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# A Review of the Associations of Alcohol Consumption with Race/Ethnicity, Religion, and Socioeconomic Status

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**A Review of the Associations of Alcohol Consumption with Race/Ethnicity, Religion, and**

**Socioeconomic Status**

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Abstract

This literature review explores the relationship between alcohol use and different demographic variables, specifically race/ethnicity, religion, and socioeconomic status. The aims of the paper are: 1) define alcohol use and discuss the physical and mental health implications of alcohol use and 2) explore the associations of alcohol use with religiosity, race/ethnicity, and socioeconomic status. Thirty four articles that directly address the correlates of race/ethnicity, religion, SES, health, and alcohol consumption were reviewed after extensive literature search. Studies indicate that religious individuals consume less alcohol than non-religious individuals. European Americans and Native Americans have the highest rates of alcohol consumption. Socioeconomic status proves to be the most inconsistent of the demographic variables studied; results vary about the effects of socioeconomic status on alcohol use. Gaps in current literature, the need for consistency in vocabulary, and focus for future studies are discussed.

*Keywords:* alcohol use, alcohol consumption, race, ethnicity, religion, socioeconomic status, demographics

## A Review of the Associations of Alcohol Consumption with Race/Ethnicity, Religion, and Socioeconomic Status

Alcohol consumption is a significant aspect of American culture. When consumed in excess, alcohol can lead to many short- and long-term health risks. These include injuries and accidents, violence, unprotected sex, increased risk of birth defects for pregnant women, alcohol poisoning, liver disease, cancer, neurological damage, social problems, and mood and emotional disorders (Centers for Disease Control and Prevention (CDC), 2010). Many Americans drink without considering the possible health consequences. It is important for researchers to know the risk factors for excessive alcohol use so they can begin to understand how to best resolve alcohol abuse problems.

Much of the research on alcohol use and abuse has focused on whites, and ignored cultural influences like race/ethnicity and religion (Caetano, Clark, & Tam, 1998; Clark, & Tam, 1998). Research has also focused on sociodemographic characteristics related to alcohol use, but to date, no research exists that examines in-depth the literature on religiosity, socioeconomic status (SES), and race/ethnicity. There are many correlations between race/ethnicity and religious practices, as racial groups often have religious beliefs embedded in their culture and history. Similarly, racial and ethnic groups often have similar SES with members of the same racial group. For example, European-Americans typically earn higher salaries than other racial groups, and constitute the majority of the highest income bracket. This study will focus on each of these sociodemographic variable's relation to alcohol consumption.

This literature review will provide an in-depth examination of the ill effects of alcohol consumption as well as the relation of alcohol consumption with some of its correlates:

religion, ethnicity, and SES. The primary aims of the study are to: 1) present a review of current literature on the physical, mental, and sociocultural effects of alcohol consumption and 2) examine how religion, race/ethnicity, and SES are a) interrelated with each other and b) related to alcohol consumption. By exploring how demographic factors relate to alcohol use, researchers will gain a greater understanding about how demographics influence choices and lifestyle behaviors and be able to cater effective prevention programs accordingly. Gaps in the current literature will be identified and ideas for future studies will be presented.

### **Methods**

Much literature exists on alcohol consumption and demographic factors. Institutes such as the CDC and NIAAA provide current statistics on alcohol abuse and dependence and outline the negative health consequences of heavy alcohol consumption. To find more specific information on health consequences from drinking, the researcher used the phrase “alcohol consumption” with the following keywords: morbidity and mortality, health, and mental health disorders. To find information on demographic factors and alcohol use correlates, the researcher used the following keywords: alcohol consumption and alcohol use with socioeconomic status, religion, and race/ethnicity. To locate articles on specific racial/ethnic groups and religions, the researcher searched using keywords: alcohol and religion, religiosity, Islam, Judaism, Christianity, African Americans, European Americans, Native Americans, Asian Americans, and Hispanic Americans. All full-text articles were obtained through PubMed, a database with health-related articles, and Google scholar. In addition, many of the articles were obtained through the references sections of acquired papers. The researcher did not limit studies by the date published. The researcher reviewed a total of 34 articles about race/ethnicity, religion, SES, health, and alcohol consumption. An additional 20 articles were

read but not included in this review because the results of the studies were irrelevant to this literature review or did not provide new information.

### **Alcohol Consumption vs. Abuse vs. Dependence**

Over 83% of Americans report having used alcohol at some point in their lives (NIAAA, 2011). Over half of U.S. adults drank alcohol in the past month; 5% drank heavily, and 15% engaged in binge drinking (CDC, 2010). According to the Alcohol-Related Disease Impact (ARDI), over 79,000 deaths were attributable to excessive alcohol use annually from 2001-2005, and excessive alcohol use is the third leading lifestyle cause of death in the U.S. (CDC, 2010). According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), 90% of alcohol consumed by people under age 21 is in the form of binge drinking. People often overlook the dangerous effects of alcohol, as they believe that alcohol use is more likely to impact others, not themselves (Leigh, 1987).

What constitutes heavy drinking? In general, most studies abide by the standards outlined by CDC: excessive alcohol use encompasses heavy drinking and binge drinking. Heavy drinking can be defined by consuming more than two drinks per day on average for men, or more than one for women. The term “binge drinking” describes episodes in which a man consumes five or more or a woman consumes four or more drinks on a single occasion (CDC, 2010).

The Diagnostic and Statistical Manual, fourth edition (DSM-IV) defines alcohol abuse and dependence with distinct criteria (see Appendix A). A person is considered an “abuser” if they are not dependent on alcohol and fulfill one of four requirements in the past year: 1) regularly unable to complete responsibilities, 2) regularly use alcohol in dangerous situations, such as when operating a vehicle, 3) have legal problems resulting from substance use, 4) have

persevering social or interpersonal problems but continue to use. An individual is considered dependent if they report three of the following seven symptoms in the past year: 1) increased tolerance (i.e. they need more alcohol to obtain the same effect); 2) experience withdrawal symptoms; 3) they consume for longer periods of time or in greater amounts than intended; 4) desire to or inability to control consumption; 5) significant amounts of time spent obtaining the substance and recovering from its use; 6) hinders social interactions, work, or recreation, or given up altogether; 7) use persists despite knowledge of problems associated with use (American Psychiatric Association, 1994).

There are many different definitions of alcohol use, abuse, and consumption. This study abides by the DSM-IV definitions of substance abuse and dependence disorders, and the CDC definitions of heavy drinking and binge drinking. As all levels of alcohol consumption are important in understanding correlates between alcohol use and demographic factors, this study incorporates information about general alcohol consumption levels, binge drinking, heavy drinking, alcohol abuse, and alcohol dependence. The primary focus is on the correlates and how they relate to different kinds of alcohol consumption.

Excessive alcohol use, defined as heavy drinking and binge drinking, as well as behaviors conducted by those with alcohol abuse and dependence disorders, can lead to many health problems. The following sections will review the physical, mental/psychological and sociocultural effects of alcohol use and abuse.

### **Effects of Alcohol Use**

#### **Physical Effects**

Alcohol abuse can lead to serious health problems, such as damage to internal organs, weak immune systems, and has even been linked to some kinds of cancer (NIAAA, 2011).

Drinking heavily can slow the communication of the neurotransmitters in the brain, as well as negatively impact the cerebellum, cerebral cortex, and limbic system (NIAAA, 2011). The cerebellum controls balance and motor skills, and heavy alcohol use impedes coordination. Alcohol also damages the limbic system, which is the area of the brain responsible for memory and emotion. The cerebral cortex controls thoughts, learning, and behavior, all of which are influenced by heavy drinking (NIAAA, 2011).

Studies indicate that heavy users of alcohol have higher rates of morbidity and mortality (Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2001; Schmidt & Popham, 1975). Morbidity, the prevalence of disease, is higher among heavy drinkers. These problems include: a) diseases of the nervous system, such as peripheral neuropathy and brain damage; b) diseases of the digestive system, including the liver, gastritis, ulcers, and pancreatitis; c) respiratory diseases, especially chronic bronchitis, pneumonia, and tuberculosis; d) heart and vascular diseases, including cardiomyopathy and hypertension; and e) some types of cancer, especially of the upper respiratory and upper digestive tracts (Schmidt & Popham, 1975). Alcohol abuse can also lead to strokes and hypertension (NIAAA, 2011).

In women, alcohol abuse is linked to distinct health problems. Hill (1995) found that women with alcohol use disorders have an increased risk of developing breast cancer, osteoporosis, and chronic bone fractures. Drinking causes more detrimental effects to the liver in women compared to men. Chronic alcohol use in women is correlated with a lower life expectancy (Hill, 1995).

People are more likely to have unprotected sex, engage in dangerous activities, and get into accidents when intoxicated (NIAAA, 2011). In 2004, there were 16,919 fatalities from alcohol-related traffic accidents (NIAAA, 2011). After vehicular accidents, the main types of



accidents that occur are alcohol poisoning, fires, and falls (Schmidt & Popham, 1975). Alcohol consumption is also correlated with an increased risk of accidental and suicidal mortality in adolescence and young adulthood (Hill, 1995). Alcoholics have between 6-20 times greater chance of contemplating suicide than the general population, and domestic violence cases involve alcohol more often than not (Hill, 1995). A recent study found that each year, the number of unintentional alcohol-related injury deaths exceeds 1,400 students, that 500,000 college students are hurt or injured unintentionally while under the influence, and that 600,000 are physically assaulted or hit (Hingson et al., 2001).

### **Mental/Psychological and Cultural Effects**

Alcohol abuse has many mental health ramifications, often comorbid with physical effects. These include anxiety and sleep problems (NIAAA), as well as drug use disorders, affective disorders, and mood disorders (Burns & Teesson, 2002; Regier et. al, 1990). A study by Leigh (1987) asked participants what they believed were the negative effects of alcohol on themselves, and how they impacted others. Leigh discovered that people know what the harmful effects of drinking are, but believe that they happen to other people, and not themselves. They realize alcohol has adverse effects, but do not believe these ramifications apply to them (Leigh, 1987). This optimistic bias can be seen as a good thing, but can cause individuals to neglect important issues that apply to them. If they believe they are immune to the negative effects of alcohol, they will not reflect on their own drinking habits and might overlook potentially hazardous signals.

Burns and Teesson (2002) studied 10,641 Australian adults for alcohol use disorders, defined as alcohol abuse and dependence. One-third of participants with an alcohol use disorder fulfilled the criteria for at least one other comorbid disorder occurring in the last year,

the most common of which were drug-use disorders. Depression was the most prevalent comorbid mental disorder. Participants in this study were ten times more likely to have a drug use disorder, four times more likely to have an affective disorder, and three times more likely to have an anxiety disorder (Burns & Teesson, 2002).

