RACE AND ALCOHOL CONSUMPTON: THE EFFECTS OF RACE AND ALCOHOL EXPECTANCIES IN A COLLEGE POPULATION

by

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(Under the Direction of Lily D. McNair, Ph.D.)

ABSTRACT

This study examined the influence of ethnicity and beliefs regarding alcohol use on consumption patterns in a sample of Southeastern college students. ANOVAs revealed a significant group effect for amount of alcohol consumed as well as strength of expectancies held. Specifically, Caucasian participants held expectancies related to the use of alcohol more strongly than did African-American students, as well as consumed more alcohol then African-American students. Further research is recommended to explore the social and cultural settings in which alcohol consumption occurs within these groups.

INDEX WORDS: Alcohol Expectancies, Race, Alcohol Consumption

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INTRODUCTION

Alcohol use has been the subject of much attention because of its disinhibitory effects. High social costs of the use of alcohol include treatment of addicted individuals, risky sexual behavior leading to increased risk of both contracting AIDS and becoming a victim of sexual assault. Further social costs of alcohol use include the increased chance of individuals performing violent acts. Almost a decade ago, one report on the economic costs of alcohol abuse estimated that about $86 billion would be spent on factors such as productivity loss, treatment of alcohol abuse and mortality resulting from alcohol use (Miller & Kelman, 1992).

While the high social costs of the overuse of alcohol apply to all ethnic groups, specific groups have been portrayed as more likely to experience the negative consequences of alcohol use. Significant attention has been paid to alcohol consumption rates of Caucasian college students because of their high rates of consumption, particularly binge drinking, and concern regarding negative consequences of alcohol consumption (Marlatt & Rohsenow, 1980). A second group given much attention regarding their use of alcohol are African Americans. Here the focus has often been on alcohol use during adulthood, particularly with regard to crime and poverty statistics (Caetano,1997). Further, evidence suggests differences in drinking patterns among African Americans that may be reflective of social attitudes towards alcohol. Such attitudes may have coincided with political changes in the American temperance

movement as well as demographic shifts in African-American populations. Recent data which suggest incomplete and possibly inaccurate pictures of alcoholism in the African-American community point to a need to further assess rates of alcohol consumption and setting of African-American drinking in comparison to Caucasian consumption and drinking patterns, as well as assess possible causal mechanisms for these differences. Throughout, the terms race and ethnicity have been used interchangeably as deemed appropriate by the prior use of these terms in studies described. However, the term "race," traditionally used in reference to genetic and biological similarities, may be less accurate than the construct investigated in this study, "ethnicity" which refers to a shared history, culture, language, values or religion. In the following review, terminology used to refer to race is identical to the terminology used by the authors of the study being discussed. Also, the terms Caucasian and White are used synonymously, as are the terms African American and Black.

Epidemiological Data Regarding Alcohol Use

Community surveys carried out by the National Institute of Mental Health in the early 1980s report significant differences in total lifetime rates of alcoholism between African Americans and Caucasians. For example, between ages 18-29, 28.31% of Caucasian men in contrast to 12.61% of African-American men exhibit a lifetime prevalence of alcoholism. These numbers show a similar trend for women. Caucasian women exhibit a lifetime prevalence of alcoholism of 7.5% while African-American women have a lifetime prevalence of 4.19%. However these trends reverse themselves when inspecting rates for the ages between 45 and 64 years (Group for the Advancement of Psychiatry [GAP], 1996). Here, 19.75% of Caucasian men and 32.99% of African-

American men exhibit alcoholism. In contrast, 2.60% of Caucasian women and 7.33% of African-American women exhibit alcoholism during this age group. According to a report by a committee on cultural psychiatry, "Alcoholism has substantial effects on the morbidity, mortality, and socioeconomic status of African Americans. Understanding why is a challenge of some import" (Group for the Advancement of Psychiatry, 1996). Epidemiological data suggest that the alcoholism prevalence for African Americans is low in the young adult group, however for Caucasians during young adulthood the prevalence of alcoholism is high.

Additionally, conflicting results have been presented in terms of African American versus Caucasian drinking patterns. Some research suggests that African Americans drink more than Caucasians (Christmon, 1995). Not only do drinking rates differ, but African Americans may also have more detrimental psychological and environmental consequences regarding drinking (GAP, 1996). Other studies suggest that Caucasians have historically consumed more alcohol as well as received more positive reinforcement for drinking (Reese & Friend, 1994). For example, Pavkov (1993) found that African-American participants reported higher severity of substance misuse as well as reported using more substances than Caucasian participants. In contrast, Collins (1993) found that African Americans were less likely than Caucasians to abuse alcohol. African Americans who did abuse alcohol were less likely to feel that they had a support system in contrast to Caucasians who abuse alcohol (Ford & Carr, 1990). Christmon (1995) comments that historical patterns of alcohol use in the African-American community point to low use of alcohol until migration to the North at the turn of the century. At this time, African Americans began to abuse alcohol.

It is possible that Caucasian young adults may drink alcohol in different contexts than African-American young adults or perhaps have different reasons for the consumption of alcohol. For example, Caucasian students may consume alcohol as a consistent portion of their socialization routines. This may not be the case for African-American students. Anecdotal evidence suggests that African-American students consume alcohol less often in social situations, such as parties, than do Caucasian students. And often, alcohol consumption is limited to specific situations for African-American students. Examples of such situations include game playing gatherings and cook-outs. Further, Caucasian students may regard the use of alcohol in social situations as patently, "normal," while African-American students may view alcohol's use as out of the ordinary. Trends regarding drinking differences between African Americans and Caucasians suggest that later in life, African-American adults consume more alcohol than Caucasian Americans. Again, these changes may be caused by shifts in motivations for drinking in adulthood. For older Caucasian adults drinking in social situations may continue to be seen as normal, however in smaller quantities than during young adulthood. Evidence suggests that older African Americans may also continue to drink in social situations (Christmon, 1995).

