

The Relationship Between Substance Use and Social Class Among College Students

2016

Kelcey Little
University of Central Florida

Find similar works at: <https://stars.library.ucf.edu/honorsthesis>

University of Central Florida Libraries <http://library.ucf.edu>

 Part of the [Psychology Commons](#)

Recommended Citation

Little, Kelcey, "The Relationship Between Substance Use and Social Class Among College Students" (2016). *Honors Undergraduate Theses*. 19.

<https://stars.library.ucf.edu/honorsthesis/19>

This Open Access is brought to you for free and open access by the UCF Theses and Dissertations at STARS. It has been accepted for inclusion in Honors Undergraduate Theses by an authorized administrator of STARS. For more information, please contact lee.dotson@ucf.edu.

THE RELATIONSHIP BETWEEN SUBSTANCE USE AND SOCIAL CLASS
AMONG COLLEGE STUDENTS

by

KELCEY LITTLE

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Psychology
in the College of Sciences
and in The Burnett Honors College
at the University of Central Florida
Orlando, FL

Spring Term 2016

Thesis Chair: Dr. Chrysalis Wright

ABSTRACT

Alcohol and substance use among a college population has become a norm for our society. Even more intriguing are the possible factors that may lead to use and abuse of alcohol and substances. The purpose of the current study was to examine the relationship between multiple participant characteristics (i.e., ethnicity, gender, year in college, socioeconomic status) and alcohol and substance use. A total of 902 participants from the University of Central Florida answered multiple questionnaires via the Sona system. Items in the questionnaires included topics such as demographic variables, social class variables, and items regarding alcohol and substance use in the past thirty days. The majority of participants were white females with an average age of 21.58. This study hypothesized that participants who identify as white males, those classified as a junior or senior in class standing, as well as those in a higher socioeconomic status would be more likely to report alcohol and substance use when compared to other participants. The current study also sought to assess how these different factors combine to best predict alcohol and substance use among a college sample. Data in the study was analyzed using SPSS in which correlations, t-tests, and an ANOVA were used to determine how participant characteristics and alcohol and substance use among college students are related. Linear regression analyses were conducted as well to determine how different participant characteristics can combine to best predict alcohol and substance use among college students. Results indicated that those participants whom identify as being white males, participants in a higher socioeconomic status, and, participants in later years of college are more likely to partake in alcohol and substance use. Results also indicated that the main factors that predicted alcohol and substance use are social class and year in college.

TABLE OF CONTENTS

ABSTRACT.....	ii
LIST OF FIGURES	iv
CHAPTER 1: INTRODUCTION	1
Substance Use Among College Students	1
Consequences of Substance Use	3
Factors Related to Substance Use Among College Students	6
Social and Economic Costs of Alcohol and Substance Abuse.....	7
The Current Study	8
CHAPTER 2: METHOD	9
Participants and Procedures	9
Measures.....	9
CHAPTER 3: RESULTS	12
Correlations of Study Measures	12
Linear Regression of Study Measures.....	13
Independent t-test of Study Measures	14
ANOVA of Study Measures	14
CHAPTER 4: DISCUSSION.....	15
Predicting Alcohol and Substance Use among College Students	17
Limitations of the Study.....	18
Future Research.....	19
APPENDIX A: IRB OUTCOME LETTER	20
APPENDIX B: DEMOGRAPHIC QUESTIONNAIRE	22
APPENDIX C: SOCIAL CLASS QUESTIONNAIRE.....	24
APPENDIX D: DRUG AND ALCOHOL USE QUESTIONNAIRE.....	29
APPEDIX E: FIGURES AND TABLES.....	31
REFERENCES	37

LIST OF FIGURES

Table 1 <i>Correlations of Study Measures</i>	32
Table 2 <i>Regression Coefficients for Alcohol and Substance Use</i>	34
Table 3 <i>Independent t-test for Gender and Alcohol and Substance Use</i>	35
Table 4 <i>ANOVA for Race and Alcohol and Substance Use</i>	36

CHAPTER 1: INTRODUCTION

The frequency of alcohol and drug use as well as the possible causes for the misuse of these substances is a common research topic. It fascinates scientists as to why certain individuals drink alcohol, use substances, or do both while others do not partake in usage at all. A particular population of interest, in regards to the fascination, is college students across the world. College is a time in ones' life where they embark on a journey like no other. College also happens to be a place where both alcohol and substances alike are as common conversation as is the gym and going to class. The average age group of college students is 18 – 25 years of age with a good percentage of Freshmen and Sophomores being under the legal age limit to consume alcohol.

Within the college population there are a plethora of factors that can affect ones' alcohol and substance use behaviors. Relative to other young adults, daily constraints are lower and opportunities for exploration are higher among those going to college and living away from home (Bachman et al., 1997; Goldscheider & Goldscheider, 1999; White, Fleming, Kim, Catalano, & McMorris, 2008). Common factors that may have an effect on these behaviors are: gender, year in college, ethnicity, and socioeconomic status.

