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Psychological distress and substance use among college students

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PSYCHOLOGICAL DISTRESS AND SUBSTANCE USE AMONG COLLEGE STUDENTS

by

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A thesis submitted in partial fulfillment of the requirements
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ABSTRACT

Research indicates that young adults have relatively high rates of psychological distress and substance use. Research also suggests that psychological distress and substance use are correlated as individuals may turn to substance use as a coping mechanism for psychological distress. The goal of the current research is to examine the relationship between psychological distress and substance use among college students. A secondary question is to determine if the relationship between psychological distress and substance use is different for men and women. College students are a good sample for this research question for a number of reasons. First, more young adults are enrolled in college today than ever, with about 70% of high school graduates in 2011 enrolling in college the following fall. Second, research indicates that the prevalence of substance use is relatively high among college students and that young adults enrolled in college are at increased risk for certain types of substance use compared to their same age peers who do not attend college. Third, research indicates that college students are at greater risk for psychological distress compared to their same age peers who do not attend college. This may be due to the fact that college students are exposed to unique stressors that are likely to increase risk for psychological distress. The current research uses data from a sample of college students to examine the relationship between psychological distress and substance use. Several forms of substance use are included for the dependent variable. First, a measure of binge drinking is used based on the Harvard School of Public Health College Alcohol Study to measure binge drinking. Second, a measure of marijuana use is included. Third, a measure of prescription drug misuse is included based on the National Survey on Drug Use and Health. All substance use measures are coded 0 = No and 1 = Yes. The independent variable of interest is

psychological distress, measured with Kessler's Psychological Distress Scale (K10). We also measure respondent's sociodemographic characteristics (e.g., age, gender, race/ethnicity) and correlates of substance use (e.g., Greek affiliation, peer substance use, and grades) to include as controls in our analysis. A positive correlation is expected between psychological distress and substance use, as respondents with higher levels of psychological distress will be more likely to report binge drinking, marijuana use, and prescription drug misuse. In addition, it is expected that the relationship between psychological distress and all forms of substance use is moderated by gender. The relationship between psychological distress and substance use is expected to be stronger for females. To test research hypotheses several logistic regression models are estimated.

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CHAPTER 1: INTRODUCTION

In recent decades the relevance of a college education has changed dramatically. Data from the Digest of Education Statistics indicates that college student enrollment has been on the rise (National Center for Education Statistics, 2012). In 2010, there were approximately 21 million young adults enrolled in college, an increase of 73% since 1980 (National Center for Education Statistics, 2012). Furthermore, there has been an increase in the percentage of high school graduates that enter college immediately after completing high school. In 1980 only 49% of high school graduates enrolled in college the following fall, this has increased to 70% in 2010 (National Center for Education Statistics, 2012). These statistics indicate that college has become a significant transitional period between leaving childhood and becoming an adult. Studying college students is important because research suggests that there is an increase in risky behaviors like alcohol and other drug use (Gfroerer, Greenblatt, & Wright 1997; Johnston et al., 2007; Paschall & Flewelling 2002; Slutske et al., 2004; Quintero, Perterson & Young 2006; Ford & Arrastia 2008) and psychological distress (Blanco et al., 2008; Deckro et al., 2002; Zullig & Divin 2012) during this age period.

CHAPTER 2: LITERATURE REVIEW

SUBSTANCE USE

College students are a popular sample for substance use research and some research indicates that college students are at greater risk for substance use compared to their same-age peers who do not attend college. Alcohol use is higher among the college population [64%] compared to those who are not in college [56%] for both measures (Johnston et al., 2011). Research also suggests that college students are also more likely to binge drink than those who are not in college (Johnston et al., 2011). Johnston et al., (2011) also found that Adderall and Ritalin are frequently used among the college population as aids to help students study because it helps them become alert and focus on their work.

According to Johnston et al., (2011), men had a slightly higher alcohol intake within their group [84.7%] when compared to women's alcohol intake annually [83.1%]. When examining their data on the prevalence of illicit drug use annually, men had a higher percentage of intake within their group [36.6%] than women's intake [31.3%]. Males also had a higher percentage rate within their gender group on the use of marijuana annually with 34.1% compared to the 26.3% that women had. This was data taken from the 19-30 age group. All in all, this research suggests that men are more likely to use these types of drugs.