Reiger et al (1990) found similar results: 37% of those with an alcohol use disorder had a comorbid mental health disorder. Nineteen percent of individuals with alcohol use disorders also had an anxiety disorder, making anxiety the most prevalent mental health disorder among alcohol abusers. Affective disorders were found in 13.4% of alcohol abusers compared to 7.5% prevalence in the general population. Individuals with alcohol disorders also were 5 times more likely than the general population to have comorbid bipolar disorder. In this study, it was difficult to distinguish which came first: the alcohol abuse or the mental health disorder. For example, substance abuse was identified in 84% of individuals with antisocial personality disorder, 25% of those with anxiety disorders, 34% of people with schizophrenia, and 46% of individuals with Bipolar I disorder (Regier et. al, 1990).

Alcohol abuse has also been linked to crime and violent behavior (Leigh, 1987). College students who binge drink are more likely to be involved in rape and assault (Peralta & Steele, 2009). The mental and physical health problems associated with alcohol abuse affect more than just the body: the interpersonal, legal, and social ramifications are often just as consequential as health problems (Hill, 1995). Alcohol abuse is a serious problem with many negative physical, mental, and psychological ramifications.

### **Sociodemographic Correlates of Alcohol Consumption**

Most research on alcohol consumption assesses sociodemographic factors, but often these factors are not the primary focus of the study. For the purposes of this literature review,

the researcher only reviewed studies that focus specifically on the relation between alcohol use and race/ethnicity, socioeconomic status, and religion.

### **Religion**

It is important to differentiate between religion, religiosity, and spirituality. Though religiosity has many definitions, in this paper the term religiosity refers to how religiously dedicated a person is. For example, many people consider themselves to be Christian, but a Christian with a high level of religiosity might attend church weekly and pray daily, while a Christian with a lower level of religiosity might attend church once or twice a year.

Religion and spirituality often go hand in hand, but not always. Many people think of religiousness and spirituality as the same thing, while others consider them to be very different (Abeles et al., 1999). Religiousness has characteristics derived from a denomination, and incorporates a system of worship and a religious doctrine. Spirituality includes transcendent experiences and finding purpose in life, but not necessarily adhering to a particular religion (Abeles et al., 1999). This study will focus only on religion and religiosity.

**Reference group theory.** The reference group theory offers insight as to why people choose to drink or abstain from drinking. It states that to feel like part of a group, one must: a) be oriented to the group's values; b) have things in common with one another and agree with the other members of the group; c) understand the group's values and beliefs; d) have sustained interactions with other groups members; and e) look at group leaders as significant others and counselors during times of need (Beeghley, Bock, & Cochran, 1990). It also implies that the more contact one has with their religious group, the more that religion's practices and norms are reinforced since people act similarly to their social group (Ford & Kadushin, 2002; Merton, 1968). According to this theory, people's attitudes, behaviors, and beliefs are shaped

by their group membership. Most religious groups meet the criteria for a reference group, because adherents belong to the same church and attend together, share membership in the group, share similar values, and look to priests, ministers, rabbis, and other religious leaders in times of need. According to this theory, followers of proscriptive faiths are less likely to use and abuse alcohol than those who adhere to nonproscriptive religions (Beeghley, Bock, & Cochran, 1990).

**Denomination.** Research has shown that religious preference has an effect on alcohol use (Beeghley, Bock, & Cochran, 1990; Ford & Kadushin, 2002; Abu-Ras et al., 2010; Glassner & Berg, 1980). Membership in a religious group is associated with a reduced likelihood of alcohol dependency (Ford & Kadushin, 2002; Lambert, Fincham, Marks, & Stillman, 2010; Smith, Phillips, & Brown, 2008). Individuals who do not adhere to a religion have the highest rates of alcohol use, at 90%, and the highest rates of misuse, with over 50% reporting have drunk more than they should have (Beeghley, Bock, & Cochran, 1990). Non-religious people also have the highest percentage of occasional and frequent heavy drinking (Michalak, Trocki, & Bond, 2007).

Religious groups differ in their views about alcohol consumption (Beeghley, Bock, & Cochran, 1990). Some religions, called proscriptive religions, prohibit alcohol consumption altogether (Beeghley, Bock, & Cochran, 1990). Followers of these religions are expected to avoid alcohol entirely. Other religions, called nonproscriptive, permit alcohol use, as they believe drinking is irrelevant to their religion. Many nonproscriptive religions even include alcohol in religious ceremonies, like drinking wine during communion (Beeghley, Bock, & Cochran, 1990). Proscriptive groups include Baptists, some Protestants (fundamentalists, evangelicals, pentecostalists), and Muslims (Abu-Ras, Sameera, & Arfken, 2010; Beeghley, Bock, & Cochran, 1990; Ford & Kadushin, 2002). Nonproscriptive faith groups include Catholics, Jews,

Episcopalians, Presbyterians, Lutherans, and Methodists (Beeghley, Bock, & Cochran, 1990; Ford & Kadushin, 2002).

***Christianity.*** There are many different sects and branches of Christianity, and thus, it is difficult to classify “Christians” as one homogeneous group. Some sects of Christianity strictly prohibit alcohol consumption, while others have liberal, or even positive attitudes toward drinking. Mormons and Seventh Day Adventists have strong messages against drinking, and Catholics, Lutherans, and Episcopalians do not—they incorporate wine into ceremonies and rituals (Michalak, Trocki, & Bond, 2007). Bock, Cochran, and Beeghley (1987) classify Protestants into two groups: “Liberal Protestants,” which includes Episcopalians, Lutherans, and Presbyterians, and “Conservative Protestants,” which consists of Methodists, Baptists, and other Protestants.

Bock, Cochran, and Beeghley (1987) studied the relationship between alcohol consumption and misuse with religious denomination and religiosity. They gathered data from the General Social Surveys from 1972-1980, and found varying rates of alcohol consumption among the different sects of Christianity. Among Christians, Episcopalians had the highest rate of users (87%) followed by Catholics (86%), Lutherans (85%), Presbyterians (78%), Methodists (68%), and then Baptists and other Protestants (56%). Those who belong to nonproscriptive religions had higher rates of alcohol use. Overall, 80% of Liberal Protestants used alcohol compared to 60% of Conservative Protestants (Bock, Cochran, and Beeghley, 1987).

Interestingly, while Liberal and Conservative Protestants vary substantially on levels of alcohol use, they have similar rates of misuse. Religious denomination affects alcohol use and abstention, but not necessarily misuse. Episcopalians have the highest rates of alcohol misuse

among Christians; 46% reported having drunk more than they should have at some point (Bock, Cochran, and Beeghley, 1987).

Another study by Michalak, Trocki, and Bond (2007) explored the relationship between religious preference, religiosity, and alcohol proscription. The researchers conducted 7,370 phone interviews, and categorized participants into four categories: 1) current abstainers, individuals who had not consumed alcohol in at least the past year; 2) moderate drinkers, who had not had more than five drinks in any one occasion in the past year; 3) occasional heavy drinkers, who had not consumed more than five drinks in a night more than once a week; and 4) frequent heavy drinkers, who consume five or more drinks multiple times per week. They found that among Christians, the highest rates of abstention occurred among Mormon, Church of God, and Assembly of God adherents, with over 70% of followers abstaining from alcohol entirely. The overall percentage of frequent heavy drinkers among Mormons is 3.2%, 2% less than the general population (Michalak, Trocki, & Bond, 2007). Lutherans and Presbyterians were characterized by moderate drinking; less than a fifth of Lutherans abstain from drinking. Over 25% of Catholics were classified as occasional heavy drinkers and 6% as frequent heavy drinkers (Michalak, Trocki, & Bond, 2007). Church of God, Episcopalians, Jehovah's Witness, Protestants, Community Church, and European Free Church all had less than 2% rates of alcohol abuse, and Assembly of God and Seventh Day Adventists had no recorded cases of alcohol abuse (Michalak, Trocki, & Bond, 2007).

Clearly, denomination affects alcohol consumption, but interestingly, only 40.3% of participants cited that a reason for not drinking or drinking less was because it was "against their religion" (Michalak, Trocki, & Bond, 2007). This implies that many Christians use or abstain independently of their sect's views on alcohol consumption. Social groups, family, community,

and other outside factors may have a greater influence on alcohol use. The reference group theory helps explain why religious affiliation affects drinking rates; much of the relationship is based on group membership rather than religion itself.

*Islam.* Michalak, Trocki, and Bond (2007) found that Muslims had high levels of religiosity, proscription, and abstention. The researchers studied the impact of religion on alcohol consumption by analyzing data from the 2000 National Alcohol Survey. They collected data through computer assisted telephone interviews of 7,379 households across the U.S., 45 of which were Muslim. Of those interviewed, not a single Muslim reported frequent heavy drinking, there were no recorded cases of alcohol abuse, and over 70% abstained from drinking entirely. Their low levels of alcohol consumption could be because the Qur'an forbids consumption of alcohol (Michalak, Trocki, & Bond, 2007).

Abu-Ras et al. (2010) highlighted the effect of social norms on alcohol use by analyzing data from the 2001 Harvard School of Public Health College. The authors found that Muslim students had a low rate of drinking compared to their non-Muslim U.S. counterparts, but a higher rate of alcohol consumption than Muslims in predominantly Muslim countries (Abu-Ras et al., 2010). The reference group theory and socialization theory come into play in this study as well. Social groups largely influence people's actions, and whether that group includes their friends in college, religious community, or family is important. Islam has a prohibition against alcohol consumption, and rates of consumption in Muslim countries are very low (Abu-Ras et al., 2010). Of the Muslim college students surveyed, 46.6% reported having consumed alcohol in the past year, compared to 80.7% of non-Muslim students (Abu-Ras et al., 2010). Of the Muslim students who abstained from drinking, 94.4% had never had a drink (Abu-Ras et al., 2010). Muslim students who chose not to drink rated religion as more important than Muslim

students who did drink (Abu-Ras et al., 2010). Considering Islam is a proscriptive faith, the rate of drinking amongst college students was high. This indicates that non-religious outside influences affect in Muslim students' drinking patterns.

**Judaism.** Despite the fact that Judaism is a nonproscriptive religion, rates of excessive drinking among followers of Judaism are very low: 7% of the general population is classified as alcoholics, while only 1% of the Jewish population is similarly classified (Unkovic, Adler, & Miller, 1977). Compared to other ethnic groups, Jews have a very low rate of alcoholism, and alcohol problems have been rare in Jewish communities for the last 2,500 years (Bainwol & Gressard, 1985; Glassner & Berg, 1980). Many traditional Jewish practices involve alcohol, and incorporate sacramental and family drinking. Thus, Jews have a high percentage of drinkers, but low percentage of alcoholism and alcohol abuse (Glassner & Berg, 1980). Bock, Cochran, and Beeghley (1987) confirmed these results, and found that while 85% of Jews use alcohol, only 24% report misuse. Michalak, Trocki, and Bond (2007) classified Jews as "moderate" drinkers, with less than 2% abusing alcohol.

