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Personality Correlates of Alcohol Consumption and Aggression in a Hispanic College Population

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The authors examined the association between alcohol consumption and aggression from a personality trait perspective with 92 self-identified Hispanic college students. They partially replicated a study by Quigley, Corbett, and Tedeshi, which examined the relationships between desired image of power, alcohol expectancies, and alcohol-related aggression. Among male participants, impulsivity did not correlate with either alcohol consumption or frequency of fighting, whereas with females there was a strong positive correlation between impulsivity and alcohol consumption and a weak positive correlation between impulsivity and frequency of fighting. When the results were compared to those of Quigley et al., it was found that the Hispanic participants drank and fought less. The best predictor variable for male alcohol consumption was the desire to be viewed as "tough." "Activity" was the primary predictor for female alcohol consumption.

Keywords: *alcohol consumption; aggression; personality traits; Hispanic college students*

People have long been aware of the association between alcohol intoxication and aggression. However, it is clear that not all individuals under the influence of alcohol become aggressive. Thus, researchers have attempted to elucidate the critical differences between the people who become aggressive while intoxicated and those who do not become aggressive. These attempts have been undertaken using a variety of approaches predicated on cognitive theories, expectancy theories, personality theories,

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and others. We examined the association primarily from a personality trait perspective. In addition, we partially replicated a study by Quigley, Corbett, and Tedeshi (2002), which examined the relationships between desired image of power, alcohol expectancies, and alcohol-related aggression.

Quigley et al. (2002) wanted to determine the extent of the relationship between alcohol expectancies, individual differences in self-presentation as related to aggression, and individual experience with violence associated with alcohol consumption. One of their most interesting discoveries was that, among participants who wanted to appear powerful, there was an increased probability of experiencing alcohol-related violence. The researchers also observed that participants who were relatively heavy drinkers were more likely to experience alcohol-related violence than their moderate drinking peers. Our purpose for the partial replication of the Quigley et al. study is to compare our sample of Hispanic students to the students in their sample in terms of amount of alcohol consumed, number of fights while drinking, and the various personality measures.

One personality trait frequently associated with alcohol abuse and aggressive behavior is that of impulsivity. Fulwiler, Eckstine, and Kalsy (2005) examined the relationships between impulsive-aggressive traits, serotonin function, and alcohol-enhanced aggression. Male social drinkers who consumed 1 g/kg alcohol, and subsequently displayed increased levels of aggression, also had elevated impulsivity scores. In an earlier study of the interaction between executive cognitive function (ECF) and alcohol-induced aggressivity, there were indications that individuals with low ECF were unable to inhibit impulsive behaviors, particularly when intoxicated (Lau, Pihl, & Peterson, 1995), which again implicates impulsivity as a contributor to alcohol-induced aggression. The association between impulsivity and alcohol-induced aggression can be traced back to studies by Virkkunen et al. (1994a, 1994b) and Virkkunen, Goldman, Nielsen, and Linnoila (1995) in which a relationship was observed between low levels of the serotonin metabolite, 5-hydroxyindoleacetic acid (5-HIAA), and violent behavior among alcoholic men. Linnoila et al. (1994) then proposed that both heavy alcohol consumption and aggressive behavior might be the consequence of poor impulse control consequent to decreased serotonergic function.

In an earlier study conducted in our laboratory (Matykiewicz, La Grange, Reyes, Vance, & Wang, 1997), we obtained data consisting of alcohol/drug use (frequency and amount), Sensation Seeking V (SSSV) scores (Zuckerman, 1979), Eysenck Personality Questionnaire (EPQ) scores (Eysenck, Eysenck, & Barrett, 1985), platelet monoamine oxidase (MAO) activity, dopamine beta hydroxylase (DBH) activity, and testosterone levels. A stepwise regression

model indicated that the four best predictors of alcohol consumption in males were two subscales of the SSSV, Disinhibition (DIS) and Experience Seeking (ES), decreased MAO activity, and increased levels of testosterone. These variables have also been associated with aggressive behavior as noted in other studies (Fowler, von Knorring, & Oreland, 1980; Oreland, von Knorring, von Knorring, & Bohman, 1985; Schalling, Asberg, Edman, & Oreland, 1987; Stalenheim, von Knorring, & Oreland, 1997; Zuckerman, 1984). Our results indicated that although there is clear involvement of personality traits in alcohol consumption and alcohol-induced aggression, ultimately, these traits are driven, at least in part, by biological substrates.