When examining other correlates of substance use, whites have higher rates than non-whites (Gledhill-Hoyt et al., 2000; Johnston et al., 2007; Mohler-Kuo et al., 2003; Mustaine & Tewsksbury 2004; Ford & Arrastia 2008). Age is also important as younger college students have a higher rate of alcohol use (Ford & Arrastia 2008). When focusing on Greek affiliation and substance use, research suggests that members have heavier alcohol use and more drug use, such as marijuana, compared to college students who were not involved in Greek organizations (Scott-

Sheldon et al., 2008). Research also focuses on academic performance and substance use, such as alcohol, and finds that college students who abuse it develop academic failure, as well as alcohol dependence (Marlatt et al., 1998; Geisner et al., 2004). Lastly, when examining peer use and substance use, research suggests that peers have a significant influence on substance use, especially if they use it (Recovery Connection 2011). It is suggested that this is because a student is less likely to turn down a request to partake in these types of activities (drinking games, drug use, etc.) to avoid letting down their peers (Recovery Connection 2011).

PSYCHOLOGICAL DISTRESS

Psychological distress has been defined as the "unpleasant subjective states of depression and anxiety, which have both emotional and psychological manifestations" (Mirowsky & Ross 2003:8). Psychological distress is a major issue for college students (Deckro, Ballinger, Hoyt, Wilcher, Dusek, Myers, Greenberg, Rosenthal, & Benson 2002). Research indicates that nearly half of all college students have met DSM-IV criteria for having a psychiatric disorder in the past year (Blanco et al., 2008; Zullig & Divin 2012). According to Murff (2005) and Ross, Neibling, and Heckert (1999), stress can be prevalent in just about everyone but it is especially true for college students because they are still learning to adjust to college life. They also have to focus on their studies more so their social time is cut down considerably. Finally, college students have to adjust to different living arrangements such as living in a dorm or in their first apartment without their parents around. The majority of the time these students do not previously know the people they have to live with for the year.

When examining the correlates of psychological distress, studies have shown that being white increases the risk of having a psychiatric disorder in college compared to being non-white

(Blanco et al., 2008). Research also suggests that there are certain risk factors that college students face that may increase problems with their mental health state (Hunt & Eisenberg, 2010). When examining gender differences, Hunt & Eisenberg (2010) found that males were more prone to suicide but women were more prone to depression and anxiety disorders. Their research also pointed out that students who had stress associated with their relationships had a poorer mental health state as did those who did not have much social support or who had been victimized sexually (Hunt & Eisenberg, 2010). There was still a lack of literature when examining other factors that could be associated with the mental health state such as competition in the schools and how much school work each student is subjected to, which both authors pointed out.

In the study conducted by Geisner et al. (2004), they concluded that there were gender differences in the amount of alcohol consumed within the college population; men were significantly more likely to consume more alcohol when compared to women, but women showed more signs of going through psychological distress compared to men. They found a relationship between alcohol problems and psychological distress. Men had more problems with alcohol if they were exhibiting higher levels of stress (Geisner et al., 2004).

There is a common perception that college students lack sleep during those first four years, in fact Field et al (2012) focused on the relationship between lack of sleep and depression, anxiety, and intrusive thoughts. They found that "sleep disturbances and depression are highly associated with psychological and biochemical imbalances (Field et al 2006, 2012). Three of the components of psychological distress are depression, anxiety, and insomnia (Morrison & Connor 2004). Therefore, this study reiterates the fact that prolonged sleep deprivation can lead to

multiple negative outcomes such as depression and may lead to academic problems (Field et al., 2012). Not getting enough sleep can lead to "…tension, anger, depression, fatigue, and confusion; concentration and memory difficulties…" (Brown et al., 2006:231). This can potentially lead to psychological distress. As they stated, only a small percentage of college students (11%) actually get the recommended sleep they need to function every day. This is an increasing problem that directly affects college students because academic demands cause students to choose between their grades and their sleep (Brown et al., 2006). College students face stressors such as "academic overload, continual pressure to succeed, competition against peers, financial hardship, and worries about the future (Tosevski et al., 2010; Vazquez et al., 2012:219).