In a study by Glassner and Berg (1980), 88 Jewish individuals from the New York area participated in extensive 2-3 hour phone interviews. The researchers found that not a single person interviewed met the standard definition of an alcohol abuser. Of those interviewed, 59% had never been intoxicated, no one had been intoxicated more than a few times, none suffered social, economic, or medical problems because of drinking, and of those who did drink, 76% did so only on special occasions (Glassner & Berg, 1980). They also interviewed rabbis, physicians, alcoholism counselors, an AA leader, and a city court judge, all of whom said Jewish alcohol problem rates were very low. Based on interviewee's comments, Glassner and Berg outlined four primary explanations for the low rates of drinking problems among Jews.



First, Jews associate alcohol abuse with non-Jews (Glassner & Berg, 1980). People often take on similar social patterns to members of their group, and people control consumption because of social norms. In the Jewish community, excessive drinking is seen as an “outgroup” characteristic. As Jews associate drinking problems with non-Jews, it is much harder for Jews with alcohol problems, as they are such an anomaly (Glassner & Berg, 1980.) Secondly, Jews are brought up practicing drinking in moderation. From childhood, Jews associate drinking with special occasions, such as Seders, Sabbath, and briss, and drink wine at holidays to supplement food, not to get drunk (Glassner & Berg, 1980). Most of the researchers’ interviewees recalled that early drinking was part of their childhood religious ceremonies. Only 5% of the interview sample said that their first drink was outside their family and after childhood (Glassner & Berg, 1980).

The third reason Glassner and Berg believe Jews avoid alcohol problems is insulation by peers. Many Jews have drifted away from Orthodox religious affiliations, which have stricter guidelines. Aside from Orthodox Jews, drinking rates were highest among those interviewed during their college or military service periods (Glassner & Berg, 1980). Most of the interviewees said that their friends during these times were predominantly non-Jewish, and they drank to fit in. After young adulthood, their peer group shifted to primarily Jewish friends (Glassner & Berg, 1980). The fourth reason Jews evade alcohol problems is avoidance repertoire. Many Jews have strategies for how not to drink and still fit in, and some simply avoid going out or being in situations where drinking occurs (Glassner & Berg, 1980).

Glassner and Berg’s (1980) study provides interesting information on the drinking habits of Jews, but may not still be relevant today. Since it was conducted over thirty years ago, much of this information could be outdated. However, this study was so thorough and open-ended

that the answers to the interview questions provide interesting insight on how Jews view their religion and community. Interestingly, it contradicts findings by Ford and Kadushin (2002), which state that people who identify with nonproscriptive religions are at a greater likelihood of being at risk for alcohol dependency than those who belong to proscriptive religions. Although Ford and Kadushin's study is more recent, their research spanned a broader population that did not include Jews, so the generalizations about religions may not be applicable to Judaism. They also surveyed with less detail; phone interviews lasted an average of 23 minutes, compared to 2 - 3 hours in Glassner and Berg's study. The extensiveness of Glassner and Berg's interviews provided them with more information about religious practices that might involve alcohol. An updated, extensive study on Judaism should re-examine alcohol dependence and religiosity, as well as incorporate participants from a wider geographical radius and different SES backgrounds.

Research often looks at Jews to study what factors contribute to their low rates of alcoholism, and to get ideas for prevention programs (Bainwol & Gressard, 1985). While the low rate of alcoholism among the Jewish population is definitely positive, it also has negative effects on the minority of Jews who do have alcohol problems. Jews assume they have "cultural immunity" to alcoholism and misuse, and are thus less likely to identify problem behaviors in themselves (Bainwol & Gressard, 1985). They often do not seek treatment or refuse help because they are confused or embarrassed by their condition. At the time of this study, Jewish alcoholics were not open about their drinking problems, meaning that the rate of alcoholism among Jews could be underreported (Bainwol & Gressard, 1985). No services exist that are specifically designed for Jews; there is a need for programs and workshops identifying risky behaviors and making Jews with alcohol problems feel less ostracized.

**Religiosity.** High levels of religiosity correlate with low levels of alcohol consumption (Bock, Cochran, & Beeghley, 1987; Michalak, Trocki, & Bond, 2007; Smith, Phillips, & Brown, 2008; Stevens-Watkins & Rostosky, 2010). Researchers measure religiosity in different ways, which is why some factors associated with religiosity correlate stronger with alcohol consumption than others. Michalak, Trocki, and Bond (2007) measured religiosity by asking participants to rank how important religion was in their lives. They found that individuals with high levels of religiosity had higher rates of abstinence and were less likely to be heavy drinkers. In general, people who were more religious consumed less alcohol; religiosity had a strong negative correlation with drinking and heavy drinking (Michalak, Trocki, & Bond, 2007).

Bock, Cochran, and Beeghley (1987) found that the impact of religiosity was greatest on those individuals adhering to denominations that strongly oppose alcohol use. They attribute this to the reference group theory, and found that those with high levels of religiosity are more likely to consider and abide by their religion's moral messages. To measure religiosity, participants were asked about the strength of their religious identification, how often they attended church, and if they were church members. All three religiosity variables negatively correlated with alcohol use among Baptists, Methodists, and other conservative Protestants—all proscriptive religions (Bock, Cochran, and Beeghley, 1987).

A study by Stevens-Watkins and Rostosky (2010) gathered data from 1,599 African American participants from Waves 1 and 3 of the National Longitudinal Study of Adolescent Health. The participants were asked three questions about religiosity: a) how often they attended religious services, b) how important religion was to them, and c) how often they prayed (Stevens-Watkins & Rostosky, 2010). Authors found that the combination of high religiosity, strong family connections, and low substance use among best friends in high school

was associated with a lower chance of binge drinking during high school (Stevens-Watkins & Rostosky, 2010). However, the drinking patterns of their three best friends were more correlated with alcohol use than religiosity. (Stevens-Watkins & Rostosky, 2010). Although religiosity was not the predominant influencer in alcohol consumption rates in this study, other studies that incorporate race/ethnicity find religiosity to have a significant impact on drinking behaviors, especially among African Americans.

Smith, Phillips, and Brown (2008) conducted a study that focused particularly on ethnic identity and religiousness among African Americans, and how these factors affected college students' drinking habits. They surveyed 173 African American undergraduate students, and found that religiousness accounted for 31% of the relationship between ethnic identity and alcohol use (Smith, Phillips, & Brown, 2008). Religiousness was indicated with questions like "I feel God's presence" and "How often do you read the Bible?" Alcohol consumption habits were assessed with questions that asked about frequency of drinking, quantity of drinks, and problems related to drinking, i.e., "Have you ever experienced any problems or objections to your drinking?" Although religiousness did mediate the link between ethnic identity and alcohol use to an extent, results showed that it was not private religious practices that correlated with alcohol use, but religiosity (Smith, Phillips, & Brown, 2008). Daily spiritual experiences and ethnic belonging were negatively correlated with alcohol consumption, but private religious activities, such as attending church, did not necessarily correlate. This is likely because these practices occurred less frequently and out of ritual and habit, rather than thinking deeply about religion and spirituality daily (Smith, Phillips, & Brown, 2008). Thus, it was the dimension of religiousness, or religiosity, that correlated with consumption—not merely the identification with a religion (Smith, Phillips, & Brown, 2008).

Religiosity can be measured with frequency of church attendance, prayer, and feelings of commitment to one's religion. Smith, Phillips, and Brown (2008) found that private aspects of religiosity, along with best friends' drinking habits and family connectedness are the principle influencers on African American drinking habits. There exists a significant difference between identifying with a religion and having a strong commitment to one's faith. Higher levels of religiosity negatively correlate with alcohol consumption; the strength of the correlation varies. Future studies should examine levels of religiosity among other racial groups.

Religion and race/ethnicity have much overlap, and religion can mean different things for different ethnic groups. Research shows that religion plays a unique role in the lives of African Americans (Ford & Kadushin, 2002; Lawrence, Abel, & Hall, 2010; Stevens-Watkins & Rostosky, 2010). Levels of religiosity are higher for African Americans than for other American racial or ethnic groups, and religiosity is associated with lower alcohol use among African Americans (Chatters, 2000; Lawrence, Abel, & Hall, 2010).

**Prayer.** Prayer is a common part of nearly all religious faiths, and 90% of Americans pray at least occasionally (Lambert, Fincham, Marks & Stillman, 2010). Lambert et al. (2010) wanted to see if there was a causal relationship between religiosity and alcohol use, and found that prayer frequency contributed to lower alcohol consumption rates and fewer alcohol-related problems, indicating a causal relationship. In four different studies, Lambert, Fincham, Marks, and Stillman (2010) demonstrated that higher levels of religiosity are related to lower levels of alcohol consumption, and that there is a causal relationship between prayer and alcohol consumption. In the first study, the authors found that higher prayer frequency scores among students negatively correlated with total alcohol consumption and problematic drinking scores; those who prayed more drank less (Lambert et al., 2010). In the second study, the authors

found that among college students, greater prayer frequency at the beginning of the semester was correlated with a decrease in both total alcohol consumption and problematic drinking at the end of the semester (Lambert et al., 2010).

The third study investigated whether the relationship was causal in addition to being correlational. Participants were assigned to one of four conditions, and were asked to log how often they engaged in their assigned activity each day. They were asked to keep an online journal twice a week recording their thoughts and progress. Two groups involved prayer: one was instructed to pray for the well-being of their romantic relationships, and the other group was instructed to engage in undirected prayer; they could pray about anything as long as they recorded it. Two control groups existed; one was asked to write about relationship topics, and the other just to write about daily activities. The results of the researchers' third study demonstrated a causal relationship between prayer and drinking: prayer reduced drinking frequency by 50% (Lambert et al., 2010). In the fourth study, the authors varied the prayer conditions and replicated the results of the third study.

Considering that alcohol consumption is influenced by religion, and religious adherents often pray, it makes sense that prayer and alcohol consumption would be related. The fact that a causal relationship exists is more surprising, but has promising implications. As prayer can lower college students' rates of drinking, it would be interesting to expand this study to other age groups. It is also important to look at how prayer can be incorporated into daily life, and to examine how prayer differs from religion to religion. If people who do not consider themselves religious are willing to pray, then prayer could be incorporated into prevention and intervention programs. Even people who are religious may not pray frequently or understand the full value of prayer, so informing the public its benefits could reduce alcohol related problems. The

uniqueness of this study leaves much room for replication and ideas for future research. Future studies on prayer should examine the relationship between religion and prayer, if prayer affects alcohol consumption levels for all age ranges, and how prayer can be presented to non-religious individuals. It would also be interesting to study what aspects of prayer lead to alcohol consumption reduction: is it the prayer itself, or the fact that prayer is a method of relaxation and form of meditation, and someone in a relaxed, unstressed state would be less likely to drink?