The goals of this study were to (a) determine the association of impulsivity with alcohol consumption and alcohol-associated aggression, (b) compare frequency/amount of alcohol use in Hispanic university students with the data collected by Quigley et al. (2002), (c) compare number of alcohol-associated fights and barroom fights experienced by Hispanic university students with the data collected by Quigley et al. (2002), and (d) identify the best predictors of alcohol consumption and alcohol-associated aggression as measured in our data set.

Methods

Participants

The participants were 92 undergraduate and graduate students recruited from a comprehensive state-supported university in New Mexico. All the participants self-identified as Hispanic on a demographic questionnaire.

Measures

Demographics. Gender, age, race/ethnicity, familial income during high school, number of siblings, and parental alcohol abuse problems were assessed by a demographics questionnaire that was created for this project.

Desired Image of Power Survey. This measure (Quigley et al., 2002) was included to examine how participants desired others to see them. The measure consisted of the leading phrase "I would like others to see me as. . ." followed by the following adjectives: strong, sensitive, tough, generous, powerful, and laid-back. Participants responded using a 5-point Likert-type scale.

Violence Measures Questionnaire. Two items assessed experiencing alcohol-related violence and bar violence. The first item asked how many times in the previous 12 months the individual had been involved in a physical fight while drinking. The second item asked how many times in the previous 12 months the individual had been involved in a physical fight while drinking alcohol in a bar. The response options for each item were 0, 1, 2, 3-5, 6-10, 11-19, and 20+. The response scale for these items was taken from the Conflict Tactics Scale (Straus, 1979).

Quantity/Frequency Alcohol Use Questionnaire. Participants were asked in a Quantity/Frequency Alcohol Use Questionnaire (Cahalan, Cisin, & Crossley, 1969) about their use of beer, wine, and liquor. Participants were asked how often they had consumed (beer/wine/liquor) in the last 12 months and then, on average, how much they consumed on each occasion. The response scale for frequency had the options "every day," "5-6 days/week," "3-4 days/week," "2 days/week," "once a week," "2-3 days/month," "once a month," "few times/year," and "never."

Alcohol expectancies. Leigh's (1987) Effects of Drinking Alcohol (EDA) Scale was used to assess alcohol expectancy. This measure consists of five subscales: (a) Nastiness (or aggressiveness), (b) Impairment, (c) Disinhibition, (d) Gregariousness, and (e) Depressant. Participants were asked to rate the likelihood of their experiencing particular effects of alcohol when responding to the following statement: "When I drink enough alcohol to be under the influence, I..." followed by 20 adjectives, four for each of the five subscales. Participants responded using a 5-point Likert scale.

Effects of Acute Alcohol Consumption on Personality Questionnaire. This 12-item survey, which was developed for this study, contained five items that indicated the potential for alcohol-induced aggression. The total possible score on this scale was five points.

Personality assessment. Two separate measures were used to assess personality traits: Zuckerman-Kuhlmann Personality Questionnaire Form III (ZKPQ-III; Zuckerman, Kuhlman, Joireman, Teta, & Kraft, 1993) and the EPQ (Eysenck, Eysenck, & Barrett, 1985). The ZKPQ-III consists of 99 items designed to identify five components of personality along five subscales: Activity-Energy (Activity), Aggression-Hostility (Agg/Host), Sociability (Social), Neuroticism-Anxiety (N-A), and Impulsive Sensation Seeking (ImpSS). The EPQ consists of 90 items designed to assess the personality traits of extraversion (E), neuroticism (N), and psychoticism (P).

Procedure

Prior to data collection, permission was obtained from the university's internal review board to conduct the study. On arrival for the study, participants were given an informed consent form. Once the informed consent form was signed the participants were given the survey packets. On completion of the survey packet, the participants were given a debriefing form that was designed to provide information about the consequences of excessive alcohol consumption.

Results

Demographic Variables

Of the 92 participants, 26 (28.3%) were male and 66 (71.7%) were female, and the mean age for the total sample was 23.8 ($SD = 9.01$). The participants' religious affiliations included Catholic, 52 (56.5%), Protestant, 17 (18.4%), none, 20 (21.0%), and other, 3 (4.1%). The mean family income was \$30,000-\$40,000/year and the average number of siblings was 2.9 ($SD = 2.18$). The participants were asked whether their fathers or mothers abused alcohol. Thirty respondents (32.6%) indicated that their fathers abused alcohol and 7 (7.6%) answered that their mothers abused alcohol.