Substance Use Among College Students

Drinking alcohol is a norm in college and it is one of the most common places where students abuse alcohol (Walker, 1995). Alcohol misuse is often referred to as binge drinking, or drinking in excess, and constitutes four or more drinks for women and five or more drinks for men in a single occasion. In comparison with others aged 18 -24, it has been found that those who attend college are more likely to binge drink (Prendergast, 1994). When it comes to alcohol

drinking behaviors, the current literature has found that males drink more than do female students (Baab 2012; Caamaño-Isorna, 2008; Grenier, 1998; Jager, 2013; Patrick, 2010; Prendergast, 1994; Walker, 1995; Yankelevitz, 2012). Multiple studies have found that being in a higher socioeconomic class is related to higher levels of drinking (Caamaño-Isorna, 2008; Grenier, 1998; Humensky, 2010) and that White male students are more likely to binge drink than are other ethnic groups (Cacciola, 2014; Jones, 2001; O'Malley, 2002) Studies have also found that drinking increases as ones' year in college increases (Cacciola, 2014; O'Malley, 2002; Prendergast, 1994; Walker, 1995 as cited in Wechsler and McFadden, 1979). In comparison to 2-year institutions, students attending 4-year institutions have been found to binge drink significantly more (Jones, 2001; O'Malley, 2002), and students involved in Greek life were also found to binge drink significantly more when compared with students not involved in Greek life (Jones, 2001). Overall, approximately 90% of all college students report drinking alcohol occasionally or at least once a year (Jones, 2001) and in the last month almost 60 percent of college students report drinking alcohol at least once with almost 2 out of 3 reporting instances of binge drinking (NIAAA, 2015).

The use and misuse of substances involves both prescription drugs as well as illicit substances such as marijuana, cocaine, and heroin. It has been found that one is more likely to use or misuse substances if they also misuse alcohol (Prendergast, 1994). When it comes to using substances, one has a multitude of options when it comes to what types of substances to use. Different classes of substances result in different effects for the user; therefore, those who use them do so in pursuit of different effects. For example: benzodiazepines such as Ativan, Valium, and Xanax slow down the activity of ones' brain and result in a calming or drowsy effect;

stimulants such as amphetamines and methylphenidate increase alertness, attention, and energy, while raising one's blood pressure, heart rate, respirations, and increases the release of dopamine in the brain which results in euphoria; and opioids such as Vicodin, OxyContin, and Avinza reduce the intensity of pain signals that reach the brain which result in euphoria (Volkow, 2014). According to Rozenroek (2011), the three most popular prescription drugs used nonmedically by college students are opioids, central nervous system (CNS) depressants, and stimulants. Researchers have found that those individuals in college use marijuana the most frequently and it is the drug of choice (Jager, 2013; Prendergast, 1994; Primack, 2012; Walker, 1995) with about 5.9% of full-time college students smoking marijuana daily (NIDA, 2016). Researchers have also found that college students use prescription substances to increase their concentration and alertness (Judson, 2009; Teter, 2006) and recently there has been a rise in cocaine usage from 2.7% in 2013 to 4.4% in 2014 (NIDA, 2016).

Consequences of Substance Use

The abuse of alcohol is all too common throughout an individual's college experience. As previously stated the binge drinking occurs when an individual consumes 4 -5 drinks in one sitting. Whether it be one's roommate, friend group, significant other, or even themselves; many college students find themselves surrounded by binge drinking. There are a multitude of consequences that follow the misuse of alcohol in college and can affect an individual for the entirety of their life. Previous research has pointed to serious consequences of college drinking, including falling behind in academics, forgetting what happened while drinking, and personal injury (Cacciola, 2014; Nevid, J. S., 2014; Wechsler et al., 2002). The National Institute on

Alcohol Abuse and Alcoholism (2015) found that about 1,825 college students die each year from alcohol related injuries and about 696,000 college students are assaulted by a fellow students who has been drinking, 97,000 of which are alcohol-related sexual assault or rapes. Research has found that those students who partake in binge drinking are 10 times more likely than students who do not binge drink to engage in unsafe sex, damage property, experience personal injury, and even drive while under the influence (Grenier, 1998; Wechsler et al., 1994). Individuals who abuse alcohol or are dependent on it, have been found to be more likely to suffer from sleep issues as well (Baekeland et al., 1974; Brower et al., 2001; Caetano et al., 1998; Ehlers et al., 2010; Feuerlein, 1974; Foster et al., 1998; Popovici, I., & French, 2013). Alcohol abuse and binge drinking has been found to increase the likelihood of using illegal substances (Jones, 2001).

According to the CDC (2014), the long term medical consequences of alcohol abuse are varied. Abusing alcohol takes a negative toll on one's liver and heart with long term abuse being detrimental to liver and heart functioning, putting one at a high risk for liver and heart disease. Alcohol abuse also has a negative effect on one's cognitive functioning. Depression and anxiety become more common and issues have been found with learning new information and memory.

The consequences of the use of substances are just as serious as those from the misuse of alcohol. More persons are using prescription drugs non-medically than are using cocaine, heroin, hallucinogens, ecstasy, and inhalants combined and more substance abuse deaths are caused by prescription opioids than by cocaine and heroin combined (Rozenbroek, & Rothstein, 2011). As with alcohol misuse, the effects that these substances have on our bodies are varied. According

to the National Institute of Drug Abuse (2012), using illicit substances can have negative effects for an individuals' cardiovascular, respiratory, gastrointestinal, musculoskeletal, and neurological functioning. The use of substances also increases the risky behaviors of the user, including sexual behavior. For example, substances that require the user to utilize needles increases the risk for sharing needles and having unsafe sex which increases the risk for serious infectious diseases such as HIV and Hepatitis. Therefore, excessive and escalating substance use in young adulthood is associated with short-term physical, socioemotional, and academic problems (Bondy, 1996; Engs, Diebold, & Hanson, 1996; Everett, Lowry, Cohen, & Dellinger, 1999; Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002; Jager, 2013), and with long-term substance use problems and other forms of psychopathology (Jager, 2013; Schulenberg & Maggs, 2002; Vaillant, & HillerSturmhofel, 1996).