*Religious Service Attendance.* Ford and Kadushin (2002) studied the relationship between religion and alcohol among European Americans and African Americans. This study was unique in that it took into account both individuals' denominations, and their commitment to their religion. Many individuals identify with a religion, but are not actively involved nor affected by religion in their day-to-day lives. A diverse sample of 10,982 European Americans and 7,835 African Americans were surveyed on their religious beliefs and alcohol use. Estimates of alcohol use were obtained by asking the participant if they had had more than four drinks at any day during the past year. The survey asked for religious preference, with the options of Protestant, Catholic, Jewish, a different religion, or no religion). Participants then indicated how often they attended religious services: a) never/rarely; b) once or twice a month; c) once a week or more; and d) daily. Very few people selected daily that they were included in the category as once a week or more. Higher attendance indicates higher levels of religiosity; if someone is more committed to a religion, they attend church more frequently (Ford & Kadushin, 2002).

Findings indicated that more African Americans attended weekly services than European Americans, and European Americans were more likely to never attend religious services.

European Americans who attended church services once or twice a month were 7% less likely to be at risk for alcohol dependency compared to European Americans who did not attend. No similar effects were found for African Americans in this category. Weekly service attendance, on the other hand, predicted lower rates of alcohol abuse for both European Americans and African Americans; this was the only factor that had a significant effect on African American alcohol use. Thus, frequency of church attendance was a much more powerful predictor of risk for alcohol abuse for European Americans compared to African Americans (Ford & Kadushin, 2002). Although denomination is important in predicting risk of alcohol dependency, it is also important to look at the degree of social integration, measured through frequency of religious service attendance. For European Americans, the normative aspect of religion was more relevant to alcohol dependency, while for African Americans, the integrative aspect was more important (Ford & Kadushin, 2002).

As church attendance increases, alcohol consumption rates and rates of alcohol abuse decrease (Ford & Kadushin, 2002). Beeghley, Bock, and Cochran (1987) found a similar pattern among Jews: temple attendance negatively correlates with drinking. Future studies should examine if this relationship exists across different racial groups and religious affiliations. Does the correlation between church attendance and alcohol use in African Americans translate similarly for other racial groups? Since religion plays a different role in the lives of African Americans and European Americans, how do levels of religiosity vary among other racial groups, and how does this correlate with attendance at their place of worship?

**Religious change.** Beeghley, Bock, and Cochran (1990) investigated the link between religious change and alcohol use. The authors were curious if individuals who change religions adapt to their new religious beliefs about drinking, or maintain their old patterns. They also



examined the impact of religiosity on consumption levels, and looked at how that varied by denomination. The combination of the socialization and reference group theories led the authors to hypothesize that adults raised in proscriptive faith groups who stick with their beliefs will have the lowest levels of alcohol use, and those raised in nonproscriptive faiths who do not change their beliefs will show the highest levels of alcohol use.

This hypothesis was tested with data from the General Social Surveys from 1972-1986 (Beeghley, Bock, & Cochran, 1990). Alcohol use was measured with by questions that asked the individual a) if they ever drank, and b) if they sometimes drank more than they should (Beeghley, Bock, & Cochran, 1990). Whereas these two questions seem somewhat limiting in terms of potential information collected, they serve the intended purpose of investigating the link between alcohol use and religious change. Religious beliefs and religiosity were measured with four questions. Participants were asked: a) the frequency that they attend religious services; b) the strength of their religious identification; c) if they were members at church organizations; and d) if they believed in life after death (Beeghley, Bock, & Cochran, 1990). Their hypothesis was supported; proscriptive non-changers had the highest level of alcohol nonuse at 46%, followed by those who changed to a proscriptive religion (41%), those who changed to a nonproscriptive faith (23%), and then nonproscriptive non-changers (17%; Beeghley, Bock, & Cochran, 1990). Those who changed to proscriptive religions had higher levels of religiosity than those who changed to nonproscriptive religions. Regardless of change, individuals with higher levels of religiosity were more likely to abstain from alcohol use, and those with lower levels of religiosity had greater odds of misuse (Beeghley, Bock & Cochran, 1990).

The findings suggest that the power of religion on alcohol use is most significant to those individuals who have the highest levels of exposure to objecting moral messages about alcohol; as individuals are exposed to their religion's moral messages, levels of religiosity rise. Those with highest levels of religiosity who conform to proscriptive religions are least likely to drink (Beeghley, Bock, & Cochran, 1990). The more exposure one has with a set of norms, the more one conforms to those norms (Ford & Kadushin, 2002).

**Religion as social support.** The research on the relationship between religion and alcohol use has been primarily focused on the denomination with which the individual identifies, ignoring the role that group integration plays on behavioral outcomes. This leads one to wonder if it is the religion itself that has the impact, or the fact that similar people adhere to particular faiths, and these people are simply less likely to drink. Religion is not just about God and faith, but also about forming social connections and meeting people with similar beliefs, thus creating a support system and sense of community (Ford & Kadushin, 2002).

Historically, membership in the African American church was an essential aspect of being part of the African American community (Ford & Kadushin, 2002). Research indicates that the majority of African Americans who attend church belong to "black denominations" or "black churches," reinforcing the idea that religious participation is largely segregated by race (Ford & Kadushin, 2002). Many African American churches serve as more than just churches. They provide a support system, help members handle stressors, serve as a way to form social connections, and some even have community outreach programs and substance abuse programs (Ford & Kadushin, 2002).

### **Race/Ethnicity**

Religion and race/ethnicity have much overlap with regard to alcohol use. Many racial and ethnic groups adhere to specific branches of a religion (Ford & Kadushin, 2002; Stevens-Watkins & Rostosky, 2010). This leads one to wonder: could the relationship between religion and alcohol use be partially contingent on race? Research suggests that race/ethnicity affects alcohol consumption rates, and some of this can be attested to religion. However, the differences between drinking habits of racial and ethnic groups are significant, and many members of these groups do not adhere to a particular religion. Because many members of different racial groups adhere to the same religion, religion cannot be fully credited for the differentiation between racial and ethnic groups. In this section, the author will review the relation between race/ethnicity and alcohol consumption rates.

The 2001-2002 data from the National Institute on Alcohol Abuse and Alcoholism (NIAAA, 2005) showed that Native Americans have the highest rates of alcohol abuse (5.75%) within the past year, followed by European Americans (5.10%), Hispanic Americans (3.97%), African Americans (3.29%), and then Asian Americans (2.13%; NIAAA, 2005). In general, literature reflects this pattern, but with much variability among racial and ethnic subgroups and between sexes. In the race/ethnicity section, the researcher will discuss differences among racial groups, and theorize as to why these discrepancies exist.

Corbin, Vaughan, and Fromme (2008) surveyed 2,241 college bound students to look at differences in alcohol use by sex and ethnicity, and investigated motives behind drinking. Among European American adolescents, the biggest influence was peer pressure. Familial influence did not play a role in prevention among European Americans (Corbin, Vaughan, & Fromme, 2008). Unlike other racial groups, only a small gap in drinking habits exists between European American men and women. The biggest sex difference occurred amongst Latino

populations, followed by African Americans. In all racial groups, men consumed more alcohol and had more binge drinking sessions than women. This study contradicts most current literature in that it found that Latino men had the highest instances of binge drinking episodes in the past three months, at 2.82 episodes. This was followed by European American men, then multiethnic men, European American women, multiethnic women, Latinas, African American men, Asian-American women, Asian-American men, and the lowest rates were among African American women (Corbin, Vaughan, & Fromme, 2008).

**Whites/European Americans.** White male students experience a disproportionate number of alcohol-related problems compared to racial minorities (Peralta & Steele, 2009). A study by Lawrence, Abel, and Hall (2010) asked 567 students how many days in a typical week they get drunk. European American students reported more drunk episodes per week than all other ethnic minorities. Another study by Cranford, McCabe, and Boyd (2006) found that European American students consumed more alcohol and experienced more negative consequences from drinking than non-whites. Peralta and Steele (2009) surveyed 422 European American and African American undergraduate students about drinking habits. In the study, 23% of European American students were frequent binge drinkers, compared to 10% of African American students.

Drinking habits of European Americans are definitely dangerous, and influence racial minorities living in the United States as they become acculturated to the “American way” (Caetano, Clark, & Tam, 1998; Lawrence, Abel, & Hall, 2010). Although drinking and drinking related problems are more prevalent among European Americans, they are also a growing problem among ethnic minorities (Lawrence, Abel, & Hall, 2010). This is likely due to assimilation—the minority group takes on the characteristics of the majority; the college

campus provides a setting in which ethnic minorities might adjust to the European American binge drinking habits.

**African Americans.** Religiousness and religiosity among African Americans correlate with high ties to ethnic identity. In Smith, Phillips, and Brown's (2008) study, strong ties to the African American community was linked with higher levels of ethnic identity, religiousness, and less drinking. The researchers asked questions about ethnic identity such as "I have spent time trying to find out more about my ethnic group, such as its history, traditions and customs," and "I have a strong sense of belonging to my ethnic group" (Smith, Phillips, & Brown, 2008). Feelings of ethnic identity belonging were correlated with ethnic identity search. Interestingly, ethnic identity search was not associated with lower levels of alcohol use, unlike ethnic identity belonging (Smith, Phillips, & Brown, 2008). It is interesting that a feeling of belonging, rather than identity search, correlates with lower levels of alcohol use. The feeling of ethnic identity belonging indicates a sense of meaning and purpose within one's racial group; African Americans who have a strong ethnic identity belonging also feel like they have a strong support system, and a feeling of belonging indicates a feeling of confidence. One explanation of why they might drink less might be because they are confident with themselves and their identity, and do not feel the need to succumb to the "American norm;" their ties with their community and sense of self are enough to keep them from abusing alcohol.

Caetano and Clark (1998) aimed to examine trends in alcohol use among whites, blacks, and Hispanics in 1984 and 1995, and to see how the patterns of alcohol use have changed. Data were collected through one-hour in-person interviews. Over those 11 years, rates of abstention for white men stayed about the same, but the number of frequent heavy drinkers decreased from one-fifth to one-tenth (Caetano & Clark, 1998). They found that African American men

had increased rates of abstention and decreased rates of frequent drinking, and stable rates of frequent heavy drinkers. Women also had a 10% increased rate of abstention. The authors also noted that while more African Americans abstain from drinking, they have slightly higher rates of frequent heavy drinking than European Americans (Caetano & Clark, 1998). In general, these trends are positive. Future research should ask about participants' geographic location, socioeconomic status, religion, and age when looking at African American drinking habits. This will help uncover what contributes to frequent heavy drinking rates, as these present the only alarming statistics from the study.