Comparisons With the Quigley et al. Study

As seen in Table 1, the New Mexico Highlands University (NMHU) students were involved in fewer fights, both in and out of barrooms. NMHU students, particularly females, also drank less alcohol than the Quigley et al. participants (see Table 2).

Predictors of Alcohol Consumption and Alcohol-Associated Aggression

A stepwise regression was run for each gender to determine which of the variables in this study best predicted the amount of alcohol consumed and the number of fights in which the participants were involved.

Alcohol consumption. The regression model for males indicates that the best predictor of alcohol consumption, accounting for 42% of the variance ($R^2 = .423$; $F = 15.2$ [1, 25]; $p < .01$), is "Tough," which is from the Desired Image of Power Scale. Female alcohol consumption was best predicted by

Table 1
Comparison With Quigley et al. (2002) Fights

Fights	Males		Females		Total	
	NMHU	Quigley	NMHU	Quigley	NMHU	Quigley
Mean no. of fights	.592	Not reported	.129	Not reported	.360 (.824)	.390 (1.52)
% involved in fights	16.5%	25%	9%	6.9%	12.8%	16%
Mean bar fights	.265	Not reported	.00 (.00)	Not reported	.130 (.665)	.150 (.650)
% involved bar fights	7.5%	13.4%	0%	2.9%	3.7%	8%

Table 2
Comparison With Quigley et al. (2002) Alcohol Consumption

Alcohol Consumption	Males		Females		Total	
	NMHU	Quigley	NMHU	Quigley	NMHU	Quigley
Mean/day in ounces	1.09 (2.90)	2.05 (3.18)	.261 (1.29)	1.93 (2.72)	.523 (2.01)	1.99 (2.95)
% Abstainers	4.3%	Not reported	30%	Not reported	21.9%	12.7%
% heavy drinkers/week*	17.3%	Not reported	2%	Not reported	8.2%	25%

* >16 oz/week.

Activity from the ZKPQ-III, which accounted for 19% of the variance ($R^2 = .192$; $F = 7.9$ [1, 65]; $p < .01$).

Number of fights. Accounting for 29% of the variance in male involvement in fights was the Agg/Host subscale from the ZKPQ-III ($R^2 = .291$; $F = 11.2$ [1, 25]; $p < .01$). Among females, the most powerful predictor was the Alc/Agg from the Acute Effects of Alcohol Consumption on Personality questionnaire. In this model, Alc/Agg accounted for 31% of the variance ($R^2 = .314$; $F = 13.9$ [1, 65]; $p < .01$).

Correlations for the Data Set

The remaining data analyses consisted of a determination of the degree of correlation between the two dependent variables, alcohol consumption and number of fights over the past year, and each of the variables assessed by the scales and questionnaires.

The EDA Scale results indicate that among males there were quite a few positive correlations with the variable, number of fights, most notably with the variable "mean" ($r^2 = .681$; $p < .01$). Among females, too, there was a robust relationship between the variable "mean" and number of fights ($r^2 = .492$; $p < .01$). In addition, among women, there was a strong positive correlation between their scores on the scale Alc/Agg and both variables, number of fights ($r^2 = .451$; $p < .01$) and total alcohol consumption ($r^2 = .392$; $p < .01$).

Finally, correlational analyses were run with the two personality assessment instruments, the EPQ and the ZKPQ-III, and the two dependent variables, total alcohol consumption and number of fights. Among males, the only significant correlation with the number of fights was the Activity subscale from the ZKPQ-III ($r^2 = .435$; $p < .05$). The same held true for the females ($r^2 = .401$; $p < .01$). The female scores on the ImpSS subscale were positively correlated with total alcohol consumption ($r^2 = .371$; $p < .01$). The expected positive association between ImpSS and the two dependent variables, total alcohol consumption and number of fights, was not observed in the data collected from the male participants. The results for the EPQ included a positive relationship between the variable "psychoticism" and the number of fights ($r^2 = .399$; $p < .05$) in the male participants. The only significant relationship among females was that of the Extraversion subscale and total alcohol consumption ($r^2 = .368$; $p < .01$).

Discussion

The expected positive association of impulsivity with alcohol consumption and alcohol-associated aggression was not observed for the male participants. However, the females' ImpSS scores were positively and significantly ($r = .371$; $p < .01$) correlated with alcohol consumption. The correlation of ImpSS scores to the number of fights among females was also positive but not significant. Whiteside and Lynam (2003) attempted to disentangle the association between impulsivity and alcohol consumption when they observed that impulsive behavior might not be related to all

forms of alcohol consumption. They opined that impulsivity was simply a component of “psychopathology found in a subtype of alcohol abusers” (p. 210). In a study by Conrod, Pihl, Stewart, and Dongier (2000), designed to classify female substance abusers based on personality risk factors, females with the highest average monthly alcohol consumption also had the highest scores on impulsivity measures. Our results are consistent with the Conrod et al. study but should be replicated with a broader sample that includes diagnosed alcoholics. The degree to which there is a link between impulsivity and psychopathology will be examined in a future study.