Conflicting data such as these may suggest that researchers are examining different populations of African Americans and Caucasians. However, a more plausible explanation may be that the literature has overlooked the underlying mechanism that may accurately explain alcohol use among different cultural groups.

Several psychosocial correlates of alcohol consumption among African-American college students have been examined (Ford & Carr, 1990). These researchers

investigated social support, assertiveness, grade point average, parental approval of drinking, familial drinking problems, negative peer influence and age at first drink as predictors of drinking hard (distilled liquor) alcoholic beverages among African-American students. Results revealed that the younger age at time of first drink, parental approval of alcohol consumption and number of friends who drank were variables likely to influence participants to consume fermented as well as distilled alcoholic beverages.

While epidemiological data regarding differences between African American and Caucasians have been examined, few theoretical explanations for their occurrence have been advanced. Collins (1993) addresses this by focusing on the failure to examine differences within ethnic groups rather than simple epidemiological differences between ethnic groups. Her review points out that an underlying theoretical mechanism for explaining differences between ethnic groups has yet to be explored.

Studies of Alcohol Use Regarding Differences Between Ethnic Groups

One possible explanation for differences between groups may be that African Americans and Caucasians receive differing reinforcement for consuming alcohol and therefore have different reasons for alcohol consumption. According to this hypothesis, social learning factors may help shape alcohol use and consequent abuse. An examination of 956 African-American students' drinking patterns in a predominantly Caucasian university found that African-American students consumed less alcohol than Caucasian students (Globetti et al., 1996). Perhaps more interestingly, differences were found in the ways and context in which African-American students drank in contrast to Caucasian students. African-American students drank responsibly and alcohol was only consumed socially in order to increase recreational activity. Further, African-American

students exhibited strong peer disapproval of alcohol use. In contrast, 60% of Caucasian students attended parties where most or all of the time the majority were intoxicated. Furthermore, almost 40% of the Caucasian students reported getting high themselves. Social context may in fact be a major factor in determining alcohol consumption rates for African Americans as well as Caucasians. Factors linked to social context such as alcohol expectancies may explain differences between drinkers regardless of ethnicity. Again, however, results are conflicting. For example, Humara (1999) examined situational determinants of alcohol abuse between African-American and Caucasian college students at a medium-sized regional university. Two hundred college students completed a confidential questionnaire regarding alcohol consumption patterns. However, the data revealed no effects of race on amount of alcohol consumed.

Concepts such as acculturation and environmental setting may also affect alcohol use. Dawkins (1996) compared African-American metropolitan and non-metropolitan eighth graders on perceptions of substance use among their peers. In metro-urban populations, Dawkins found that 23% of students perceived alcohol problems as serious. However, in non metro-rural populations 30% of students perceived alcohol problems within their school to be serious. Dawkins concluded that differences in prediction of alcohol use must be related to differences within social context and social-environmental settings rather than simply race. When examining specific populations of African Americans the data become even more dependent upon environmental settings. Rodney (1997) examined African-American youth ages 11-17 years, living in midwestern public housing. Children were interviewed using the adolescent version of the Children's Semi-Structured Assessment for the Genetics of Alcoholism Test (Rodney et al., 1997). These

adolescents exhibited low rates of alcohol abuse with 12% of this population identified as alcohol abusers. Studies such as these, point to the relevancy of considering sociocultural environmental settings in devising mechanisms for predicting alcohol abuse. While race may be a descriptive factor in all of these studies, by itself, race is unable to account for major differences in alcohol consumption among the same racial or ethnic groups.

Other studies have examined socio-environmental factors such as level of acculturation on alcohol consumption. Hines and colleagues (1998) found that women who were heavy drinkers were also those found to be least acculturated. This study examined 470 African-American women in a national probability sample as part of a follow-up survey to a 1984 National Alcohol Survey. Those women who were most acculturated, were more likely to be heavy drinkers and engage in risky sexual behavior such as having multiple partners, or not using a condom consistently. African-American women who were least acculturated were also those who drank less than their more acculturated peers.

In an examination of alcohol consumption trends during two time periods, specifically 1984 and 1995, Caetano & Clark (1998) found that rates of abstention of alcohol consumption remained stable among Caucasians but increased among African-American drinkers. However, frequent heavy drinking decreased among Caucasian men from 20% to 12%, but remained stable for African-American male drinkers. The authors concluded that reduction in alcohol consumption rates in the U.S. is differentially influencing Caucasian and African-American ethnic groups and that African-American drinkers might be at higher risk for developing problem drinking than Caucasians.

In a similar investigation of drinking patterns among only African-American drinkers, Jones-Webb (1998) discussed variables such as age, social class, church attendance, drinking norms, and coping mechanisms as variables potentially important in understanding drinking among African Americans. Many of the trends noted in typically Caucasian groups do not apply or have inverse relationships in African-American groups. For example, while drinking in Caucasian Americans decreases with age, this relationship does not hold for African-American drinkers who tend to consume more alcohol in later life than during late adolescence.

The national survey taken in 1984 was used to further address these drinking patterns in African-American and Caucasian men. Herd (1990) concluded again, that while African-American and Caucasian men exhibit extremely similar drinking patterns, in terms of proportions of abstainers, infrequent, frequent and heavier drinkers, there were differences according to ethnic group within the two populations. Specifically, heavier drinking among Caucasian drinkers was more associated with youthfulness, high-income status and residing in traditionally "wet" areas of the country, whereas for African-American men, these patterns were either reversed or entirely absent. For example, "dryer" areas of the U.S are traditionally thought of as the South and Midwest because of alcohol control laws in these areas. Drinking patterns among Caucasians were parallel to the traditional division of "wet" and "dry" areas. The proportion of abstainers was twice as high for Caucasian men in the South than for those in the Northeast and North-Central areas of the country (Herd, 1990). However, this trend reversed itself for African-American male drinkers, with rates of heavy drinking higher for African-

American men in the South-Central regions than for African-American men in North-Central America or the West.