Since marijuana has been found in multiple studies to be the substance of choice for college students the effects it has on individuals deserves attention. Marijuana, like other illicit substances, has varying medical effects on one's body. Pope (1996) found that heavy marijuana use was associated with reduced functioning of the attentional/executive system. The executive system, found in the frontal lobe of the brain, is responsible for helping us to complete tasks, plan, manage time, judgement, etc. Though, Schreiner and Dunn (2012) found that there are virtually no long lasting cognitive effects of marijuana usage. The use of marijuana has also been found to be associated with binge drinking. Jones (2001) found that those students who partook in binge drinking for at least 10 days in the previous month had odds of currently using marijuana that were 34.3 times higher than students who were not binge drinking.

Factors Related to Substance Use Among College Students

When it comes to college students it can be expected that gender, ethnicity, year in college, and socioeconomic status are related to one's frequency and level of substance abuse. According to the literature, it has been found that males drink more than females do (Baab 2012; Caamaño-Isorna, 2008; Grenier, 1998; Jager, 2013; O'Malley, 2002; Patrick, 2010; Prendergast, 1994; Walker, 1995; Yankelevitz, 2012) and that Caucasian male students are more likely to partake in binge drinking behaviors (Cacciola, 2014; Jones, 2001; O'Malley, 2002). The higher socioeconomic status one is in has been linked to higher levels of binge drinking as well (Caamaño-Isorna, 2008; Grenier, 1998; Humensky, 2010). Studies have also found that drinking increases as ones' year in college increases. (Cacciola, 2014; Prendergast, 1994; Walker, 1995 as cited in Wechsler and McFadden, 1979). The literature on substance use among college students has found there to be, in most situations, a link between their alcohol use and their drug use (Prendergast, 1994).

In regards to use of prescription drugs it has been found that Caucasians and Hispanics are three times more likely than African Americans to use them and two times more likely than Asians to use them (Teter, 2006). In regards to gender, men are more likely than women to use prescription substances (McCabe, 2004; Teter, 2006). It has also been found that those from a higher socioeconomic status where their parents have a college degree are more likely than those whose parents have a high school degree to use illicit substances; specifically, cocaine and marijuana (Humensky, 2010).

Social and Economic Costs of Alcohol and Substance Abuse

According to the World Health Organization (WHO) (2004), the social and economic costs of alcohol and substance abuse are staggering. The social costs of abusing these substances are those such as causing vehicular accidents while under the influence, strained familial relationships, and increased domestic violence between partners and families. When an individual abuses these substances they are not only harming themselves mentally and physically, but also their interpersonal relationships. The economic cost of abusing these substances only adds to the social costs. It has been found that workers who consume alcohol the night before their shift are two times more likely, than their co-workers who did not consume alcohol, to be absent from work (WHO, 2004). Also, the cost of putting those who are addicted to alcohol and substances through a rehabilitation program is very expensive. In 2003, \$21 billion dollars was spent on substance abuse treatment in the United States alone (French, 2008).

Knowing the costs of abusing these substances can be of great benefit to society as a whole. The social and economic costs estimates can be used to justify policies that are in place on alcohol and as possible ways to amend policy to serve as a greater benefit to society. The information that can be gathered from the costs of abusing these substances can also be used to improve research on the topic. A final benefit of knowing the costs of these would be to benefit those whom are trying to seek out help in recovering from abuse of these substances. Having a knowledge of what occurs after one goes through abusing these substances and the costs they have for not only themselves, but everyone around them can be useful in providing more

effective and beneficial care to those suffering from substance use disorders and their families (Single, 2003).

The Current Study

The current study sought to examine the relationship between participant characteristics (i.e., ethnicity, gender, year in college, socioeconomic status) and alcohol and substance use among college students. Based on previous research, it was hypothesized that participants who identify as white, as being male, those classified as being in a junior and senior standing, as well as those in a higher socioeconomic status would be more likely to report alcohol and substance use than other participants. The current study also aimed to assess how these participant characteristics combine to best predict alcohol and substance use among college students.

CHAPTER 2: METHOD

Participants and Procedures

Data for the current study came from a recent study conducted at the University of Central Florida (UCF) via the Sona System. Participants in the original study took 32.50 minutes to complete the online questionnaire and received class credit or extra credit for their participation. The current study was submitted to the IRB for review and was deemed non-human subjects research (see Appendix A) considering that new data is not being collected. A total of 1,013 college students participated in the original study. A total of 111 participants were deleted from the study because their responses indicated that they were not involved with the survey or they did not answer important questions in the study, leaving a total sample size of 902.

The majority of participants were female ($n = 647$, 71.7%) and identified as white ($n = 613$, 68%). The age of students ranged from 18 to 59 years ($M = 21.58$). Two hundred and eighty-six (31.7%) participants indicated that they were in their freshman year, 12.7% ($n = 115$) were sophomores, 29.5% ($n = 266$) were juniors, 25.4% ($n = 229$) were seniors, and the remaining .7% ($n = 6$) were graduate students.

Measures

Demographic questionnaire. Participants answered five questions related to their age, ethnicity, gender, and year in college. The complete list of demographic questions can be found in Appendix B.

Social class. Social class was assessed using measures of parental education, income, and occupation as well as measures of self-identified social class identity (for a review, see Rubin 2012). Students indicated the highest education level of (a) their mother and (b) their father. Categories used included: no formal schooling, elementary school, middle school (junior high school), high school (secondary education), university or college – but did not graduate, university or college – graduated with an undergraduate degree (e.g. Bachelors), university or college – graduated with a postgraduate degree (Masters or PhD), don't know.