Our data, when compared to that of Quigley et al. (2002), indicate that the Hispanic participants in our sample consumed less alcohol and were involved in fewer fights. The Centers for Disease Control (CDC) in Atlanta recently released the results of its National Health Interview Survey (2005), which illustrates the differences in heavy alcohol consumption between Whites and Hispanics. The percentage of adult Whites aged above 18 who had consumed five or more drinks in 1 day was 22.6% versus 16.8% for Hispanics. In addition, the National Women’s Health Information Center (n.d.) reports that 49% of Hispanic women abstain from alcohol, which is an even higher percentage than the 32% abstinence rate reported by our participants. Northern New Mexico is home to a Hispanic population that settled in the area as long ago as the 17th century. The territory remained extremely isolated, thus allowing a unique Hispanic culture to establish itself—a culture that remains remarkably intact to this day. The fact that our data reflect lower alcohol consumption and fewer alcohol-related fights than reported by Quigley et al. (2002) may very well stem from the strong influence of the local Hispanic culture.

Finally, turning to the predictor variables, the gender difference in predictor variables for alcohol consumption was quite pronounced. For males, wanting to be viewed as tough was the best predictor for alcohol consumption. Walton and Roberts (2004) found that alcohol abusers were more “disagreeable” and “neurotic” than moderate users. Although very few of our male participants could be classified as alcohol abusers, they might not have progressed to the alcohol abuse stage because they were still relatively young.

Female alcohol consumption, however, was best predicted by a subscale from the ZKPQ-III, Activity, and to a lesser extent, Gregariousness from the EDA Scale. This predictor variable coupled with the positive correlation with ImpSS is consistent with the Brennan, Walfish, and AuBuchon (1986) review of 20 studies on alcohol consumption and personality correlates. Across the 20 studies, Brennan et al. (1986) observed that pleasure seeking, extraversion, and impulsivity were often identified correlates of alcohol

use. Furthermore, a distinction was made by noting that extraversion/ sociability was positively correlated with the frequency of alcohol consumption but not necessarily with the quantity (Nezlek, Pilkington, & Bilbro, 1994).

To summarize, among our male participants, impulsivity did not correlate with either alcohol consumption or frequency of fighting, whereas among females there was a positive correlation between impulsivity and alcohol consumption and a weak positive correlation between impulsivity and frequency of fighting. When our results were compared to those of Quigley et al. (2002), it was clear that in our Hispanic sample, the participants drank and fought less than the participants in the Quigley et al. study. The best predictor variable for male alcohol consumption was the desire to be viewed as "tough." "Activity" from the ZKPQ-III was the primary predictor for female alcohol consumption. The best predictor variable for male participation in fights was the Agg/Host subscale from the ZKPQ-III. We will conduct follow-up studies that include many of the same variables but will also add biological components as measured by MAO activity and possible associated genetic polymorphisms.

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Linda La Grange joined the New Mexico Highlands University's Department of Behavioral Sciences as a physiological psychology faculty member in 1989. Her research interests included the investigation of the biochemical correlates of personality traits, the use of bioflavonoids to mitigate the consequences of in utero exposure to ethanol, and the use of biological markers to determine excessive ethanol intake. Currently, she is a full-time administrator but still continues to teach one class a semester and engage in research. She and her husband recently completed climbing all 54 mountains in Colorado that are more than 14,000 feet tall. They are now climbing the next 50 tallest.

Natalya Hojnowski received her BA degree in psychology from the University of New Mexico in 1995. In 2005, she decided to pursue graduate studies at New Mexico Highlands University, where she received her MS degree in clinical psychology. She is currently taking a year off to conduct research and to apply to PhD programs in clinical neuropsychology.

Svitlana Nesterova received her BS degree from New Mexico Highlands University with a major in psychology and minors in biology and chemistry. While pursuing her degree she worked in an organic chemistry laboratory investigating biologically active pyran derivatives. After graduation, she worked as a laboratory technician in a neuroscience laboratory at the University of South Carolina. Currently, she is planning to pursue a PhD in neuroscience. In her spare time she enjoys teaching Latin dance.