In an investigation of African-American men, Herd (1994) concluded that while African-American men had higher mean scores on many types of alcohol-related problems such as loss of control, binge drinking, and problems with friends and relatives, this group did not report significantly higher rates of drinking or drunkenness. In this analysis, race independently predicted problem scores even after controlling for other social and demographic factors. Further, as rates of drinking did increase, rates of problem drinking rose faster for African-American men than Caucasian men. Herd (1990) suggests that these differences in not only the prevalence of drinking, but of problems associated with drinking might be related to the sociocultural context of drinking.

In a 1983 study by Dawkins and Harper that investigates alcoholism among African-American and Caucasian women problem drinkers the authors note, "race continues to be a significant factor of drinking behavior." Race also appears to be a significant factor of differential outcomes of alcohol consumption between African-American and Caucasian drinkers.

Herd (1996) tested a model in which ethnic identity and drinking patterns were explored and revealed that ethnic identity influenced drinking behavior indirectly through its effects on drinking norms as well as directly. Individuals who scored higher on involvement with African American social networks and African American social and political awareness drank at lower levels than respondents who did not identify with these issues. However, higher scores on the use of Black media, such as African-American

publications and television shows were associated with increased drinking rates. The authors suggest that the promotion of alcohol use in Black media increased drinking rates.

Alcohol Expectancies and Alcohol Consumption

Given these conflicting results regarding alcohol consumption and effects among African Americans and Caucasians and compounding factors such as socio-environmental context, the underlying mechanism integrating the above concepts may be related to the effects of alcohol expectancies. Alcohol expectancies differ from person to person, context to context and possibly from cultural group to group. Alcohol expectancies are beliefs that individuals possess regarding the effects that alcohol may have on behavior, above and beyond the physiological effects of alcohol use (Marlatt & Rohsenow, 1980).

Alcohol expectancy theory was first developed in response to observations regarding the effects of alcohol above and beyond the pharmacological effects of the substance. Classic studies of alcohol expectancies were conducted using the balanced placebo design (Marlatt & Rohsenow, 1980), which allows the researcher to separate the pharmacological and expectancy effects of alcohol use. Participants are given either placebo or alcohol and then told that they are receiving either alcohol or placebo. Consequently, information regarding the beverage is crossed with beverage content to create a 2 X 2 design. The four groups include participants who are told alcohol/receive alcohol, told alcohol/receive placebo, told placebo/receive alcohol, or told placebo/receive placebo. The group receiving placebo but told receiving alcohol is of primary interest, because it is in this group that a person's expectancies may be measured.

Research on alcohol expectancies has demonstrated that the construct is effective in providing information regarding the effects of cognitive factors on the use of alcohol (Goldman, Brown, & Christiansen 1987).

Alcohol expectancies relate to beliefs such as "Drinking makes me feel less shy" and "Drinking increases my aggressiveness" (Collins, Lapp, & Emmons,1990). Alcohol expectancies may help determine the context in which people choose to drink as well as the amount and type of alcohol they choose to drink (Critchlow, 1985). For example, Werner (1993) reported that participants' expectations of positive outcomes for drinking were correlated with drinking behavior as well as alcohol health indices. Alcohol expectancies may be positive or negative in valence. Positive expectancies might include beliefs that alcohol will increase sexual performance or sociability whereas negative expectancies might include beliefs that alcohol will decrease sexual potency or increase muscular tension.

Individuals' drinking behavior may not be dependent upon race at all, but rather, may be a function of alcohol expectancies, which may or may not be similar for ethnic groups. For example, Kline (1990) examined the race-specific alcohol expectancies of 104 Caucasian and 130 Black men and women ages 25-49, who were undergoing residential treatment for alcoholism. Kline hypothesized that race may moderate the relationship between expectancies and drinking behavior among alcoholics. However, results indicated that participants reported few race specific expectancies for drinking behavior. Of those that were found, they related to alcohol enhancing sexuality and inducing relaxation. Specifically, one expectancy-behavior association was found unique only to Caucasian participants. This was the belief that high expectancy of sexual

enhancement was related to loss of behavioral control while drinking. Moreover, among Black alcoholics, the belief that alcohol consumption alleviates tension was correlated with preoccupation with drinking among African Americans. These results point to a theory of alcohol consumption behavior predicted by alcohol expectancies rather than merely race or social situation.

Different populations have been examined in regards to their behavioral expectancies for alcohol consumption. Caucasian subjects have been found to hold more positive expectancies than African-American participants for the physical/social pleasure, social assertiveness, and tension-reduction subscales of the AEQ-R (Reese & Friend, 1994). Velez-Blasini (1997) examined Puerto Rican participants' alcohol expectancies and found that Puerto Rican participants associated positive aspects of alcohol use with increased sociability and increased expectations of effects on sexual behavior. In contrast, participants from the U.S. did not associate alcohol use with increased sociability or increased expectations of effects on sexual behavior. Other studies investigating Latino alcohol expectancies found that acculturation played a key factor in determining alcohol expectancies. Marin et al.(1993) found that more acculturated Hispanics were less likely to expect emotional and behavioral impairment or social extroversion from alcohol consumption in contrast to these expectations by less acculturated Hispanics.

Other studies show differing behavior as a function of the environment. Environmental factors such as setting as well as alcohol consumption alone or in a group have been examined (Sher, 1985). In a study of 98 male social drinkers ages 21-30, consumption of alcohol, setting and alcohol expectancies had independent as well as

interacting effects on participants' subjective state following alcohol or placebo consumption. Subjective state was measured using questionnaires measuring mood and perceived physical sensations. In order to assess mood and perceived physical sensation respectively, Kenneth employed the Mood Scale (Mehrabian & Russell, 1974) as well as the Sensation Scale (Maisto & Connors, 1990). However, variables such as race were not examined. Studies such as this highlight the need for an integrative theory of alcohol consumption among young adults that does not only focus on direct variables such as race or ethnicity, but instead integrates several variables which might predict alcohol consumption.