Students also indicated how they thought most people would rate the occupation of (a) their mother and (b) their father in terms of its prestige and status on an 11-point scale anchored extremely high status and prestige (11) and extremely low status and prestige (1), with a don't know option available. They also provided a subjective indication of their family income during childhood using a 5-point scale anchored well above average (5) and well below average (1), with a don't know option available.

Finally, students completed three subjective measures of social class (e.g. Ostrove & Long 2007; Rubin & Wright, in press; Soria, Stebleton, and Huesman 2013; for a discussion, see Rubin et al. 2014). Participants indicated the social class that they felt best described (a) themselves, (b) their mother, and (c) their father using a 6-point scale: poor (1), working class (2), lower middle class (3), middle class (4), upper middle class (5), upper class (6), with a don't know option available.

Response options of don't know were coded as missing data for all items. Items were then transformed to z scores and then averaged to derive at a total social class measure that will

be used in analyses. Alpha reliability in the current study was .80. The social class questionnaire can be found in Appendix C.

Substance and alcohol use. Participants answered a series of questions pertaining to their use of substances and alcohol in the past thirty days. Participants were asked how often they have used substances using an 8-point Likert-type scale (never used, have used but not in the past 30 days, 1-2 days, 3-5 days, 6-9 days, 10-19 days, 20-29 days, all 30 days). Substances listed were modified from Primack et al. (2013) with additional substances added based on Snipes and Benotsch (2013). Primack et al. (2013) reported that their questions contained good face validity while Snipes and Benotsch (2013) reported concurrent validity with their measures. Items were summed to derive at a total substance and alcohol use measure that will be used in analyses. Alpha reliability in the current study was .73. The substance and alcohol use questionnaire can be found in Appendix D.

CHAPTER 3: RESULTS

Preliminary analyses to assess the reliability of scales, distributional characteristics, and the extent of missing data were first conducted. Missing data were minimal for most variables (< 5%) and were found to be missing completely at random (MCAR). Therefore, a simple mean substitution imputation method was used (Kline, 2005). This method involves replacing the missing data with the overall mean value for the variable. There is the possibility that replacing missing data in this manner can distort the distribution of the data. However, it had no detectable effect on this dataset. This method of handling missing data is preferable to deletion methods as it allows for complete case analyses, does not reduce the statistical power of tests, and takes into consideration the reason for missing data (Twala, 2009). Moreover, this method of data imputation is a good representation of the original data as long as the missing data is less than 20%, which was the case in the original sample (Downey & King, 1998).

For this study, data was analyzed in SPSS using correlations to determine how participant characteristics (i.e., ethnicity, gender, year in college, socioeconomic status) and alcohol and substance use among college students are related. Linear regression analyses were also conducted to determine how participant characteristics combine to best predict alcohol and substance use among college students.

Correlations of Study Measures

A Pearson correlation was conducted to determine if there was a relationship between ethnicity and alcohol and substance use. The variables included for ethnicity were: White, Black,

Hispanic, and Asian. Significant correlations were found between being white and alcohol and substance use, $r(351) = .14, p < .01$, and between being black and alcohol and substance use, $r(351) = -.12, p < .01$. No significant correlations between being Asian or Hispanic and alcohol and substance use were found. A Pearson correlation was then conducted to determine if there was a relationship between gender (male or female) and alcohol and substance use. A significant correlation was found between being male and alcohol and substance use, $r(351) = -.10, p < .01$.

A Pearson correlation was also conducted to determine if there was a significant relationship between socioeconomic status and alcohol and substance usage. A significant correlation was found between socioeconomic status and alcohol and substance usage, $r(351) = .11, p < .05$. A significant correlation was also found between socioeconomic status and being Hispanic, $r(351) = -.11, p < .05$, being White, $r(351) = .17, p < .01$, being a Freshman, $r(351) = .17, p < .01$ (.173), and being a Senior, $r(351) = -.17, p < .01$. To determine if there was a significant relationship between year in college and alcohol and substance usage a Pearson correlation was conducted. The variables used for year in college were: Freshman, Sophomore, Junior, Senior, and Graduate Student. There were no significant correlations found between year in college and alcohol and substance use, but there were significant correlations found between the different classes. All of the correlations for study measures can be found in Table 1.

Linear Regression of Study Measures

A linear regression was conducted to determine how substance and alcohol usage is influenced by ones' race, gender, year in college, and socioeconomic status. The predictors used were race (White, Black, Asian, and Hispanic), participant gender (male or female), year in

college (Freshman, Sophomore, Junior, Senior, and Graduate Student), and socioeconomic status. Results were significant, $F(10, 342) = 2.24, p = .015, R^2 = .06$. The overall model accounted for six percent of the variance. The results can be found in Table 2.

Independent t-test of Study Measures

To further examine the relationship between gender and alcohol and substance use an independent t-test was conducted. The grouping variable was participant gender where a 1 was defined as male ($M = 18.80, SD = 6.71$) and a 2 was defined as female ($M = 17.54, SD = 5.58$). The test variable was total alcohol and substance use score for each participant. The results were significant, $t(900) = 2.88, p < .05$. Results can be found in Table 3.

ANOVA of Study Measures

To further examine the relationship between participant race and alcohol and substance use an ANOVA was conducted. The dependent factor was the total drug and alcohol score for each participant and the fixed factor was the identified participant race. The ANOVA was found to be significant, $F(4, 897) = 181.36, p < .05, R^2 = .02$. The overall model accounted for two percent of the variance. Results can be found in Table 4.

