds of smoking also increased with negative mood scores. Women with high negative mood scores were not significantly more likely to smoke than those with no negative mood scores. Negative mood scores were four times more likely to combine smoking and heavy drinking than were men with no negative moods. The authors concluded that emotional health status and addictive behaviors were “sufficiently related to warrant increased public health initiatives that attempt to address both issues together rather than one at a time” (Schoenborn and Horm 1993, p. 8).

Tobacco Use Among Recovering Alcoholics

Although several studies have reported encouraging data on the ability of recovering alcoholics to quit smoking (Sobell et al. 1995; Bobo et al. 1986), randomized clinical trial data suggest that most smokers who receive intensive treatment for a history of alcohol abuse or alcoholism continue to smoke long after learning to control their drinking. In addition, many continue to smoke heavily. In a longitudinal study of 575 adult smokers who completed intensive residential treatment for alcohol problems in the Midwest from 1995, 92 percent were still daily smokers 12 months after discharge from treatment (Bobo 1997). About one-half (49 percent) smoked an average of one or more packs of cigarettes per day.

Historically, three sociocultural mechanisms have influenced continued smoking among recovering alcoholics and problem drinkers. The first of these can be attributed to the widespread impact of Alcoholics Anonymous (AA) on recovering alcoholics in the United States. In addition to its well-known 12-step program, AA uses a number of pithy aphorisms to guide everyday behavior. One of the most important of these is “First things first.” AA teaches its members that their primary responsibility is to become and remain sober. Often, members are advised to avoid...

### Table 2: Prevalence of Smoking in Various Samples of Adults With Histories of Heavy Drinking

| Year | Authors | Sample (n) | Smokers (%) |
|------|---------|------------|-------------|
| 1967 | Dreher and Fraser | 103 alcoholics in outpatient treatment | 97 (males) 91 (females) |
| 1972 | Walton | 130 male alcoholics in treatment | 97 (males) |
| 1986 | Kozlowski et al. | 1,142 alcoholics in treatment in Canada | 86 (males) 82 (females) |
| 1989 | DeSoto et al. | 312 alcoholics recruited from Alcoholics Anonymous | 98 (males) 92 (females) |
| 1990 | DiFranza and Guerrera | 77 alcoholics in treatment | 83 (combined)* |
| 1993 | Joseph et al. | 176 male alcoholics admitted before implementation of tobacco control policy in the facility | 82 (males) |
| 1995 | Batel et al. | 325 male and female outpatients in an alcohol treatment program | 88 (combined)* |
| 1996 | Hurt et al. | 845 alcohol treatment patients | 75 (combined)* |
| 1997 | Stuyt | 174 alcohol treatment patients | 71 (combined)* |

*Data were not reported separately by gender.
tackling new challenges, like quitting smoking, until they are confident about their ability to remain sober even when under additional stress. A popular book published by AA uses a tobacco-related anecdote to illustrate this principle (AA 1976). The story reviews the case of an alcoholic whose wife “nagged” him to quit smoking after he had successfully stopped drinking. Unfortunately, the reader learns, “her intolerance finally threw him into a fit of anger,” which resulted in his becoming drunk (AA 1976, p. 135). This vignette was used for many years to justify cigarette smoking during AA meetings. Although nonsmoking AA meetings are now available in most communities, they were rare until the mid-1980s.

Tobacco use policies at alcohol and other drug treatment centers constitute a second sociocultural factor that likely influences smoking among recovering alcoholics and problem drinkers. A 1982 survey of alcohol treatment inpatient facilities in Washington State found that more than one-half (53 percent) of the treatment staff believed a recovering alcoholic should not be encouraged to quit smoking until he or she had been sober for at least 1 year (Bobo and Gilchrist 1983). About one-fourth (23 percent) of the treatment staff indicated that they did not believe an alcoholic should ever be encouraged to quit smoking. Opinions were strongly associated with a personal history of smoking and alcoholism. Staff members who identified themselves as recovering alcoholics and current smokers were far less likely than staff members who self-identified themselves as nonsmokers with no histories of alcohol problems to report that they had ever personally encouraged an alcoholic to quit smoking.