Research has also suggested that relationship breakups can lead to distress in students (Field et al., 2012). In their study of 283 university students, they found that breakup stress can lead to negative outcomes such as poor concentration on school, student(s) performance on tests, and their overall grades (Field et al., 2012). In a previous study, Field et al.(2009) found that "university students with high breakup distress scores also had high depression scores…" (616). With depression being a component for psychological distress, relationship status ties into how college students deal with their stressful experiences. Furthermore, research has also shown that college students may have an increased vulnerability when it comes to losing a romantic partner compared to older adults (Blanco et al., 2008).

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CHAPTER 3: RESEARCH METHODOLOGY

The data for this study came from an anonymous online survey, using Qualtrics, that examines the relationship between psychological distress and substance use among students at the University of Central Florida (UCF). Links to the survey were provided in randomly assigned classrooms throughout the campus. It was made known to all participants that each survey is completely anonymous and voluntary. IRB approval was met. The study consisted of 269 undergraduate students at UCF. Only undergraduate students were used because research suggests that they have higher levels of substance use when compared to graduate students (Cranford et al., 2008). Also, most undergraduate students have to go through the transition of being away from their hometown and are typically around the ages of 18-24.

The current research uses several measures of substance use as dependent variables. First, binge drinking was measured based on the Harvard School of Public Health College Alcohol Study. Respondents were asked the number of days in the past 30 days they consumed 4 (female respondents) or 5 (male respondents) alcoholic drinks during a single drinking occasion. Second, respondents were asked the number of days they used marijuana in the past 30 days. Finally, respondents were asked the number of days they misused prescription drugs in the past 30 days. This measure of prescription drug misuse is based on the National Survey on Drug Use and Health, which focuses on the use of prescription medications that were not prescribed or used solely for the feeling or experience caused by the drug.

The primary independent variable is psychological distress and was measured by using Kessler's Psychological Distress Scale. Also known as K10, this scale is a global measure of distress based on symptoms of anxiety and depression. Respondents were asked in the past 30

days about how often did you feel…tired out for no good reason, nervous, so nervous that nothing could calm you down, hopeless, restless or fidgety, so restless that you could not sit still, depressed, that everything was an effort, so sad that nothing could cheer you up, worthless? The response set for all ten questions is none of the time, a little of the time, some of the time, most of the time, or all of the time. Responses for all 10 items were summed to create a scale.

A number of variables were included in analytical models as controls. These include sociodemographic characteristics such as age, gender, race/ethnicity. A number of variables known to be correlated with substance use among college students are also included. Respondents are asked about their involvement in fraternities/sororities, current GPA, substance use among their friends, religious beliefs, and their current employment status.

In order to test research hypotheses several logistic regression models were estimated. First, logistic regression models were estimated for each dependent variable: binge drinking, marijuana use, and prescription drug misuse. Second, given that existing research indicates gender differences in both substance use and psychological distress, logistic regression models were estimated separately for male and female respondents.

HYPOTHESES

Respondents that have higher levels of psychological distress will be more likely to report substance use (i.e. prescription drug misuse, binge drinking, marijuana use, etc.). Also, the relationship between the two variables may be influenced by gender. The relationship between psychological distress and substance misuse is expected to be stronger for females.

CHAPTER 4: RESULTS

The total number of surveys collected was 314, but only 269 surveys were included in the analysis. This means that about 45 surveys were missing data. That is about 14% of the entire sample.

Dependent Variables. In table 1, the ranges, means and standard deviations are shown for all measures. Three dependent variables (binge drinking, prescription drug use, and marijuana use) were measured. Each of the dependent variables was recoded into dichotomous measures. The mean for binge drinking was .4913, which means that about 49% of the sample reported that they had been binge drinking in the last thirty days. The mean for prescription drug use was .1019, which means that about 10% of the sample reported that had misused prescription drugs in the last thirty days. The mean for marijuana use was .3312, which means that about 33% of the population reported that they had used marijuana in the past thirty days.

Independent Variables and Controls. The mean for psychological distress was 19.1156. This means that the average in the sample is considered to be in good well-being as opposed to having a moderate mental disorder or a severe mental disorder. However, to be considered as having a moderate mental disorder, the score has to be 20. Overall, the average in the sample came very close to this number. One study done by Stallman (2010) used the K10 scale in the analysis of college students' distress with the overall score ranging from 22-23 on the scale. Comparing the means, they are close in number.