CHAPTER 4: DISCUSSION

The aim of this study was to assess the substance and alcohol use in a college sample in regards to their year in college, gender, ethnicity, and socioeconomic status. It was hypothesized that participants in the study who identified as white males, those classified as a junior or senior in class standing, and those in a higher socioeconomic group would be more likely to report alcohol and substance use in comparison to other participants. The current study also aimed to determine how participant characteristics combine to best predict alcohol and substance use among college students.

In line with the hypothesis, the current study found a significant correlation between participants' alcohol and substance use and identifying as white, which supports the current literature. Cacciola (2014), Jones (2001), and O'Malley (2002) conducted studies examining this relationship and found that White males are more likely to both drink and binge drink. A significant negative correlation was also found between participants' alcohol and substance use and identifying as black. This means that those participants who identified as black were less likely to partake in alcohol and substance use. There are a variety of factors that may play a role in these results. Some of which may be that white students have more resources, socially or financially, that provide them with an increased opportunity for alcohol and substance use. Another possibility is that a greater number of white students partake in Greek Life which permits high levels of drinking and substance use. Jones (2001) found that students involved in fraternities and sororities were more likely than those students not involved in Greek Life to

binge drink. A strong social identity among blacks may help play a protective role against substance use, especially when in a predominantly white environment (Stock et al., 2013).

Also in line with the hypothesis, a significant correlation between male participants and alcohol and substance use was found. This shows that in our sample males reported higher usage than did the female participants, which is consistent with the current literature as well. Baab (2012), Caamaño-Isorna (2008), Grenier (1998), Jager (2013), Patrick (2010), Prendergast (1994), Walker (1995), and Yankelevitz (2012) all found in their studies that male participants reported higher levels of usage than did females. Males may be reporting higher levels of usage in comparison to females because it is generally more socially acceptable for males to do so. Males also may engage in more usage as a method of bonding with fellow males. In a college sample it may be expected due to the large number of college males in fraternities, which are known for their copious amounts of drinking.

In regards to socioeconomic status and alcohol and substance use, a significant correlation was found which supports the hypothesis and the current literature (Caamaño-Isorna, 2008; Grenier, 1998; Humensky, 2010). This is expected due to the fact that those with a higher socioeconomic status have more financial resources. With heightened financial resources, accessing substances and alcohol whenever one pleases is much easier. Those students in a higher socioeconomic bracket, most likely, were raised in an environment where, if wanted, access to these was also easier. In a college population those students whom are from a higher socioeconomic class most likely are not having to work their way through college and may not

have to be as cautious with their spending habits which elicits higher usage when compared with students whom are having to work their way through college in order to pay for their education.

Additionally, the current study found a significant correlation among year in college and substance use. While this was not specified in the hypothesis, it is in agreement with previous research in that substance use increases as year in college increases (Cacciola, 2014; O'Malley, 2002; Prendergast, 1994; Walker, 1995 as cited in Wechsler and McFadden, 1979). As one progresses through college they are more exposed to the 'party scene.' As peers become of legal drinking age buying alcohol is accomplished much easier and therefore it is expected that consumption will increase. Upon entering college most students are under the legal drinking age and are not as likely to be exposed to this until they reach their Junior and Senior year.

To further examine the effects of our study measures, race and gender, other analyses were done, an ANOVA and t-test respectively; both of which provided significant results. The results of the t-test further support the significant correlation between males and alcohol and substance use and it also supports the literature. The results of the ANOVA further support the significant correlation we found between being white and substance and alcohol use in that those participants who identified as white had the highest average alcohol and substance use score. This too, like with the significant correlation, supports the literature.

Predicting Alcohol and Substance Use among College Students

One aim of the current study was to determine how participant characteristics commonly associated with substance use could be used to predict alcohol and substance use among college students. This was examined in the current study using a linear regression analysis. Predictor

variables included such participant characteristics as race/ethnicity, gender, year in college, and social class. All of these participant characteristics have previously been found to relate to substance use among college students and significant correlations for these variables were found in the current study.

While the overall model was significant, the variables with the most influence on the substance use among college students were social class and year in college. In a college sample this is not surprising due to the fact that when students enter college most of them are either 18 or 19 years old and have not yet been exposed to the 'party scene'. As students' progress through college though, the 'party scene' becomes more prevalent in their social circles and therefore predicts heavily on their usage. While in college most students have very limited funding as well since education takes up a majority of time and maintaining a full time job with a salary is almost unheard of. Students from a higher socioeconomic background may have more funding available to them via their family and therefore are able to financially engage in alcohol and substance use at a higher rate than are students not from a more privileged family. Surprisingly, participants' race/ethnicity and gender were not as influential in regards to substance use as what would have been expected based on previous literature in which it was consistently found that white males are the predominant users over other ethnic and gender groups (McCabe, 2004; Teter, 2006).

Limitations of the Study

In the current study there are a few limitations that should be addressed. The first is that we used a sample size at a large southeastern university with a large Greek life population which may have had an effect on the results in that the environment encourages drinking. The next

issue that should be addressed is that the survey of substance and alcohol use was conducted online and may have interfered or had an effect on how participants responded to the questions in that participants may not have been completely honest. The variables used in the study cannot definitely show a cause and effect relationship between our variables (gender, ethnicity, year in college, and socioeconomic status) and substance and alcohol use though they do show relationships between them.