Paralleling the profound shift in attitudes toward smoking that occurred across most U.S. communities in the 1980s, a marked change in acceptance of tobacco use was evident in alcohol and other drug treatment facilities by the early 1990s. A 1991 survey of 771 treatment personnel in Nebraska found that only 3 percent of the treatment personnel actively discouraged patients or clients who wanted to quit smoking (Bobo et al. 1995). However, only 35 percent of the staff members said that they thought recovering alcoholics who smoked should be encouraged to quit early in their sobriety. The most common reason given for a reluctance to encourage smoking cessation was the concern that the stress of trying to quit might adversely affect the patient’s ability to remain sober.

To address this concern, during 1995 researchers conducted a randomized community intervention trial in 12 residential treatment facilities in Iowa, Kansas, and Nebraska (Bobo et al. 1998).

The study clearly showed that alcoholic patients who smoked could benefit from smoking cessation counseling.

Patients in one-half of the treatment centers received a four-part intervention to encourage smoking cessation. Patients in the remaining six centers (i.e., the control group) received the usual care provided by those facilities. The results of the study clearly showed that alcoholic patients who smoked could benefit from smoking cessation counseling. After 1 year of followup, 43 percent of the patients who were encouraged to quit smoking were still abstaining from alcohol, compared with 29 percent of the patients in the control centers. These findings do not suggest that smoking cessation efforts among recovering alcoholics will be free of stress, but they do indicate that alcohol treatment facilities can safely provide a sociocultural climate that explicitly encourages smoking cessation. Findings from other studies have shown that instituting smoking cessation programs in alcohol treatment centers is acceptable to treatment staff and does not adversely affect patient enrollment (Hurt et al. 1994; Joseph et al. 1993; Patten et al. 1999).

Evidence of a third sociocultural influence on tobacco use among recovering alcoholics and problem drinkers was suggested by an unanticipated finding in the 12-site randomized community intervention trial previously described. Two of the twelve sites (one tobacco intervention site and one control group site) restricted admission to their programs to alcoholics who were either Native American or Alaska Native. The smoking cessation rates among patients in these programs were nearly twice as high as those observed among all other racial and ethnic groups in the study (Bobo 1997). Treatment staff in the Native American programs attributed the difference in quit rates to frequent discussions with their patients about the sacred role of tobacco in many Native American communities and its traditional use in various religious ceremonies.

Public Health Implications

The information reviewed in this article on the sociocultural influences on smoking and drinking suggests several strategies that health care providers and public health practitioners could use to discourage alcohol and tobacco use and alcohol abuse. In addition to ongoing efforts to restrict adolescent exposure to tobacco and alcohol advertising and discourage sales of these products to minors, intervention efforts targeted toward the well-established association between smoking and drinking could prove beneficial. People with histories of problem drinking should be screened for tobacco use, informed of the added health risks of tobacco use for heavy drinkers, and encouraged to quit smoking. New media campaigns to educate the general public on the additional dangers of smoking for moderate and heavy drinkers would also be appropriate. Dedicating some public health research dollars to the development of smoking cessation programs tailored to the needs and interests of recovering alcoholics would also be useful. The National Institute on Alcohol Abuse and Alcoholism has supported some work in this area,
but many important clinical questions remain unanswered.

Other innovative strategies could be considered as well. State legislatures could be urged to pass laws prohibiting smoking and tobacco purchases in bars and taverns. The entertainment and advertising industries could be encouraged to avoid images of people smoking cigarettes in scenes portraying alcohol use and vice versa. And finally, alcohol treatment facilities could be instructed to completely ban all tobacco use on their premises and require all their employees to be nonsmokers.

Conclusion

This article has reviewed key findings from the large body of literature on sociocultural mechanisms that encourage tobacco and alcohol use among adolescents and adults. Many of these mechanisms exert similar effects on both alcohol and tobacco use behaviors. Sociocultural factors that encourage smokers to drink and drinkers to smoke have not received extensive study, but they may account for some of the substantial variation in adult tobacco use rates seen among different levels of alcohol consumption.

Although studies based on samples of problem drinkers and recovering alcoholics suggest a recent weakening of the association between drinking and smoking that is consistent with changes in societal attitudes toward tobacco and standards of care in alcoholism treatment facilities, the connection may continue to be quite strong among some populations (e.g., polydrug users and depressed adults). “Heard-core” smokers and drinkers may particularly benefit from additional research on sociocultural mechanisms that strengthen the association between these behaviors. Such research may identify new opportunities for treatment and prevention and promote changes in public health policy that would further discourage concurrent use of tobacco and alcohol.

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