One of these factors that may predict consumption is physiological disinhibition. Fromme (1992) examined participants' reports of disinhibition following alcohol consumption. Participants were assigned to one of eight conditions in which beverage content (alcohol or placebo), social environment (friendly or unfriendly), and physical environment (simulated bar or residence) were varied. Disinhibition increased after receiving friendly social cues, however disinhibition was not affected by type of beverage or amount of beverage consumed. The suggestion here is that social cues may affect individuals' post-drinking perception of dishinibtion more greatly than beverage content or amount. Again, this points to a theory of alcohol consumption that must account for environmental context as well as variables such as race. Here, environmental context includes friendly social cues that may encourage drinking. Consequently, investigating environment may give use more information regarding behavioral expectancies.

Reese and Friend (1994) examined differences between African-American and Caucasian students in regards to their alcohol expectancies and alcohol consumption in

different environments. It was hypothesized that ethnic differences in consumption patterns may reflect underlying group differences in alcohol expectancies. In an attempt to measure these group differences, Caucasian participants were recruited from a state-supported predominantly Caucasian institution while most African-American participants were recruited from a privately owned historically Black university. Potential within-group differences may have confounded results with setting. Although the authors found no differences between African-American students from the two campuses on demographic measures, drinking variables, alcohol expectancies or religious variables, the uneven sample size and small N for one of the two groups may make conclusions difficult to draw.

While studies have attempted to examine the contribution of race or ethnicity to alcohol consumption behavior, none has as yet attempted to unify conflicting results with adequate theory. Focusing on the concept of race or culture to explain these differences in drinking may simply be too broad an approach. The above studies point to differences in alcohol expectancies within groups as well as across groups. Alcohol expectancies for a particular group may be defined broadly, without assumptions that individuals in identical ethnic groups will possess identical alcohol expectancies. Alcohol expectancies may better unify results of the above studies by examining these beliefs within social environments.

Prior Research: Limitations and Implications

Previous research has focused on presenting epidemiological data rather than attempting to examine an underlying mechanism that may sort out the conflicting and somewhat confusing results regarding alcohol use among different populations. While

previous research has examined alcohol consumption rates and expectancies of different ethnic groups, none has yet to examine consumption rates and expectancies between groups while examining the variability contributed by each of the factors. Doing so may explain conflicting results between ethnic groups as well as provide a mechanism for predicting alcohol consumption rates. Further, theories on Black drinking and social patterns have historically tended to focus on African-American drinking as a deviant version of Caucasian middle class norms (Herd, 1987). Often studies conducted that included African-American participants were based on small population segments such as the Black underclass or groups that could not be considered representative of the Black population as a whole.

Current research calls for more models of explanation that are well grounded in both "alcohol studies as well as in the sociology of Black life"(Herd, 1987). The current study attempts to address this void in the literature by investigating alcohol expectancies as an underlying mechanism for predicting alcohol consumption. In doing so, a better understanding of differences in alcohol consumption between ethnic groups, as well as among individuals within an ethnic group, can be examined.

Purpose and Hypothesis

This study will attempt to examine alcohol expectancies and alcohol consumption across ethnic groups by investigating Caucasian college students, as well as a population of African-American college students. Several hypotheses will be examined.

1. Based on previous findings that alcohol consumption rates differ among African-American and Caucasian college students, it is predicted that African-American and Caucasian college students will report significantly different rates of alcohol

consumption. African-American students will drink less alcohol, as measured by weekly consumption rates, than Caucasian students.

2. Based on findings that alcohol expectancies differ according to drinking status and history, e.g. binge drinker vs. alcoholic, it is predicted that alcohol expectancies will differ between African-American and Caucasian students. Since Caucasian students have higher alcohol consumption rates, Caucasian students will hold stronger alcohol expectancies regarding alcohol consumption than African-American students.
3. Based on findings that African-American students and Caucasian students hold different expectancies for the use of alcohol, a relationship is proposed suggesting that alcohol expectancies will account for greater variance in alcohol consumption rates than ethnicity of the participant.

METHOD

Participants

A power analysis revealed that 119 participants should be recruited, for an effect size of 0.25, from University of Georgia (UGA) through the available research participant pool in the psychology department. Additional African-American students were recruited from historically Black fraternities as well as Black student organizations.

Materials

Total Weekly Alcohol Drinking Questionnaire (TWADQ) (Corbin, Ffrench, Carter, Cotton, & McNair, 1999). This scale assesses participants' average weekly consumption of alcohol throughout a typical month as well as provides information regarding number of hours spent consuming alcohol. The convergent validity of the TWADQ with the Time Line Follow Back (Sobell & Sobell, 1992), another measure of alcohol consumption, has been demonstrated in preliminary data.

Daily Drinking Inventory (DDQ) (Collins, Parks, & Marlatt, 1985) The DDQ was derived from the Drinking Practices Questionnaire (DPQ; Cahalan, Cisin, & Crossley, 1969). This questionnaire assesses average daily alcohol consumption in a typical month as well as the number of standard drinks consumed for each day of the week during a typical week. The convergent validity of the DDQ with the DPQ has been demonstrated with a Pearson's correlation of $r = 0.50$, $p = 0.001$ (Collins et al., 1985).

Alcohol Expectancy Questionnaire (AEQ) (Collins, Lapp, & Emmons,1990). This questionnaire is a 40-item forced choice instrument that measures perceptions about

the effects of alcohol consumption. The questionnaire possesses six subscales consisting of global positive changes, sexual enhancement, physical and social pleasure, social assertion, relaxation and tension reduction, and arousal and aggression. This scale has an internal consistency coefficient ranging from .72 to .92, and a test-retest correlation of .64.

Racial Identity Attitude Scale (RIAS) (Helms & Parham, 1985). This questionnaire is a 23-item Likert scale arrangement, which ranges from strongly agree to strongly disagree. It is a measure of identification with a particular ethnic group. Questions include: "I am happy that I am a member of the group I belong to" and "I have a strong sense of belonging to my own ethnic group" . This scale also addresses the ethnic heritage of a participant's parents, by questioning the ethnicity of both the participant's mother and father.