Future Research

The current study addresses the relationship between our variables (gender, ethnicity, year in college, and socioeconomic status) and substance and alcohol use and was able to find significant results. Future research should aim at assessing the ability of certain variables to predict substance and alcohol abuse. If the core predictive variables are found then it may be easier to help those who suffer from addiction and can even strengthen the entire field of research on the topic. Future research may also want to assess the role that Greek life has on the variables we assessed and how it affects substance and alcohol use. This has been a topic in the literature and may produce new results. Future research may seek to take on a longitudinal approach in which participants are assessed in high school, college, and then after graduation to see if the results are consistent and carry through adult development. Other variables may also have an effect on alcohol and substance use, such as: marital status, upbringing, genetic predisposition, family history, etc., and should be considered in future studies that seek to understand relationships between variables and alcohol and substance use.

APPENDIX A: IRB OUTCOME LETTER



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

From : **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To : **Chrysalis L. Wright and Co-PI: Kelcey Little**

Date : **May 22, 2015**

Dear Researcher:

On 05/22/2015 the IRB determined that the following proposed activity is not human research as defined by DHHS regulations at 45 CFR 46 or FDA regulations at 21 CFR 50/56:

Type of Review: Not Human Research Determination
Project Title: Drug and alcohol use based on social class and gender
Investigator: Chrysalis L Wright
IRB ID: SBE-15-11342
Funding Agency:
Grant Title:
Research ID: N/A

University of Central Florida IRB review and approval is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are to be made and there are questions about whether these activities are research involving human subjects, please contact the IRB office to discuss the proposed changes.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

A handwritten signature in black ink that reads "Joanne Muratori".

Signature applied by Joanne Muratori on 05/22/2015 04:15:36 PM EDT

IRB manager

APPENDIX B: DEMOGRAPHIC QUESTIONNAIRE

1) What is your current age? __

2) Which of the following best describes your racial background?

- a. Black or African-American
- b. White
- c. American Indian or Alaska Native
- d. Asian or Pacific Islander
- e. Other

3) Are you of Hispanic origin?

- a. yes
- b. no

4) What is your gender?

- a. male
- b. female

5) What year are you in college?

- a. first-year
- b. second-year
- c. third-year
- d. fourth-year
- e. postgraduate

APPENDIX C: SOCIAL CLASS QUESTIONNAIRE

1) The highest education level achieved by my father was/is:

- No formal schooling
- Primary school (Kindergarten to Year 6)
- Secondary or high school (Years 7 to 10)
- Senior secondary school (Years 11 & 12)
- Technical and Further Education (TAFE)
- University - undergraduate degree (Bachelor degree)
- University - postgraduate degree (Masters or PhD)
- Don't know

2) The highest education level achieved by my mother was/is:

- No formal schooling
- Primary school (Kindergarten to Year 6)
- Secondary or high school (Years 7 to 10)
- Senior secondary school (Years 11 & 12)
- Technical and Further Education (TAFE)
- University - undergraduate degree (Bachelor degree)
- University - postgraduate degree (Masters or PhD)
- Don't know

3) Please indicate how you think most people would rate your mother's main occupation in terms of its prestige and status.

- Extremely low status and prestige

- Very low
- Low
- Moderately below average
- Slightly below average
- Average
- Slightly above average
- Moderately above average
- High
- Very high
- Extremely high status and prestige
- Don't know

4) Please indicate how you think most people would rate your father's main occupation in terms of its prestige and status.

- Extremely low status and prestige
- Very low
- Low
- Moderately below average
- Slightly below average
- Average
- Slightly above average
- Moderately above average
- High
- Very high
- Extremely high status and prestige

- Don't know

5) My family income when I was a child was:

- Well below average
- Slightly below average
- Average
- Slightly above average
- Well above average
- Don't know

6) My mother's social class was/is:

- Working-class
- Lower middle-class
- Middle-class
- Upper Middle-class
- Upper-class
- Don't know

7) My father's social class was/is:

- Working class
- Lower middle-class
- Middle-class

- Upper middle-class
- Upper class
- Don't know

8) My social class is:

- Working class
- Lower middle-class
- Middle-class
- Upper middle-class
- Upper class
- Don't know

APPENDIX D: DRUG AND ALCOHOL USE QUESTIONNAIRE

Please indicate how often you have used the following substances within the past 30 days using the following scale:

- (a) Never used
- (b) Have used, but not in the past 30 days
- (c) 1-2 days
- (d) 3-5 days
- (e) 6-9 days
- (f) 10-19 days
- (g) 20-29 days
- (h) All 30 days

1. Cigarettes
2. Tobacco smoked from a Hookah (water pipe)
3. Little cigars (or cigars in general)
4. Marijuana
5. Ecstasy
6. Methamphetamines
7. Cocaine
8. Ketamine
9. Poppers (amyl or butyl nitrate)
10. Alcohol (one serving or drink in a single sitting)
11. Alcohol (more than 4 servings or drinks in a single sitting for females and more than 5 servings or drinks in a single sitting for males)

APPEDIX E: FIGURES AND TABLES

Table 1 *Correlations of Study Measures*

	1	2	3	4	5	6	7	8	9	10
1. Gender		-.03	-.10**	-.02	.03	.00	-.05	-.15**	-.06	.11**
2. Social Class	-.07		.11*	-.11*	-.10	.17**	-.03	.17**	.09	.11**
3. Drug and Alcohol Usage	-.10**	.11*		-.06	-.12**	.14**	-.03	-.06	.00	.03
4. Hispanic	-.02	-.11*	-.06		.12**	-.48**	-.09**	-.04	-.05	.04
5. Black	.03	-.10	-.12**	.12**		-.55**	-.10**	.02	-.03	.04
6. White	.00	.17**	.14**	-.48**	-.55**		-.38**	.02	.03	-.04
7. Asian	-.05	-.03	-.03	-.09*	-.10**	-.38**		.02	.01	-.06
8. Freshman	-.15**	.17**	-.06	-.04	.02	.02	.02		-.26**	-.44**
9. Sophomore	-.06	.09	.00	-.05	-.03	.03	.01	-.26**		-.25**
10. Junior	.11**	-.08	.03	.04	.04	-.04	-.06	.44**	-.25**	
11. Senior	.10**	-.17**	.04	.04	-.04	-.01	.04	-.40**	-.22	-.38**
12. Graduate	-.04	.08	.00	-.03	-.03	.06	-.02	-.06	-.03	-.05