Lawrence, Abel, and Hall (2010) studied the differences in consumption and protective strategies among white, black, and Hispanic college students, and, through a survey of 567 college students, found that African Americans were less likely to report getting drunk than European Americans (Lawrence, Abel, & Hall, 2010). Blacks are thought to have more permissive, liberal views on alcohol consumption, which promotes heavier alcohol use (Caetano, Clark, & Tam, 1998). However, some research indicates that African American contemporary views on alcohol use are more conservative than those of European Americans (Caetano, Clark, & Tam, 1998). Historically, rates of heavy drinking among African Americans were highest among men age 40-50 years and among whites in their 20s. Today, whites and blacks show similar drinking patterns until age 49. After age 49, European Americans drink more than African Americans (Caetano, Clark, & Tam, 1998). There are also more African American men and women who abstain from drinking entirely than European American men and women (Caetano & Clark, 1998), which could be a function of religion.

Peralta and Steele (2009) had an alternative theory as to why rates of drinking are so much lower among African Americans compared to European Americans. Many studies note

that African Americans drink less than European Americans, but there are not many that explore reasons behind this trend. In this study, the researchers predicted that African American students would drink less in fear of contributing to negative racist stereotypes, expectations of criticism from peers, and harsh university punishment because of their race (Peralta & Steele, 2009). Students were asked to respond to the following statements: a) Are your Non-European American University peers likely to be criticized for drinking 4 or more drinks in a row in one setting?; b) Are you likely to fear contributing negative stereotypes about your race if you use alcohol with University peers?; c) Are you likely to avoid the use of alcohol as a University student for fear of police bias based on your race?; d) Do you think that the University police are more likely to respond differently to alcohol use because of your race?; e) Do you avoid alcohol use with your University peers to avoid representing your race?; and f) How likely do you think it is that your University peer drinking companions will make racist remarks? Results confirmed their hypothesis that African American students felt like they were more likely to be criticized for drinking than European American students did. African American respondents who indicated that they would feel criticized by their European American peers for drinking were less likely to drink (Peralta & Steele, 2009).

**Hispanic Americans.** Hispanics are often treated as a single ethnicity, although the term "Hispanic" encompasses many different ethnicities and countries of origin. There is a lot of variability within each ethnic group, and thus categorizations like "Hispanic" are too broad and not representative of the entire racial group. Some studies examine those of Hispanic origin as one group, while other studies differentiate among the many different ethnicities. The literature analyzed by the researcher focuses primarily on Hispanics as one racial group and distinguishes between ethnicities within the article, but it is important to keep in mind that

statistics are not necessarily representative for each ethnic subgroup within the Hispanic racial group.

Most studies also focus on drinking patterns of Hispanic men; few look at women. Corbin, Vaughan, and Fromme (2008) found a significant difference between Hispanic American men and women's drinking habits. They attribute this to familial influence; many Hispanic cultures do not approve of women drinking, but believe it to be appropriate behavior for men (Corbin, Vaughan, & Fromme, 2008). Hispanic American women also perceived less alcohol use among their same-sex peers than men did (Corbin, Vaughan, & Fromme, 2008). Peer influence also played a role in drinking, but European American students were more influenced by their peers than Hispanic Americans (Corbin, Vaughan, & Fromme, 2008).

A study by Caetano, Clark, and Tam (1998) differentiated between different Hispanic sub-groups by country of origin and gender. Mexican American and Puerto Rican men have higher rates of heavy drinking than do Cuban American men (Hispanic Health and Nutrition Examination Survey, 1994). Corbin (2008) found that Hispanic American women are less likely to drink and hold more negative views of substance abuse; this is likely due to familial influence. Mexican American women have higher rates of abstinence and heavy drinking than Cuban American and Puerto Rican women. A study by Gilbert (1991) found that 75% of Mexican women who immigrated to the United States abstained from drinking. This percentage decreased with second and third generations. Alcohol dependence rates are higher among U.S. born Mexican-American women than Puerto Rican and immigrant Mexican women (Hispanic Health and Nutrition Examination Survey).

Another study examined the relationship between acculturation and alcohol consumption among Hispanic American women. Black and Markides (1993) used data from the



1982 to 1984 Adult Sample Person Supplement Questionnaire of the Hispanic Health and Nutrition Examination Survey to gather information about Mexican American, Puerto Rican, and Cuban American women ages 20-74. Participants were asked about their drinking habits and acculturation. Among all three of these Hispanic subgroups, acculturation and alcohol consumption were related. Alcohol consumption was positively correlated with acculturation among Mexican American women; the more acculturated they were, the more likely they were to consume alcohol. Cuban American and Puerto Rican women with higher levels of acculturation had a higher probability of being a drinker and more frequent rates of consumption (Black & Markides, 1993).

Mexican Americans display more alcohol related problems than Cuban-Americans and Puerto Ricans (Caetano, Clark, & Tam, 1998). One possible explanation for the high rates of heavy drinking among Mexican-American males is the “machismo” theory. Mexican-American men are encouraged to consume alcohol to appear strong and masculine, and the more alcohol they drink, the more masculine they are (Caetano, Clark, & Tam, 1998; Lawrence, Abel, & Hall, 2010). This theory, while interesting, has no real evidence. It is not multi-faceted enough and needs to take into account other aspects of Mexican American life. Future studies should examine why the “machismo” theory is so prominent among Mexican Americans, and explore differences in masculinity and the role of men between other Hispanic subgroups.

Caetano and Clark (1998) found that from 1984 and 1995, Hispanic men had increased rates of abstention from drinking, decreases in rates of frequent drinking, and stability in rates for frequent heavy drinkers. Caetano and Clark (1998) also found that although Hispanic men had higher rates of abstention, they also have slightly higher rates of frequent heavy drinking than white men (Caetano & Clark, 1998). This study is slightly outdated, but indicates promising

results for Hispanic Americans. As researchers conducted thorough, one-hour in-person interviews, they were likely to get more accurate results and qualitative information. The study is limited, however, in that it does not differentiate between Hispanic ethnic subgroups. It would be interesting to see how rates of abstention and heavy drinking changed over this time period among specific racial and ethnic subgroups.

**Asian Americans.** Asian Americans are widely considered to be the “model minority,” with high rates of abstention and low rates of heavy drinking (Caetano, Clark, & Tam, 1998). Very few Asians are in treatment for alcoholism, (Caetano, Clark, & Tam, 1998) and Asians have fewer alcohol-related problems in general than European Americans (Johnson & Nagoshi, 1990; Maikmoto, 1998). Similarly to Hispanic Americans, categorizing Asian Americans as one group leaves out a plethora of important information. A study by Caetano, Clark, and Tam (1998) differentiated between Asian subgroups. Among Japanese and Chinese Americans, more people drank than abstained. Among Filipino-Americans and Korean Americans, more people abstained than drank (Caetano, Clark, & Tam, 1998). Japanese Americans have the highest proportion of heavy drinkers, followed by Filipino Americans, Korean Americans, and Chinese Americans (Caetano, Clark, & Tam, 1998). In all subgroups, substantial sex differences exist with regard to alcohol consumption (Johnson & Nagoshi, 1990). Asian American women consumed much less alcohol than their male counterparts; they were more likely to abstain or consume far smaller amounts of alcohol (Caetano, Clark, & Tam, 1998). Overall, Asian Americans consume less alcohol over the course of their lifetimes than the national average (Caetano, Clark, & Tam, 1998).

Johnson and Nagoshi (1990) found slightly different drinking patterns within the Asian American subgroups. Although Japanese, Chinese, and Koreans share some cultural history,

they have very different alcohol consumption rates. The authors found that Koreans and Japanese had high levels of alcohol consumption, while Taiwanese and Chinese had low levels. Chinese mostly drink at formal gatherings, like weddings, and are not as likely to binge drink (Johnson & Nagoshi, 1990). The authors compare Chinese drinking habits to those of Jews, Italians, and Greeks, while Japanese and Koreans are more comparable to Northern Europeans or Americans, likely because of the high levels of acculturation of these two racial subgroups (Johnson & Nagoshi, 1990).

Lum, Corliss, Mays, Cochran, and Lui, (2009) also explored the difference in drinking behaviors, gender, foreign-born status, and college-related living arrangements among Asian college students of Chinese, Filipino, Korean, and Vietnamese descent. The sample included 753 undergraduate students ages 18-27. Drinking behavior was measured by asking participants the average number of drinks they had on: a) a weekend evening; b) a weeknight; and c) the last time they socialized. Choices were 0, 1-2, 3-5, 6-9, 10-14, and 15+ drinks. Results indicated that Korean and Filipino students had higher rates of alcohol consumption than Chinese and Vietnamese students (Lum et al., 2009). These results differ from Caetano, Clark, and Tam's study (1998), which found that Chinese-Americans drank more than Filipino Americans. However, the authors note that while Chinese might be more likely to drink, Filipino Americans are more likely to drink heavily.

Among Asian Americans, Chinese American men and women had the highest percentage of participants who abstained from drinking entirely. Vietnamese men and women had the highest percentage consuming 1-2 drinks. Filipino men had the highest percentage of consuming 3-5 and 6-9 drinks, and while Filipino women had the highest percentage of 3-5 drinks, Korean women had the highest percentage of 6+ drinks. (Lum et al., 2009). Among

women, foreign birth was associated with lower levels of alcohol consumption; those born in the U.S. were more likely to use alcohol. The same pattern was not found to be true among men (Lum et al., 2009).

While there is some differentiation between subgroups, these studies all found that Japanese Americans and Korean Americans have the highest levels of heavy drinking, while Chinese Americans have the lowest levels (Caetano, Clark & Tam, 1998; Johnson & Nagoshi, 1990; Lum et al., 2009). Makimoto (1998) and Zane and Kim (1994) reiterate these results. Asian Americans have lower rates of overall alcohol consumption, as well as drinking and heavy drinking rates at university levels. Makimoto found that Japanese Americans have the highest lifetime prevalence of heavy drinking, while Chinese Americans have the lowest. Zane and Kim (1994) found that Japanese Americans have the highest percentage of drinkers and heavy drinkers, followed by Koreans, Filipinos, Vietnamese, and then Chinese.

There are several hypotheses as to why Asian Americans drink less than the general population. First, low alcohol consumption rates could be related to cultural values. Chinese and Japanese cultures both place a large emphasis on harmony and conformity. Chinese culture emphasizes responsibility, and Japanese culture values interdependence and restraint (Caetano, Clark, & Tam, 1998). Asian cultures are also shame-oriented, and some families discourage getting drunk to preserve their social status and reputation (Johnson & Nagoshi, 1990). They also value the opinion of their elders, and elder's influence on alcohol consumption is of lesser importance in the United States (Johnson & Nagoshi, 1990; Makimoto, 1998). Many people think that genetic factors cause those of Asian descent to drink less than other racial groups (Johnson & Nagoshi, 1990).