Demographic Questionnaire This questionnaire will assess sex, age, and racial/ethnic background of participants and fraternity/sorority membership.

Procedure

Following obtaining informed consent, participants will be asked to complete the Demographic Questionnaire followed by the TWADQ, DDQ and finally the AEQ. Following completion of these three measures, participants will be debriefed and questions and concerns will be addressed.

Data Analysis

In order to investigate hypothesis 1, differences in alcohol consumption rates among African-American and Caucasian students, simple linear regression analysis will be performed. In order to investigate hypothesis 2, differences in alcohol expectancies

among African-American and Caucasian students, simple linear regression will again be examined. Finally, in accord with previous researchers (Ford & Carr, 1990; Holyfied, Ducharme, & Martin, 1995), hierarchical multiple regression will be performed in order to investigate the relation of alcohol consumption based upon alcohol expectancies and ethnicity of participants.

RESULTS

Descriptive Data

Sample sizes (n), means (M), and standard deviations (SD) of descriptive variables are presented in Table 1. The sample consisted of 97 students (35 males, 62 females) enrolled in a predominantly Caucasian institution. Of the sample 33 (34.0%) were African-American, while 62 (63.9%) were Caucasian students. Two (2.1%) identified their ethnic background as other. One student who chose to specify, identified their ethnic group as Sephardic Jew. Data from these two students was not included in statistical analyses.

Approximately 17% (n = 16) of the sample were fraternity and sorority members, while 81 (83.5%) students did not belong to a fraternity or sorority. Mean family income for the sample was $51,000-60,000 per year.

Mean Racial Identity Attitude Scale scores for African-American students were 61.48 (SD = 4.31) and for Caucasian students 54.43 (SD = 6.17), respectively.

Table 1

Gender and Ethnicity Demographic Data

Measure	%	n
Demographics		
Females total	63.9%	62
Males total	36.1%	35
Ethnicity		
Caucasian	63.9%	62
African-American	34.0%	33

Table 2

Participant Descriptives for RIAS scores, Income, Age and Greek Membership

Measure	M or %	SD	n
RIAS[a]			
Total	57.12	6.56	95
African American	61.48	4.31	31
Caucasian	54.43	6.17	60
Income[b]			
Total	3.96	2.11	90
African American	3.00	1.97	30
Caucasian	4.38	2.04	58
Age	21.29	2.84	97
Greek membership			
Total	16.5%	.37	16
African American	15.2%	.36	5
Caucasian	17.7%	.39	11

[a]RIAS scores range from 39-71 with higher scores indicating greater identification with ethnic group membership.

[b]Income scores range from 0-6 with the approximate mean score of 4 representing an income of $41,000-50,000.

Correlational Analyses

Table 3 presents the Pearson product-moment correlations of the major variables. These correlations can be used to examine evidence for the relationships among ethnicity, gender, income, fraternity and sorority membership, alcohol consumption, binge drinking patterns as measured by the TWADQ, alcohol expectancies and racial identity. Significant correlations are presented between ethnicity and income ($r = .34$, $p < .01$), ethnicity and alcohol consumption ($r = .24$, $p < .05$), ethnicity and alcohol expectancies ($r = .40$, $p < .01$), and finally ethnicity and racial identity attitude ($r = -.40$, $p < .01$). Also, a significant correlation between gender and maximum alcohol consumption in one sitting was found ($r = .44$, $p < .01$).

Table 3

Intercorrelations Among All Measures

Measure	1	2	3	4	5	6	7	8
1. Ethnicity	----							
2. Gender	-.03	----						
3. Income	.34**	-.01	----					
4. Greek	-.01	-.01	-.22*	----				
5. DDQ total	.24*	.19	.22*	-.37**	----			
6. TWADQ max	.27**	.44**	.14	-.18	.64**	----		
7. AEQ total	.40**	.17	.26*	-.22*	.39**	.48**	----	
8. RIAS total	-.40**	-.05	.00	-.18	.03	.04	-.01	----

Note. **. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Alcohol Consumption

It was hypothesized that African-American and Caucasian college students would report significantly different rates of alcohol consumption. Results of a simple linear regression performed on DDQ scores revealed that weekly rates of alcohol consumption did differ significantly according to ethnicity ($R = .24$, $R^2 = .06$, $F(1,88)$, $p < .05$). Caucasian students consumed more alcohol in a typical week than African-American students ($\beta = .242$, $t = 2.33$, $p < .05$). Mean DDQ scores for African-American students were 4.13 drinks ($SD = 6.81$), and for Caucasian students 9.62 ($SD = 10.96$), respectively. Post hoc analyses were performed in order to investigate rates of maximum alcohol consumption in one sitting as measured by the TWADQ. Rates of maximum consumption in one sitting also differed significantly ($R = .27$, $R^2 = .07$, $F = 7.15$, $p < .05$). Caucasian students consumed more alcoholic beverages in one sitting than African-American students ($\beta = .266$, $t = 2.67$, $p < .05$). Mean number of drinks consumed in one sitting for Caucasian students were 10.37 ($SD = 7.16$) and for African-American students 5.70 ($SD = 6.15$). Refer to Tables 4 and 5.

Table 4

Summary of Simple Linear Regression Analysis for Contribution of Ethnicity in Predicting Alcohol Consumption (N = 97)

Measure	B	SE B	β
DDQ	2.30	.984	.242
TWADQ	1.85	.693	.266

Note. R^2 = .059 for DDQ; R^2 = .071 for TWADQ (ps < .05).

Table 5

Analysis of Variance for Alcohol Consumption

Source	df	F	
		DDQ	TWADQ
	Between Subjects		
Ethnicity	1	6.64*	9.91*
Gender	1	2.91	25.10**
Ethnicity X Gender	1	0.11	1.13
Error	83	(91.57)	(37.29)

Note. Values enclosed in parentheses represent mean square errors. *p < .05. **p < .01.