The average age was 20 years old. The sample was 60.5% White, 37% male, and 14.6% of the sample was involved in Greek life. The average GPA was 3.23. According to the UCF 2012-2013 fact sheet, most of the undergraduate students enrolled are White (59%) and most are

female (55%). This sample has a higher percentage of females than would be expected at UCF.

On average, the sample agreed that religion played a very important part in their lives. There was

about 21.6% of the sample that indicated that they were employed. The mean for peer binge

drinking was 1.91. For peer marijuana use, the mean was 2.15. Finally, the mean for peer

prescription drug misuse was 1.39.

Table 1: Sample Characteristics (N=269)

	Range	**Mean**	**Standard Deviation**
Substance Use			
Binge Drinking	0-1	.4913	.50080
Marijuana Use	0-1	.3312	.47140
Prescription Drug Misuse	0-1	.1019	.30301
Psychological Distress			
K10	10-40	19.1156	7.22247
Controls			
Age	18-24	19.9233	1.77966
Male	0-1	.3718	.48406
White	0-1	.6051	.48961
Greek	0-1	.1465	.35417
GPA	0-4	3.2373	.55276
Religiosity	1-5	3.0033	1.38932
Work	0-1	.2166	.41256
Peer Binge Drinking	0-3	1.9118	.73466
Peer Marijuana Use	0-3	2.1579	.70458
Peer Prescription Drug Misuse	0-3	1.3940	.58244

The results of the logistic regression between binge drinking and psychological distress are shown in Table 2. The independent variable, psychological distress, was not significant in this case. The variables that were statistically significant were white, peer use, marijuana use and Greek involvement. Whites were at an increased risk for binge drinking compared to non-whites, Greeks were at an increased risk for binge drinking compared to non-Greeks, and respondents who reported more use among their peers were also at an increased risk for binge drinking. Also, respondents who reported any marijuana use were at an increased risk for binge drinking.

Models were estimated separately for males and females to see if there was a different relationship between psychological distress and substance use based on gender. In the model with male respondents only, peer use and marijuana use were significantly correlated to binge drinking. This means that those male respondents and those who reported peer use were at an increased risk for binge drinking, compared to those that did not report peer drink use. Also, respondents that reported marijuana use were at an increased risk for binge drinking, compared to those who did not report marijuana use. In the model with female respondents only, race and peer use were significantly correlated to binge drinking. This means that white female respondents were at an increased risk for binge drinking compared to non-white female respondents. Also, female respondents who reported peer use were at an increased risk for binge drinking compared to those who did not report peer use. The independent variable, psychological distress, was not significant in these separate models.

Table 2: Binge Drinking and Psychological Distress

	All	**Male**	**Female**
Psychological Distress	-.035 (.021) [.965]	-.060 (.035) [.941]	-.020 (.026) [.980]
Female	.314 (.300) [1.368]	-----	-----
Age	-.004 (.081) [.996]	-.051 (.147) [.950]	.019 (.101) [1.019]
White	**.691**** (.289) [1.996]	.836 (.531) [2.308]	**.698*** (.355) [2.010]
Greek	**.806**+ (.436) [2.240]	.727 (.935) [2.069]	.830 (.502) [2.294]
GPA	.346 (.259) [1.413]	.567 (.391) [1.762]	.195 (.352) [1.216]
Religiosity	.071 (.109) [1.074]	.044 (.207) [1.045]	.055 (.134) [1.056]
Work	-.096 (.368) [.909]	-.068 (.660) [.934]	-.100 (.453) [.905]
Peer Use	**.943***** (.220) [2.568]	**.779*** (.376) [2.179]	**1.054***** (.279) [2.868]
Prescription Drug Use	.659 (.623) [1.933]	1.168 (1.081) [3.217]	.401 (.816) [1.493]
Marijuana Use	**.984*** (.320) [2.676]	**1.610*** (.562) [5.005]	.681 (.406) [1.976]

- Three separate logistic regression models were estimate. Table includes unstandardized regression coefficient, (standard error), and [odds ratio].
- $+ p < .10$, $* p < .05$, $** p < .01$, $*** p < .001$

Table 3 shows the results of the logistic regression between marijuana use and psychological distress. The variable of interest, psychological distress, was not significant in this case. The variables that were statistically significant were peer use, prescription drug misuse and binge drinking. All three indicate that there is a positive relationship between these significant variables and marijuana use only. Respondents who reported more peers that used marijuana were at an increased risk for use. Respondents who reported prescription drug misuse or binge drinking were at an increased risk for marijuana use compared to respondents that did not report.