Another possible explanation for lower drinking rates is the “flushing” response that happens to many Asian Americans when drinking. Flushing is a genetically transmitted aversive reaction to alcohol. Asians’ skin often becomes flushed red when drinking due to their bodies’ inability to digest alcohol well; fast flushing is associated with the absence of the ALDH-I isozyme (Johnson & Nagoshi, 1990). Asians can also get nausea, headaches, anxiety, and increased heart rates (Caetano, Clark, & Tam, 1998). However, there are many different opinions on this explanation. Johnson and Nagoshi (1990) examined the association of flushing with alcohol use, and found that flushing had very little influence on consumption. Instead, the authors found social, psychological, and cultural factors to play a larger role in influencing alcohol use (Johnson & Nagoshi, 1990).

In the United States, many people have a “get drunk” attitude. European American culture emphasizes recreational drinking, and people from other cultures succumb to this attitude more and more, especially as their families live in the United States for longer periods of time (Lawrence, Abel, & Hall, 2010). As with other racial minorities, the influence of American culture is a likely cause of drinking rates among Asian Americans. Later generations of Asian American immigrants drink much more than their foreign ancestors, and this is likely due to adaptation of American societal norms (Caetano, Clark, & Tam, 1998; Lawrence, Abel, & Hall, 2010; Makimoto, 1998). Zane and Kim (1994) found that students who reported high levels of acculturation reported higher levels of drinking, meaning these two factors are positively correlated. Asian Americans are adapting to American drinking patterns.

The influence of stress related to acculturation and social adjustment could also contribute to drinking among Asian immigrants (Caetano, Clark, & Tam, 1998). Acculturation of ethnic minorities often causes them to take on characteristics of the majority; in this case, they

drink more (Lawrence, Abel, & Hall, 2010). Many ethnic minorities report higher rates of drinking than whites (Caetano, Clark, & Tam, 1998). Stressors that can cause higher drinking rates include leaving one's homeland and adapting to life in the United States, socioeconomic status, and stress stemming from racism (Caetano, Clark, & Tam, 1998).

A study by Grant et al. (2004) revealed an increased risk in alcohol abuse among Asians. The prevalence of alcohol dependence as defined by the DSM-IV among Asian men ages 18-29 increased from 4.09% in 1991 to 10.22% in 2002 (Grant et al., 2004). For women, the number increased from 0.74% to 3.89% (Grant et al., 2004). These statistics are concerning, as Asian Americans are the fastest growing minority in the United States (Makimoto, 1998). As the Asian American population grows, the dynamic is also changing: there are now more Filipinos than Chinese, and the percentage of Vietnamese Americans continues to sharply increase (Makimoto, 1998). It is important for researchers to look at this "model minority" and consider which protective factors contribute to this groups' few alcohol related problems. It seems that acculturation results in worse drinking habits.

**Native Americans.** Native Americans are widely thought of as predisposed to heavy drinking and alcoholism (Caetano, Clark, & Tam, 1998). Alcoholism is definitely a prevalent and serious problem among Native Americans. According to Mail and Palmer (1985), the top ten leading causes of death in American Indians are all alcohol related, whether directly or indirectly. The CDC examined data from the 2009 Behavioral Risk Factor Surveillance System (BRFSS) to look at the prevalence, frequency, and intensity of binge drinking among racial groups. Results indicated that Native Americans, along with European Americans, had the highest prevalence of binge drinking. Although there was no statistical significance, the prevalence among Native Americans (15.4%) was 2.1% lower than for European Americans

(17.5%; Kanny, Liu, & Brewer, 2009). Among all racial groups, however, Native American binge drinkers consumed the largest number of drinks per episode: 8.4 drinks (Kanny, Liu, & Brewer, 2009). Statistics like this explain why many people associate Native Americans with binge drinking, and assume they lack control; society thinks of this as “the Indian way” (Caetano, Clark, & Tam, 1998).

The “Firewater Myth” dates back to the late 1600s when British settlers and colonists claimed to observe Native Americans drinking in excess and acting violent and lewd (Caetano, Clark, & Tam, 1998). This myth implies that Native Americans have a genetic vulnerability to alcoholism, (Mail & Johnson, 1993) and are more sensitive to the effects of alcohol (Garcia-Andrade, Wall, & Ehlers, 1997). While genetics do play a role in alcoholism, the firewater myth has no basis in fact (Mail & Johnson, 1993).

Garcia-Andrade, Wall, and Ehlers (1997) tested Native Americans’ sensitivity to alcohol. They recruited 40 healthy, non-alcoholic Mission Indian men between the ages of 18-25 and had them ingest either alcohol or a placebo to see how their bodies reacted. The results were in direct contradiction to the firewater myth; Native Americans are not more sensitive to alcohol. In fact, results showed that Mission Indian men and people with Native American heritage in general might be less sensitive to the effects of alcohol (Garcia-Andrade, Wall, & Ehlers, 1997). While this study provides interesting information, it is limited in the homogeneity of the sample. The study only tested young Mission Indian men, so it is unknown if results are consistent across age, sex, and different Native American tribes. Future studies should test Native Americans from a variety of backgrounds to see if results are valid.

Native Americans also experience discrimination by categorization. Like other racial minorities, Native Americans are often clumped together as one homogenous racial group. In

fact, there are over 500 tribes in the United States (Caetano, Clark, & Tam, 1998; Mail & Johnson, 1993). It is also easy to forget that Native American heritage does not necessarily indicate cultural affiliation, simply heritage (Garcia-Andrade, Wall, & Ehlers, 1997). Alcohol use varies greatly among the tribes, and it is very important to recognize heterogeneity among Native Americans. Navajos, for example, view drinking as socially acceptable, while the Hopi believe drinking to be irresponsible (Caetano, Clark, & Tam, 1998). Despite popular belief, many Native Americans abstain from drinking entirely.

On the other end of the spectrum, there are many Native Americans who do engage in heavy drinking. This is likely due to societal factors since Native Americans have a history of having been treated with great oppression in this country. Many live impoverished lives and watch their culture slip away (Caetano, Clark, & Tam, 1998). Native Americans have high rates of unemployment, and various mood and social disorders (Caetano, Clark, & Tam, 1998). Those who do drink heavily likely do so because they feel like they have no choice. Another explanation for heavy alcohol use theorizes that Native Americans drink heavily to initiate an alternative mindset necessary for some traditional practices (Garcia-Andrade, Wall, & Ehlers, 1997).

When discussing Native American drinking habits, it is important to understand their history and initial exposure to alcohol. Native Americans had no knowledge of alcohol before Europeans came to America and taught them "how to drink." Thus, they had no role models for drinking behavior and no prior drinking experience, which led to alcohol abuse and dependence (Frank, Moore, & Ames, 2000; Mail & Johnson, 1993). Europeans encouraged Native Americans to drink to help them make deals and celebrate, and Native Americans complied because they were tolerant (Mail & Johnson, 1993). The pervasive drinking among European colonists spread



to Native Americans, and this led to addiction—Native Americans wanted more (Mail & Johnson, 1993). The harmful drinking patterns established when they were first introduced to alcohol have persisted today (Frank, Moore, & Ames, 2000). The “determinants of health” approach to drinking incorporates physical, social, and environmental factors influence over human health, as well as biological factors (Frank, Moore, & Ames, 2000). Advocates of this approach believe that understanding Native American history will help prevent future problems. Native Americans must be held responsible for their behavior, but acknowledging that alcohol misuse is a “recent” problem will demonstrate how Native American culture thrived without alcohol for centuries.

Today, drinking has become a fact of life for many Native Americans, and many think of it as a “Native American” thing to do. It has become a habit and a method of socialization (Mail & Johnson, 1993). There are many theories behind why Native American levels of alcohol consumption and alcoholism are so much higher than other racial groups. These include biological reasons (which were disproved), psychological reasons—low self-esteem and anxiety, and sociocultural factors—they drink due to cultural disruption and poverty (Mail & Johnson, 1993). American influence has played a big role on Native American drinking habits. They have been driven off their land and lost many of their traditions (Garcia-Andrade, Wall, & Ehlers, 1997). Most research focuses on alcoholism and alcohol abuse among Native Americans, but few studies look into those who drink moderately or quit drinking (Mail & Johnson, 1993).

**Summary.** The differing rates of alcohol consumption among racial and ethnic groups lead to many interesting questions. Why are consumption levels so significantly imbalanced among ethnicities, and what can be done to lower rates overall? There are many theories behind what causes alcohol dependency and abuse, and what causes one to partake in binge

drinking. It is important to understand the reasons behind drinking, so that intervention and prevention programs can be focused and targeted. However, speculating about problematic drinking without evidence leads to faulty theories and does not help improve problematic drinking practices. When conducting research, qualitative questions that get to the root of the drinking behavior are going to be very useful. In reality, there is not one reason that certain groups of people have tendencies for alcohol abuse, dependence, or binge drinking.

Alcohol abuse, binge drinking, and dependence pose problems for individuals in every racial and ethnic group, but some more than others. Cranford, McCabe, and Boyd (2006) surveyed 4,580 undergraduate students of different racial and ethnic groups, and found that European Americans and Hispanic Americans had significantly higher levels of binge drinking than African Americans and Asian Americans.

Native Americans have the highest rate of prevalence and abuse, while Asian Americans have the lowest (NIAAA, 2005; SAMHSA, 2008). Even within these two racial groups, much discrepancy exists. The Hopi people, for example, believe drinking to be irresponsible (Caetano, Clark, & Tam, 1998). Koreans and Japanese have high levels of alcohol use compared to other Asian American subgroups, yet Asians are still categorized as one homogeneous group (Lum et al., 2009; Johnson & Nagoshi, 1990). Compared to other racial groups, Asian Americans have lower rates of alcohol consumption and are at a lower risk for alcohol abuse (Makimoto, 1998).

After Native Americans, European Americans have the highest rates of binge drinking and alcohol abuse (NIAAA, 2005; SAMHSA, 2008). However, European Americans constitute the majority of the population in the United States, making their drinking habits very troublesome. European American college students reported more drunk episodes per week than any other racial group (Lawrence, Abel, & Hall, 2010), and their drinking habits influence racial minorities.

Most studies indicate that Hispanic Americans have the next highest rates of binge drinking and alcohol consumption, although as with Asian Americans and Native Americans, there is much variability between subgroups and between sexes. Hispanic women have much lower rates of alcohol consumption than Hispanic men, and Mexican American and Puerto Rican men have higher rates of drinking than Cuban American men (Caetano, Clark, & Tam, 1998).

Clearly, differences exist. These differences cannot be attributed to one factor, but rather a variety of causes. Acculturation, genetics, familial influence, history, cultural values, peer pressure, and social status all contribute to drinking habits of different racial groups. It is important to pinpoint what influences drinking habits for each race/ethnicity, so influences can be studied in depth and prevention and intervention programs can appropriately target racial and ethnic groups.