Table 6

Means and Standard Deviations for Alcohol Consumption Across Ethnicity

Measure	African American		Caucasian	
	M	SD	M	SD
DDQ	4.13	6.81	9.62	10.96
TWADQ	5.70	6.15	10.37	7.16

Note. DDQ scores indicate total alcohol consumption in a typical week while TWADQ scores indicate total alcohol consumption in one sitting.

Alcohol Expectancies

It was hypothesized that alcohol expectancies would differ between African-American and Caucasian students and that Caucasian students would hold stronger expectancies than African-American students. Alcohol expectancies were significantly different between the two groups ($R = .40$, $R^2 = .16$, $F(1,83) = 15.20$, $p < .05$). Caucasian participants held expectancies related to the use of alcohol more strongly than did African-American students ($\beta = .40$, $t = 3.90$, $p < .001$). Further, post hoc analyses investigating subscales of the AEQ revealed that Caucasian students held significantly different alcohol expectancies than African-American students on five of the six subscales of the AEQ. These differences were in the same direction as the relationship between total AEQ scores and ethnicity, with Caucasian students holding stronger expectancies for each of the scales, excluding the aggression subscale.

Table 7

Means and Standard Deviations for Alcohol Expectancy Questionnaire Subscales Across Ethnicity

Subscale	African American		Caucasian	
	M	SD	M	SD
Global Positive Changes	2.40	1.47	3.17	1.33
Sexual Enhancement	1.24	1.52	2.22	1.92
Physical and Social Pleasure	2.33	1.84	3.41	1.71
Social Assertion	2.39	2.24	4.98	1.87
Relaxation and Tension Reduction	4.42	2.77	5.72	2.22
Aggression	1.24	1.25	1.61	1.16
Total	13.17	9.10	20.81	7.41

Note. Subscale scores range from 0-9 with higher scores indicating greater expectancies for that scale. Total scores range from 0-38 with higher scores indicating greater overall alcohol expectancies.

Table 8

Analysis of Variance for Alcohol Expectancies

		F
Source	df	AEQ
	Between Subjects	
Ethnicity	1	12.23**
Gender	1	7.59**
Ethnicity X Gender	1	12.04**
Error	78	(55.43)

Note. Values enclosed in parentheses represent mean square errors. *$p < .05$. **$p < .01$.

The Relationship of Alcohol Expectancies to Alcohol Consumption and Ethnicity

It was hypothesized that alcohol expectancies would account for greater variance in alcohol consumption rates than ethnicity of the participant. Results of a hierarchical multiple regression analysis revealed that ethnicity made a significant independent contribution ($\beta = .24$, $t = 3.05$, $p < .05$) in predicting alcohol consumption, accounting for approximately 6% of the variance on the measure of alcohol consumption (Multiple $R = .239$, $R^2 = .057$, $F(1,78) = 4.68$, $p < .05$). However, after including alcohol expectancies in a hierarchical multiple regression analysis, the contribution of ethnicity is no longer significant ($\beta = .10$, $t = .91$, $p = .361$). Instead, a hierarchical multiple regression analysis revealed that the contribution of alcohol expectancies ($\beta = .34$, $t = 3.05$, $p < .05$) was more predictive of alcohol consumption than merely ethnicity and accounted for more variance (16%) than a model which included only ethnicity (Multiple $R = .40$, $R^2 = .16$, $F(2,78) = 7.23$, $p < .001$), indicating that alcohol expectancies is predictive of alcohol consumption even when the variability associated with ethnicity is considered.

Table 9

Summary of Hierarchical Regression Analysis for Variables Predicting Alcohol Consumption
(N = 97)

	Variable	B	SE B	β
Step 1				
	Ethnicity	2.30	1.06	.24*
Step 2				
	Ethnicity	1.01	1.09	.10
	Alcohol Expectancies	.40	.13	.35*

Note. R^2 = .06 for Step 1; ΔR^2 = .10 for Step 2 (ps < .05).

DISCUSSION

In the present analyses, a relationship between weekly alcohol consumption and ethnicity was shown. Consistent with other studies (Herd, 1990; Dawkins & Harper, 1983), Caucasian participants consumed significantly greater portions of alcohol on a weekly basis. While Caucasian students were shown to consume more alcohol on a weekly basis, this group was also shown to consume more alcohol in one sitting, pointing to greater likelihood of binge drinking behavior.

These results may be more interesting than those indicating simply differences in weekly drinking behaviors because they may be indicative of both the setting that drinking is occurring, as well as hint at the function of the usage of alcohol. Since Caucasian students consumed large amounts of alcohol in short sittings, which met criteria for binge drinking, African-American students reported drinking significantly smaller amounts in one sitting. These results may point to different contexts in which drinking occurs for students. While African-American students may consume alcohol when engaged in other activities such as playing cards or other games, the focus of parties for Caucasian students may indeed be the drinking behavior itself. If Caucasian students consume not only more alcohol in a given week, but a significantly larger number of drinks in one sitting, conclusions regarding binge drinking behavior as well as motivations for alcohol consumption are warranted. For example, binge drinking behavior may be representative of a quick attempt to experience the physical and emotional consequences of intoxication for Caucasian students. Since African-American

students were shown to be less likely to engage in binge drinking behavior, alcohol consumption might serve a different function for this group.

These results point to the relationship between alcohol expectancies and ethnicity by highlighting the role of students' beliefs have in alcohol consumption behavior. A positive relationship between alcohol expectancies and ethnicity was shown. Caucasian students appear to hold significantly stronger alcohol expectancies than African-American students for both positive as well as negative consequences of alcohol use. More consistent usage of alcohol may indeed strengthen previously held alcohol expectancies, however these expectancies may also be pre-existing and influence students in their choices regarding amount of alcohol consumption. The relationship between the two is most likely bi-directional.