* $p < .05$, ** $p < .01$

Table 1 Continued 1 *Correlations of Study Measures*

	11	12
1. Gender	.10**	-.04
2. Social Class	-.17**	.08
3. Drug and Alcohol Usage	.04	.00
4. Hispanic	.04	-.03
5. Black	-.04	-.03
6. White	-.01	.06
7. Asian	.04	-.02
8. Freshman	-.40**	-.06
9. Sophomore	-.22**	-.03
10. Junior	-.38**	-.05
11. Senior		-.05
12. Graduate	-.05	

* $p < .05$, ** $p < .01$

Table 2 *Regression Coefficients for Alcohol and Substance Use*

Variables	Alcohol & Substance Use
Hispanic	.00
Black	-.01
White	.19
Asian	.04
Gender	-.07
Freshman	-
Sophomore	.02
Junior	.12*
Senior	.12*
Graduate	-.01
Social Class	.11*
R^2	.06
F	2.24

* $p < .05$

Table 3 *Independent t-test for Gender and Alcohol and Substance Use*

Gender	Mean (<i>M</i>)	Standard Deviation (<i>SD</i>)
Male	18.80	6.71
Female	17.54	5.58

Table 4 ANOVA for Race and Alcohol and Substance Use

Race	Mean (<i>M</i>)	Standard Deviation (<i>SD</i>)
Hispanic	16.84	5.00
Black	16.00	5.14
White	18.44	6.18
Asian	17.14	5.73
Other	18.29	5.05

REFERENCES

- Babb, S., Stewart, C., & Bachman, C. (2012). Gender, ethnic, age, and relationship differences in non-traditional college student alcohol consumption: A tri-ethnic study. *Journal Of Ethnicity In Substance Abuse, 11*(1), 22-47. doi:10.1080/15332640.2012.65252
- Caamaño-Isorna, F., Corral, M., Parada, M., & Cadaveira, F. (2008). Factors associated with risky consumption and heavy episodic drinking among Spanish university students. *Journal Of Studies On Alcohol And Drugs, 69*(2), 308-312.
- Cacciola, E. T., & Nevid, J. S. (2014). Alcohol consumption in relation to residence status and ethnicity in college students. *Psychology Of Addictive Behaviors, 28*(4), 1278-1283. doi:10.1037/a0038362
- Center for Disease Control (2014, November 7). Fact sheets – Alcohol use and your health. Retrieved from <http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>
- Downey, R. G., & King, C. (1998). Missing data in Likert ratings: A comparison of replacement methods. *Journal of General Psychology, 125*, 175-191.
- French, M. T., Popovici, I., & Tapsell, L. (2008). The Economic Costs of Substance Abuse Treatment: Updated Estimates and Cost Bands for Program Assessment and Reimbursement. *Journal of Substance Abuse Treatment, 35*(4), 462–469. <http://doi.org/10.1016/j.jsat.2007.12.008>
- Grenier, C. E., Gorskey, E. J., & Folse, D. W. (1998). A survey analysis of alcohol use at a Black university in the deep south. *Journal Of Child & Adolescent Substance Abuse, 7*(4), 79-92. doi:10.1300/J029v07n04_05

- Humensky, J. (2010). Are Adolescents With High Socioeconomic Status More Likely To Engage In Alcohol And Illicit Drug Use In Early Adulthood? *Substance Abuse Treatment, Prevention, and Policy*, 5(19), 1-10.
- Jager, J., Schulenberg, J. E., O'Malley, P. M., & Bachman, J. G. (2013). Historical variation in drug use trajectories across the transition to adulthood: The trend toward lower intercepts and steeper, ascending slopes. *Development And Psychopathology*, 25(2), 527-543.
- Jones, S. E., Oeltmann, J., Wilson, T. W., Brener, N. D., & Hill, C. V. (2001). Binge drinking among undergraduate college students in the United States: Implications for other substance use. *Journal Of American College Health*, 50(1), 33-38.
doi:10.1080/07448480109595709
- Judson, R., & Langdon, S. (2009). Illicit Use Of Prescription Stimulants Among College Students: Prescription Status, Motives, Theory Of Planned Behaviour, Knowledge And Self-diagnostic Tendencies. *Psychology, Health & Medicine*, 14(1), 97-104.
doi:10.1080/13548500802126723
- Kline, R.B. (2005). Principles and Practice of Structural Equation Modeling. NY: The Guildford Press.
- McCabe, S., Knight, J., Teter, C., & Wechsler, H. (2004). Non-medical Use Of Prescription Stimulants Among US College Students: Prevalence And Correlates From A National Survey. *Addiction*, 100(1), 96-106. doi:10.1111/j.1360-0443.2004.00944.x
- National Institute on Alcohol Abuse and Alcoholism (NIAAA). (2015, December 01). College Drinking. Retrieved from <http://niaaa.nih.gov/alcohol-health/special-populations-co-occurring-disorders/college-drinking>