### **Socioeconomic Status**

Socioeconomic status (SES) incorporates economic status, income, social status, education, and occupation (Adler, Boyce, Chesney, Cohen, Folkman, Kahn, & Syme, 1994). The effect of SES on alcohol use exhibits a greater variance of results than do race and religion. Previous research has uncovered contradictory results, with some studies saying that lower SES communities are more likely to abuse substances than higher SES communities (Lawrence, Abel, & Hall, 2010; Reinherz, Giaconia, Hauf, Wasserman, & Paradis, 2000), and others saying high SES correlates with alcohol abuse (Adler et al., 1994; Humensky, 2010). Humensky (2010) states that in youth, lower SES correlates with higher substance abuse, and in adulthood, higher SES indicates higher levels of substance abuse.

**SES and Alcohol Use: Negative Correlation.** Reinherz et al. (2000) studied 360 respondents from 1977 to 2000, and found that low family SES and larger family size corresponded with higher probability of substance abuse in early adulthood (Reinherz et al., 2000). SAMHSA also associates low SES with substance abuse, and found that individuals with low family income have a higher rate of past-year use of any illicit drug (SAMHSA, 2008). The 1992 National Health Interview Survey alcohol found a negative correlation between alcohol use and SES (Goodman & Huang, 2002).

Personal education levels are also correlated with alcohol abuse. A study by Crum, Helzer, and Anthony (1993) examined how individuals' highest completed education level corresponded with their risk for an alcohol disorder. They recruited 11,817 participants to study over four years, all of whom were deemed at risk for the development of alcohol abuse or dependence based on a probability sample selection of census tracts, where they were living, and their age at baseline. Participants were divided into categories based on the highest level of education completed. Of these candidates, 160 developed an alcohol disorder. Individuals who dropped out of high school were 6.34 times more likely to develop alcohol abuse or dependence than those with a college degree (Crum, Helzer, & Anthony, 1993). Individuals who did not complete college were three times more likely to develop an alcohol problem compared to those with a degree (Crum, Helzer, & Anthony, 1993). The differences were stronger among younger adults, and there was some interaction between age group and educational level (Crum, Helzer, & Anthony, 1993).

These results are interesting in that they contrast with findings about parental education levels; as parental education levels increased, so did participants' alcohol use. In this study, as individual education increased, the chances for alcohol abuse were lower. The

discrepancy between parental education level and individual education level could be because as people become more educated, they have a greater understanding of the detrimental effects of alcohol. However, simply because when one's parents are educated does not mean they are being taught about alcohol's adverse health effects; perhaps they are more likely to have parents with a well-stocked alcohol cabinet.

Van Oers (1999) examined the relation between SES, defined as education level, with alcohol use. Eight thousand Dutch people ages 16-69 years were asked what alcoholic drinks they prefer, how many days a month they drink, how many drinks they have per session, and if they have consumed more than five drinks per session on any day in the past six months. Participants were then categorized into: abstainers, light drinkers, moderate drinkers, and excessive drinkers. Excessive drinkers were further subcategorized. Van Oers found that there were the most excessive and very excessive drinkers in the lowest educational category, indicating a negative correlation between SES and excessive drinking (1999). However, the negative correlation was not linear across drinking categorization, so those with the highest education did not drink the least amount.

**SES and Alcohol Use: Positive Correlation.** Humensky (2010) found a positive correlation between SES and alcohol use. Humensky used data from the National Longitudinal Survey of Adolescent Health, in which 20,745 students completed the interview from grades 7-12. The follow up study in 2001-2002 took place when the students were ages 18-27. In this study, SES was measured by parental education and income. Some evidence shows that alcohol consumption decreases as prices of alcohol increase (Humensky, 2010), supporting the theory that those of low SES are less likely to drink. Peralta and Steele's (2009) study also echoed

these results: students with a personal income of less than \$12,001 had a greater chance of abstaining from drinking and not binge drinking.

Goodman and Huang (2002) also examined the relationship between SES and substance abuse. They hypothesized that substance use was associated with SES in a graded linear fashion, meaning as SES increased, so would substance use (Goodman & Huang, 2002). The researchers used data from the National Longitudinal Study of Adolescent Health, from students in grades seven through 12. The first wave of data was collected in 1995 from 15,112 adolescents, whose parents answered questions about their education and income levels. Of the teens surveyed, 55% had used alcohol, and alcohol use was associated with income in a direct, positive fashion (Goodman & Huang, 2002).

Higher parental education was associated with a higher chance of binge drinking, marijuana use, and cocaine use among adolescents and young adults (Humensky, 2010). An individual with a college-educated parent has 1.458 greater chance of binge drinking in early adulthood than an individual with a high-school educated parent (Humensky, 2010). Higher household income was also associated with significantly higher rates of binge drinking (Humensky, 2010). Overall, higher SES in adolescence correlated to higher rates of binge drinking in early adulthood (Humensky, 2010). These results were consistent for whites only; none of the results for non-whites were statistically significant (Humensky, 2010). This could be because parents with higher education and income levels are predominantly European American, and more likely to send their children to college, where binge drinking is a predominant problem.

A study by Adler et al. (1994) also found that a positive correlation exists between alcohol consumption and SES, as measured by levels of education and employment status.

Much of the focus on substance abuse has centered around those of low SES, and can cause educators and parents to be less focused on the issues that face adolescents of high SES (Humensky, 2010). Many of the issues involving alcohol misuse are applicable to everyone, regardless of SES. Because studies consistently show inconsistent and contrasting results, educators should look at other risk factors to determine on whom to focus prevention programs, and people of all socioeconomic statuses should be included.

**SES and Alcohol Use: No Correlation/Inconsistent Results.** Van Oers, Bongers, Van de Goor, and Garretsen (1999) found that among those with the lowest levels of education, women abstain from drinking twice as often as men. For the highest education levels, the percentage of abstainers was the same, regardless of sex. Light or moderate drinking was linked to individuals of high SES, but results were inconsistent due to differences in what is considered heavy alcohol consumption (Van Oers, Bongers, Van de Goor & Garretsen, 1999).

Other studies, such as that by Richter, Leppin, and Gabhainn (2006), found that SES had only a limited relationship on adolescent alcohol use, and was stronger for girls than boys. The authors found that parental occupation had a greater impact than family affluence. Another study by Knibbe and Swinkels (1992), found a negative correlation between high levels of alcohol consumption and SES in men, and no relation in women. These mixed results seem to be a pattern, as many studies about SES and alcohol use produce inconsistent results. Tuinstra, Groothoff, Van Del Heuvel and Post (1998) examined the SES differences in risk behavior among adolescents in the Netherlands. In this study, SES was measured by the educational level and occupational status of parents. Results indicated an absence in the relationship between SES and health risk behaviors. The only SES indicator that had a significant effect on alcohol consumption was the occupational status of the father. The highest rate of alcohol

consumption existed among the median SES group for men and the highest SES group for women (Tuinstra et al., 1998). This study contributes to existing research that no real or measurable relationship between SES and alcohol use exists.

The discrepancy between the studies could be the result of the broad definition of socioeconomic status. SES is very multidimensional, and can be difficult to examine as there is no single measure of SES. While abstaining from drinking could be correlated with a low personal income, it might be correlated with a high level of education. Reinherz et al. (2000) does not break down SES by subcategory, making it difficult to pinpoint what specific factors within SES could be correlated with high rates of alcohol use. It is important to distinguish between income, education, occupation, and social status—all of which are components of SES.

### **Discussion**

Literature reveals an evident connection between alcohol use and sociodemographic factors. It is important to study how sociodemographic factors relate to alcohol consumption rates, as alcohol misuse can cause serious health problems. Alcohol abuse damages the brain, internal organs, nervous and digestive systems, and is linked to cancer, osteoporosis, heart disease, respiratory disease, strokes, and hypertension (NIAAA, 2011; Schmidt & Popham, 1975). It is also linked with mood and affective disorders, such as schizophrenia, anxiety disorders, depression, antisocial personality disorder, and bipolar disorder (Burns & Teesson, 2002; Regier et al., 1990). Individuals with alcohol use disorders are also more likely to be in accidents, be involved in rape and violence, and attempt and complete suicide (Leigh, 1987; NIAAA, 2011).

Religious preference affects alcohol use; some religions allow alcohol use (nonproscriptive religions) and other prohibit it (proscriptive religions; Ford & Kadushin, 2002; Lambert et al.,



2010). Membership in a religious group is associated with a decreased likelihood of alcohol dependence (Adler et al., 1994; Ford & Kadushin, 2002; Lambert et al., 2010). Non-religious individuals have the highest rates of alcohol use and misuse, as well as the greatest percentage of occasional and frequent heavy drinkers (Beeghley, Bock, & Cochran, 1990; Michalak, Trocki, & Bond, 2007).

Christians have varying rates of drinking depending on sect. Episcopalians, Lutherans, and Presbyterians (Liberal Protestants), have an 80% rate of alcohol use, compared to Methodists, Baptists, and Miscellaneous Protestants (Conservative Protestants) with a rate of 60% (Bock, Cochran, & Beeghley, 1987). Liberal and Conservative Protestants have similar rates of misuse. Catholics have a high rate of use at 86% (Bock, Cochran, & Beeghley, 1987; Michalak, Trocki, & Bond, 2007). Muslims have high levels of abstention from drinking; over 70% abstain entirely (Michalak, Trocki, & Bond, 2007). This could be because Islam strictly prohibits alcohol consumption. Jews have a high percentage of drinkers, at 85%, but a low percentage of alcoholism and alcohol abuse (Glassner & Berg, 1980). Alcohol problems have been rare in Jewish communities for the last 2,500 years, and one study attributes this to the association of alcohol as an outgroup characteristic, Jewish families teaching children drinking in moderate, peer group insulation, and their ability to avoid situations that might encourage binge drinking (Glassner & Berg, 1980).

Most surprising about the differences between religious groups was the lack of relationship between use and misuse. Religious preference clearly has an effect on whether or not one chooses to consume alcohol, but not necessarily whether one binge drinks or has an alcohol use disorder. Both proscriptive and non-proscriptive religions have similar rates of misuse, and Jews have the highest rates of use but one of the lowest rates of misuse. This shows that teaching

complete abstinence from alcohol is not necessarily effective. Consuming small amounts of alcohol generally does not cause problems; it is when consumed in excess that alcohol can be problematic. Those who advocate consumption in moderation have similar, or often lower rates of misuse. Future studies should test the effects of promoting drinking in moderation to religious adults, and examine how this impacts patterns of misuse among religious sects.

Religiosity has a much greater effect on misuse than denomination. Those who are more religiously dedicated, or have higher levels of religiosity, are less likely to consume alcohol and have lower rates of abuse and dependence (Bock, Cochran, & Beeghley, 1987; Michalak, Trocki, & Bond, 2007; Smith, Phillips, & Brown, 2008; Stevens-Watkins & Rostosky, 2010). The more frequently an individual attends religious services, the less likely they are to consume and abuse alcohol (Beeghley, Bock, & Cochran, 1990; Ford & Kadushin, 2002). Prayer frequency contributes to lower alcohol consumption rates and fewer alcohol-related problems (Lambert et al., 2010). One study showed a causal relationship between prayer and alcohol consumption, finding that prayer reduced drinking frequency by 50% among college students (Lambert et al., 2010). The reference group theory states the people's attitudes, behaviors, and beliefs are influenced by their peers and group membership; religious groups serve as a social outlet and support system, and people are likely to imitate drinking patterns of their social group (Beeghley, Bock, & Cochran, 1990; Ford & Kadushin, 2002).