The inclusion of alcohol expectancies as a predictor variable while accounting for the variability in ethnicity suggests that alcohol expectancies provide a mechanism for understanding drinking above and beyond information provided by race. While sociocultural variables such as religion, socioeconomic status and social support may provide potential variables for investigation regarding their predictive ability for alcohol consumption, alcohol expectancies may surpass all of these variables in their predictive ability and indeed provide researchers and clinicians alike with a conceptualization of alcohol consumption that is comprehensive.

Students' beliefs about the use of alcohol may provide important clues to interventions aimed at reducing alcohol intake among college populations. Future research might investigate the ways to modify individual's beliefs concerning the positive aspects of alcohol use (Goldman, 1994).

Several limitations were present in the current study. First, the difficulty of finding African-American students from which to collect data resulted in smaller numbers of African-American students than may be desirable. Further, limited information regarding the setting in which alcohol was consumed was gathered. While the present study examined fraternity or sorority membership, interactions in these settings may be very different for Caucasian and Black students. Interactions between race and alcohol expectancies might be investigated in future studies by examining expectancies of African-American students in differing contexts and settings. These results are indicative of the need for future research that might present a more causal role of alcohol expectancies in predicting drinking behavior regardless of ethnicity. Results indicating that alcohol expectancies may account for more of the variability in alcohol consumption than mere ethnicity reflect the importance of considering within-race variability. A more causal relationship might be investigated by examining the expectancies of students in different environmental contexts such as a historically Black college or university as well as examinations of African-American students who do not strongly identify with their ethnic background.

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APPENDICES

APPENDIX A

Total Weekly Alcohol Drinking Questionnaire (Carter, J., Corbin, W.R., Ffrench, F.A., McNair, L.D., Cotton, G.J., unpublished raw data)

Typical Week and Maximum
Alcohol Drinking Questionnaire

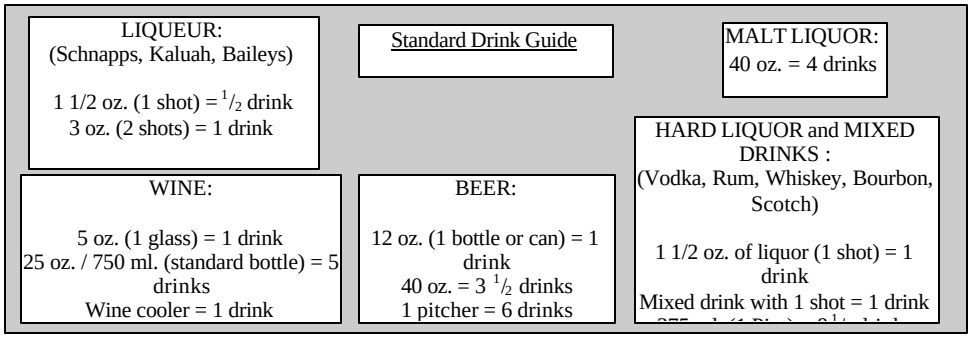
This questionnaire is designed to measure a typical week of drinking and maximum drinking occasion during the past year of your life. If you do not feel you have a weekly pattern of drinking, please try to estimate a weekly pattern that best represents your drinking pattern.

STEP 1: Please write a number indicating the how many standard drinks you typically drink on each day of the week across the top row of boxes. A guide is provided below for determining "standard" drinks.
STEP 2: Please write a number indicating how many hours you typically spend drinking (from the beginning of the first drink until the end of the last drink) on each day of the week across the bottom row of boxes.

Note: For STEPs 1, 2, 5 and 6: You may enter a decimal or fraction (examples of correct responses: 9, 0, 2.5 or $5^1/_2$). Please do not enter a range of numbers (examples of incorrect responses: 3-6 or 1-2).

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Number of Standard Drinks							
Number of Hours							

STEP 3: Weight: _____ pounds Note: STEP 3 and STEP 4 information is used to calculate blood alcohol levels.
STEP 4: Gender: female / male (please circle)
STEP 5: Please write a number indicating the maximum number of drinks you drank on any one occasion during the past year:
STEP 6: Please write a number indicating the how many hours you spent drinking on your maximum drinking occasion:



APPENDIX B

Daily Drinking Questionnaire (Collins, R.L., Parks, G.A., & Marlatt, G.A., 1985)

DDQ

We are interested in how much alcohol you consume during each drinking occasion. By one drink, we mean one 12 ounce bottle of beer, one shot of liquor – straight or in a mixed drink, or one 4 ounce glass of wine. Think of all of the times you have been drinking in the past month.

1. When you drank, how often did you have as many as 5 or 6 drinks?
   A = Nearly every time
   B = More than half of the time
   C = Less than half of the time
   E = Never

2. When you drank, how often did you have 3 or 4 drinks?
   A = Nearly every time
   B = More than half of the time
   C = Less than half of the time
   E = Never

4. When you drank, how often did you have 1 or 2 drinks?
   A = Nearly every time
   B = More than half of the time
   C = Less than half of the time
   E = Never

Please fill in a number for each day of the week indicating the average number of drinks you consumed during one week.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

5. Please add together the numbers in the above boxes. The combined weekly average number of drinks is:
   A = 0 drinks
   B = 1 – 3 drinks
   C = 4 – 11 drinks
   D = 12 or more drinks

6. When I drink alcoholic beverages or soft drinks, I regularly drink:
   A = beers and colas
   B = beers but not colas
   C = colas but not beers
   D = neither beers or colas

APPENDIX C

Alcohol Expectancies Questionnaire (Collins, Lapp & Emmons, 1990)

Please read each of the following statements and respond according to your experiences with a moderate amount of alcohol. If you believe alcohol sometimes or always has the stated effect on you check AGREE. If you believe alcohol never has the stated effect on you, check DISAGREE.