- National Institute on Drug Abuse (NIDA). (2016, April 14). Alcohol and Drug Use in College-Aged Young Adults: 2014 Monitoring the Future Survey Results. Retrieved from <https://teens.drugabuse.gov/blog/post/alcohol-and-drug-use-college-aged-young-adults-2014-monitoring-future-survey-results>
- National Institute on Drug Abuse (NIDA). (2012). Medical Consequences of Drug Abuse Retrieved from <http://www.drugabuse.gov/related-topics/medical-consequences-drug-abuse> on September 19, 2015
- O'Malley, P., & Johnston, L. (2002). Epidemiology of alcohol and other drug use among American college students. *Journal of Studies on Alcohol, Supplement J. Stud. Alcohol Suppl.*, 23-39. <http://dx.doi.org/10.15288/jsas.2002.s14.23>
- Ostrove, J.M., & Long, S.M. (2007). Social Class and Belonging: Implications for College Adjustment. *Review of Higher Education*, 30, 363–89.
- Patrick, M. E., Wray-Lake, L., Finlay, A. K., & Maggs, J. L. (2010). The long arm of expectancies: Adolescent alcohol expectancies predict adult alcohol use. *Alcohol And Alcoholism*, 45(1), 17-24. doi:10.1093/alcalc/agp066
- Pope, H. J., & Yurgelun-Todd, D. (1996). The residual cognitive effects of heavy marijuana use in college students. *JAMA: Journal Of The American Medical Association*, 275(7), 521-527. doi:10.1001/jama.275.7.521
- Popovici, I., & French, M. T. (2013). Binge drinking and sleep problems among young adults. *Drug And Alcohol Dependence*, 132(1-2), 207-215. doi:10.1016/j.drugalcdep.2013.02.001

- Prendergast, M. L. (1994). Substance use and abuse among college students: A review of recent literature. *Journal Of American College Health, 43*(3), 99-113.
doi:10.1080/07448481.1994.9939094
- Primack, B. A. et al. (2013). Tobacco, Marijuana, and Alcohol Use in University Students: A Cluster Analysis. *Journal of American College Health, 60*, 374-386.
- Primack, B. A., Kim, K. H., Shensa, A., Sidani, J. E., Barnett, T. E., & Switzer, G. E. (2012). Tobacco, marijuana, and alcohol use in university students: A cluster analysis. *Journal Of American College Health, 60*(5), 374-386. doi:10.1080/07448481.2012.663840
- Rozenbroek, K., & Rothstein, W. G. (2011). Medical and nonmedical users of prescription drugs among college students. *Journal Of American College Health, 59*(5), 358-363.
doi:10.1080/07448481.2010.512044
- Rubin, M. (2012). Social Class Differences in Social Integration among Students in Higher Education: A Meta-analysis and Recommendations for Future Research. *Journal of Diversity in Higher Education, 5*, 22–38. doi:10.1037/a0026162.
- Rubin, M., Densen, N., Kilpatrick, S., Matthews, K.E., Stehlik, T., & Zyngier, D. (2014). I am working-class: Subjective self-definition as a missing measure of social class and socioeconomic status in higher education research. *Educational Researcher, 43*, 196–200. doi:10.3102/0013189X14528373.
- Rubin, M., & Wright, C. L. (in press). Age differences explain social class differences in students' friendship at university: Implications for transition and retention. *Higher Education*. doi:10.1007/s10734-014-9844-8.

- Schreiner, A. M., & Dunn, M. E. (2012). Residual effects of cannabis use on neurocognitive performance after prolonged abstinence: A meta-analysis. *Experimental And Clinical Psychopharmacology*, 20(5), 420-429. doi:10.1037/a0029117
- Single E et al. International guidelines for estimating the costs of substance abuse. Geneva, World Health Organization, 2003
- Soria, K.M., Stebleton, M.J., & Huesman, R.L. (2013). Class counts: Exploring differences in academic and social integration between working-class and middle/upper-class students at large, public research universities. *Journal of College Student Retention: Research, Theory and Practice*, 15, 215–42. doi:10.2190/CS.15.2.e.
- Snipes, D., & Benotsch, E. G. (2013). High-risk cocktails and high-risk sex: Examining the relation between alcohol mixed with energy drink consumption, sexual behavior, and drug use in college students. *Addictive Behaviors*, 38, 1418-1423.
- Stock, M. L., Gerrard, M., Weng, C., Gibbons, F. X., Houlihan, A. E., Lorenz, F. O., & Simons, R. L. (2013). Racial identification, racial composition and substance use vulnerability among african american adolescents and young adults. *Health Psychology*, 32, 237-247. doi: 10.1037/a0030149
- Teter, C., McCabe, S., LaGrange, K., Cranford, J., & Boyd, C. (2006). Illicit Use Of Specific Prescription Stimulants Among College Students: Prevalence, Motives, And Routes Of Administration. *Pharmacotherapy*, 26(10), 1501-1510. doi:10.1592/phco.26.10.1501
- Twala, B. (2009). An empirical comparison for techniques for handling incomplete data using decision trees. *Applied Artificial Intelligence*, 23, 373-405. DOI: 10.1080/08839510902872223.
- Volkow, N. (2014, November 1). Prescription Drug Abuse. Retrieved August 6, 2015

Walker, S. J. (1995, December). College students, alcohol, and drugs, and culture: An application of the theories and practices of robert kegan and paulo freire. *Dissertation Abstracts International Section A*, 56, 2140.

World Health Organization Global Status Report on Alcohol (2004)

Yankelevitz, R. L., Mitchell, S. H., & Zhang, Y. (2012). Gender differences in factors associated with alcohol drinking: Delay discounting and perception of others' drinking. *Drug And Alcohol Dependence*, 123(1-3), 273-276. doi:10.1016/j.drugalcdep.2011.11.012