Many studies find correlational relationships between religion and alcohol consumption, but few find causal relationships. One of the most interesting parts of examining religion was the causal relationship found between prayer and drinking. Why does this relationship exist? What is it about prayer that decreases rates of consumption? One might argue that is not the practice of prayer itself, but rather the healing, meditative aspect. When one prays, they are more relaxed

than usual and might discover an activity that they enjoy that simultaneously de-stresses them. The practice of prayer might alleviate stress that drinking once did. Future studies should test the effects of meditation and cognitive behavioral therapy on drinking, to see if a different state of mind, rather than prayer, is the factor that reduces drinking.

Racial and ethnic groups, and even subgroups, have varying levels of alcohol consumption and misuse. Of all racial groups, Native Americans have the highest rates of alcohol abuse and binge drinking (Kanny, Liu, & Brewer, 2009; NIAAA, 2005). Much of this can be attributed to their history and the destruction of their culture in America. However, prior to contrary belief, they are not more genetically predisposed to alcohol use (Garcia-Andrade, Wall, & Ehlers, 1997). European American students get drunk more often and experience more negative effects from drinking than non-whites (Cranford, McCabe, & Boyd, 2006; Lawrence, Abel & Hall, 2010). Other than Native Americans, they have the highest rates of drinking overall. After European Americans, Hispanic Americans have the next highest rate of alcohol misuse. There is much variability between Hispanic subgroups, with Mexican Americans and Puerto Ricans drinking more than Cuban Americans. One theory behind high rates of drinking among Mexican Americans is the machismo theory, which implies that they drink more to appear strong and masculine (Caetano, Clark & Tam, 1998; Lawrence, Abel, & Hall, 2010). African Americans have relatively low rates of alcohol consumption, and much of this is due to the high levels of religiosity and strong ties African Americans have with their church and community (Smith, Phillips, & Brown, 2008). Asian Americans have the lowest level of alcohol abuse of all racial groups studied, but there is much variability amongst subgroups. Japanese Americans have the highest percentage of drinkers and heavy drinkers, followed by Koreans, Filipinos, Vietnamese, and then Chinese (Zane & Kim, 1994). Explanations for the overall low levels of alcohol use

among Asians include their culture, history, family values, and the genetic flushing response to drinking (Caetano, Clark, & Tam, 1998; Johnson & Nagoshi, 1990; Makimoto, 1998).

One interesting aspect of the relationship between race/ethnicity and alcohol consumption is the drinking habits of African Americans. African Americans are often stereotyped as violent and associated with gangs, but in reality, there is a large African American presence in the church. It would be interesting to study how levels of African American religiosity vary by location; for example, does religion have the same impact on drinking among African Americans in Oakland compared to Texas? Even looking at drinking rates by location irrelevant to religion would be interesting. Other future studies should further examine within group as well as between-group differences with regard to race/ethnicity. It would be interesting to explore why subgroups, especially among Asian Americans and Hispanic Americans, have such different levels of alcohol use.

The results surrounding SES were very contradictory. Some studies found that low SES correlated with high probability of substance abuse (Lawrence, Abel, & Hall, 2010; Reinherz et al., 2000). Other studies found that a high SES positively correlates with alcohol abuse (Adler et al., 1994; Humensky, 2010). Still other studies found no relationship or mixed results (Goodman & Huang, 2002; Groothoff, Van Del Heuvel, & Post, 1998; Richter, Leppin, & Gabhainn, 2006) others. Socioeconomic status is a broad term encompassing many factors, including income, education, occupation, and social status. It is difficult to study SES in general, so instead, researchers should study each component of SES separately. Future studies should also see how age and gender affect SES. For example, does SES impact college students' consumption rates differently than adults? How does gender affect SES and drinking rates?

As the United States becomes increasingly diverse, it is important to evaluate how “American” habits affect minority groups. North America has the highest rates of binge drinking; as the U.S. population continues to grow, will the rates of problematic drinking increase with it? Unless effective prevention programs that target at-risk youth are implemented, alcohol abuse disorders will remain prevalent. By researching how different demographic factors correlate with alcohol use, researchers will know what to focus on in prevention programs with particular populations. For example, research testifies that prayer negatively correlates with alcohol use (Lambert et al., 2010). Researchers can use this information to encourage at-risk individuals and the general population to take up prayer, even if they do not adhere to a particular religion. As alcohol disorders frequently co-occur with mental health disorders and take an enormous physical toll on the body, it is important to implement prevention programs directed at the at-risk population, educating them of these ramifications.

Prevention programs should vary depending on the intended population. It is important to understand racial and ethnic patterns of substance use, as well as motives behind drinking, so that prevention and treatment programs can be targeted at high-risk individuals. Different cultural values influence different religions, races/ethnicities, and populations, so programs that might be effective to one population would be completely ineffective for another. Drinking motivations also differ by gender and age (Kunstche, Knibbe, Gmel, & Engels, 2006). Social motives to drink are prominent in collectivistic countries and countries with social opportunities and pressure (Kunstche, Knibbe, Gmel, & Engels, 2006).

Interventions targeting peer influence would be more effective for European Americans than other racial groups, as peer’s drinking habits are the biggest influence on European

Americans alcohol use (Corbin, Vaughan, & Fromme, 2008). Programs focusing on family involvement and bonding would be more effective for Hispanic Americans, as family plays a larger role in influencing Hispanic Americans' decisions to drink (Corbin, Vaughan, & Fromme, 2008). Intervention programs targeted at Native Americans must focus on community development and understanding Native American history and culture (Mail & Johnson, 1993). They also must take into account different tribes varying views on alcohol consumption, risk factors for alcohol abuse, and acknowledge the use of alcohol in some traditional ceremonies (Frank, Moore, & Ames, 2000). Programs targeting Asian Americans should focus mostly on Japanese American and Korean American populations (Johnson & Nagoshi, 1990; Lum et al., 2009). As Asian cultures emphasize harmony, conformity, and responsibility (Caetano, Clark, & Tam, 1998), programs could emphasize cultural values and traditions, and remind Asian Americans to practice restraint. Among African Americans, familial influence as well as religiosity has a significant effect on individuals' decisions regarding alcohol consumption. Religion plays an important role in the lives of many African Americans, especially as compared to other racial groups (Ford & Kadushin, 2002; Lawrence, Abel, & Hall, 2010; Stevens-Watkins & Rostosky, 2010). Church membership brings communities together and helps form social connections (Stevens-Watkins & Rostosky, 2010). Prevention programs targeting African Americans should include family members and stress community values. African Americans are likely to mimic the drinking patterns of their peers, and if their peers are similarly involved in the church and community, avoiding peer pressure to drink will be much easier (Stevens-Watkins & Rostosky, 2010).

Flory et al. (2006) highlighted the need for prevention programs focused on development. A developmental prevention approach would examine what sociocultural factors

influence racial subgroup categorization among adolescents. For example, why do some European Americans begin drinking in sixth grade, while others begin in ninth? By identifying these sociocultural influences, researchers and teachers can know at what age and to which populations they should implement particular prevention and intervention ideas. Researchers need to examine within-group approaches regarding race/ethnicity and religion, as subgroups have varying levels of substance use. Developmental trajectories will help researchers identify and target at risk youth so prevention programs can be as effective as possible.

The current studies and literature contain limitations and shed light on what future studies should incorporate. Studies should ask about why people choose to drink as well as demographics, so prevention programs can focus on those particular factors. Much of the current research is outdated and does not distinguish between different subgroups of race/ethnicity and religion. As members of particular racial and religious groups are not homogenous, it is important to understand within-group differences as well as between-group differences. Spirituality is hard to measure, but it would be interesting to examine if patterns surrounding spirituality are similar to those surrounding religion.

More studies on specific information about race/ethnicity, religion, and SES are needed. Gender is also a very interesting demographic factor to study, as drinking patterns between men and women vary according to race/ethnicity and religion. Many differences exist between men and women's drinking habits in racial and ethnic groups, and it would be interesting to see if and how gender differences relate to religion and SES. A future literature search would include gender as another demographic factor. As acculturation has a large effect on substance use, studies should inquire about participants' length of time spent in the U.S., and/or when their family came to the U.S. It would also be interesting to see how acculturation affects

alcohol consumption levels between and within racial and religious groups. For example, does acculturation have a greater impact on alcohol consumption for Mexican-Americans than Cuban-Americans? Or Japanese Americans? Consistency with vocabulary and terminology is also crucial; there are many different interpretations of what constitutes alcohol abuse, alcohol use disorders, and binge drinking. It is important to standardize these definitions to improve future research.

It is very crucial to study alcohol consumption because of the damaging effects alcohol abuse has on physical health, mental well-being, and overall welfare. Alcohol abuse is a very serious problem, and educating the population about the dangers surrounding drinking is of pivotal importance. Looking at sociodemographic correlates helps one understand why differences exist and what can be done to prevent and reduce misuse. It is important to continue to study how demographic factors correlate with alcohol consumption, as this research will save time, money, and people's lives.



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## Appendix A

### DSM-IV criteria for substance abuse and dependence:

Substance abuse is defined as a maladaptive pattern of substance use leading to clinically significant impairment or distress as manifested by one (or more) of the following, occurring within a 12-month period:

1. Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (such as repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; or neglect of children or household).
2. Recurrent substance use in situations in which it is physically hazardous (such as driving an automobile or operating a machine when impaired by substance use)
3. Recurrent substance-related legal problems (such as arrests for substance related disorderly conduct)
4. Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (for example, arguments with spouse about consequences of intoxication and physical fights).

Substance dependence is defined as a maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring any time in the same 12-month period:

1. Tolerance, as defined by either of the following: (a) A need for markedly increased amounts of the substance to achieve intoxication or the desired effect or (b) Markedly diminished effect with continued use of the same amount of the substance.
2. Withdrawal, as manifested by either of the following: (a) The characteristic withdrawal syndrome for the substance or (b) The same (or closely related) substance is taken to relieve or avoid withdrawal symptoms.
3. The substance is often taken in larger amounts or over a longer period than intended.
4. There is a persistent desire or unsuccessful efforts to cut down or control substance use.
5. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects.
6. Important social, occupational, or recreational activities are given up or reduced because of substance use.
7. The substance use is continued despite knowledge of having a persistent physical or psychological problem that is likely to have been caused or exacerbated by the substance (for example, current cocaine use despite recognition of cocaine-induced depression or continued drinking despite recognition that an ulcer was made worse by alcohol consumption).