Then, in the column to the far right, fill in the number that best corresponds to the strength of your belief, according to the following scale:

1 2 3 4 5 6 7 8 9 10

Mildly believe — Strongly believe

	Agree	Disagree	Strength of belief
1. Alcohol increases muscular tension in my body	_____	_____	_____
2. Drinking makes me feel less shy.	_____	_____	_____
3. Alcohol enables me to fall asleep much more quickly.	_____	_____	_____
4. I feel powerful when I drink, as if I can really influence others to do as I want.	_____	_____	_____
5. I'm more clumsy after I drink.	_____	_____	_____
6. I'm more romantic when I drink.	_____	_____	_____
7. Drinking makes the future seem brighter to me.	_____	_____	_____
8. If I have had alcohol, it is easier for me to tell someone off.	_____	_____	_____

	Agree	Disagree	Strength of belief
9. I can't act as quickly when I've been drinking	_____	_____	_____
10. Alcohol can act as an anesthetic for me, that is, it can deaden pain.	_____	_____	_____
11. I often feel sexier after I've been drinking.	_____	_____	_____
12. Drinking makes me feel good.	_____	_____	_____
13. Alcohol makes me careless about my actions.	_____	_____	_____
14. Alcohol has a pleasant, cleansing, tingly to me.	_____	_____	_____
15. Drinking increases my aggressiveness.	_____	_____	_____
16. Alcohol seems like magic to me.	_____	_____	_____
17. Alcohol makes it hard for me to concentrate.	_____	_____	_____
18. After drinking, I am a better lover.	_____	_____	_____
19. When I'm drinking, it is easier to open up and express my feelings.	_____	_____	_____
20. Drinking adds a certain warmth to social occasions for me.	_____	_____	_____
21. If I'm feeling restricted in any way, drinking makes me feel better.	_____	_____	_____
22. I can't think as quickly after I drink.	_____	_____	_____
23. Having drinks is a nice way for me to celebrate special occasions.	_____	_____	_____
24. Alcohol makes me worry less.	_____	_____	_____
25. Drinking is pleasurable because it's enjoyable for me to join in with other people who are enjoying themselves.	_____	_____	_____
26. After drinking, I am more sexually responsive.	_____	_____	_____

	Agree	Disagree	Strength of belief
27. I feel more coordinated after I drink.	_____	_____	_____
28. I'm more likely to say embarrassing things after drinking.	_____	_____	_____
29. I enjoy having sex more if I've had alcohol.	_____	_____	_____
30. I'm more likely to get into an argument if I've had alcohol.	_____	_____	_____
31. Alcohol makes me less concerned about doing things well.	_____	_____	_____
32. Alcohol helps me sleep better.	_____	_____	_____
33. Drinking gives me more confidence in myself.	_____	_____	_____
34. Alcohol makes me more irresponsible.	_____	_____	_____
35. After drinking it is easier to pick a fight.	_____	_____	_____
36. Alcohol makes it easier to for me to talk to people.	_____	_____	_____
37. If I have alcohol it is easier to express my feelings.	_____	_____	_____
38. Alcohol makes me more interesting.	_____	_____	_____
39. After I've had a few drinks, I'm more likely to feel sexy.	_____	_____	_____
40. Drinking makes me feel flushed.	_____	_____	_____

APPENDIX D

Racial Identity Attitude Scale (Parham, T.A. & Helms, J.E., 1985)

RIAS

In this country, people come from a lot of different cultures and there are many different words to describe the different backgrounds or ethnic groups that people come from. Some examples of the names of ethnic groups are Mexican-American, Hispanic, Black, Asian-American, American Indian, Anglo-American, and Caucasian. Every person is born into an ethnic group, or sometimes two groups, but people differ on how important their ethnicity is to them, how they feel about it, and how much their behavior is affected by it. These questions are about your ethnicity or your ethnic group and how you feel about it or react to it.

Please fill in:

In terms of ethnic group, I consider myself to be
_____

Use the numbers given below to indicate how much you agree or disagree with each statement.

4: Strongly agree	3: Somewhat agree	2: Somewhat disagree	1: Strongly disagree

1. I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs. _____
2. I am active in organizations or social groups that include mostly members of my own ethnic group. _____
3. I have a clear sense of my ethnic background and what it means for me. _____
4. I like meeting and getting to know people from ethnic groups other than my own. _____
5. I think a lot about how my life will be affected by my ethnic group membership. _____
6. I am happy that I am a member of the group I belong to. _____
7. I sometimes feel it would be better if different ethnic groups didn't try to Mix together _____
8. I am not very clear about the role of my ethnicity in my life. _____
9. I often spend time with people from ethnic groups other than my own. _____
10. I really have not spent much time trying to learn more about the culture and history of my ethnic group. _____

11. I have a strong sense of belonging to my own ethnic group. _____

12. I understand pretty well what my ethnic group membership means to me, in terms of how to relate to my own group and other groups. _____

13. In order to learn more about my ethnic background, I have often talked to Other people about my ethnic group. _____

14. I have a lot of pride in my ethnic background, I have often talked to Other people about my ethnic group. _____

15. I don't try to become friends with people from other ethnic groups. _____

16. I participate in cultural practices of my own group, such as special food, music, or customs. _____

17. I am involved in activities with people from other ethnic group. _____

18. I feel a strong attachment towards my own ethnic group. _____

19. I enjoy being around people from ethnic groups other than my own. _____

20. I feel good about my cultural or ethnic background. _____

Write in the number that gives the best answer to each question

21. My ethnicity is
    (1) Asian, Asian American, or Oriental
    (2) Black or African American
    (3) Hispanic or Latino
    (4) Caucasian, Caucasian, European, not Hispanic
    (5) American Indian
    (6) Mixed; parents are from two different groups
    (7) Other (write in): _____

22. My father's ethnicity is (use numbers above) _____

23. My mother's ethnicity is (use numbers above) _____

APPENDIX E

Demographic Questionnaire

Please answer the following questions by checking the blank next to the most appropriate answer or filling in the blank.

1. Sex
____ Female
____ Male

2. Age: _____

3. Race or ethnicity you identify with: (mark all that apply)
____ Caucasian American
____ African American
____ Latino
____ Asian American
____ Native American
____ Other (please specify) _____

4. I am currently in or a pledge of a fraternity or sorority
____ Yes
____ No
If yes, please specify name of fraternity/sorority _____