In the separate models estimated by gender, peer use was a significant correlate for both males and females. The more friends a person reported that used marijuana, the more likely it was for that person to use marijuana. In the model estimated for males, binge drinking was a significant correlate of marijuana use. Males who reported binge drinking were at an increased risk for marijuana use compared to males who did not report binge drinking. In the model estimated for only female respondents, prescription drug misuse was a significant correlate of marijuana use. Females who reported prescription drug misuse were at an increased risk for marijuana use compared to females who did not report prescription drug misuse. The variable of interest, psychological distress, was not significant in these models..

Table 3: Marijuana Use and Psychological Distress

	All	Male	Female
Psychological Distress	-.028 (.024) [.973]	-.006 (.043) [.994]	-.035 (.031) [.965]
Female	.268 (.344) [1.307]	-----	-----
Age	.123 (.098) [1.131]	.207 (.165) [1.230]	.091 (.125) [1.096]
White	-.219 (.355) [.804]	-.536 (.638) [.585]	-.084 (.446) [.919]
Greek	-.118 (.486) [.889]	.752 (.912) [2.121]	-.572 (.624) [.564]
GPA	-.108 (.294) [.897]	-.112 (.446) [.894]	-.244 (.417) [.784]
Religiosity	.085 (.130) [1.089]	.043 (.237) [1.044]	.105 (.171) [1.111]
Work	-.431 (.460) [.650]	-.531 (.773) [.588]	-.373 (.583) [.688]
Peer Use	**1.952*** (.306) [7.042]	**2.301*** (.565) [9.986]	**1.993*** (.400) [7.338]
Prescription Drug Use	**1.855* (.760) [6.394]	.711 (1.514) [2.036]	**2.699** (1.022) [14.859]
Binge Drinking	**.857* (.351) [2.356]	**1.917** (.672) [6.801]	.293 (.444) [1.340]

- Three separate logistic regression models were estimate. Table includes unstandardized regression coefficient, (standard error), and [odds ratio].
- $+ p < .10$, $* p < .05$, $** p < .01$, $*** p < .001$

Table 4 shows the results of the logistic regression between prescription drug misuse and psychological distress. The variables that were statistically significant in this case were psychological distress and peer misuse. Respondents with higher levels of psychological distress or those who reported more use by peers were at an increased risk for prescription drug misuse.

In the model estimated for male respondents' only, psychological distress, GPA, religiosity, and peer misuse were significantly correlated to prescription drug misuse. The higher the psychological distress score, the higher the risk for the male respondents to misuse prescription drugs. The lower the GPA, the more there was an increased risk for male respondents to misuse prescription drugs. The importance of religion in male respondents also puts them at an increased risk for prescription drug misuse. Lastly, male respondents that reported more peer misuse of prescription drugs were at an increased risk for misusing prescription drugs on their own. In the model estimated for female respondents' only, peer misuse and marijuana use were significant correlates of prescription drug misuse. This means that female respondents that reported more peer misuse of prescription drugs were at an increased risk to misuse prescription drugs on their own. Also, female respondents who reported marijuana use were at an increased risk for prescription drug misuse. The variable of interest, psychological distress, was not significant for females.

Table 4: Prescription Drug Misuse and Psychological Distress

	All	Male	Female
Psychological Distress	**.079*** (.038) [1.082]	**.126+** (.068) [1.135]	.069 (.061) [1.071]
Female	-.053 (.606) [.948]	-----	-----
Age	.034 (.163) [1.035]	-.090 (.331) [.941]	-.301 (.312) [.740]
White	.141 (.625) [1.152]	.100 (1.089) [1.105]	.177 (.942) [1.193]
Greek	.446 (.806) [1.562]	-1.738 (2.146) [.176]	.915 (1.048) [2.497]
GPA	-.491 (.459) [.612]	**-1.636+** (.899) [.195]	-.076 (..971) [.926]
Religiosity	.382 (.232) [1.465]	**1.768*** (.727) [5.858]	-.234 (.351) [.791]
Work	.191 (.830) [1.210]	1.823 (1.570) [6.193]	.276 (1.324) [1.318]
Peer Use	**1.595**** (.504) [4.929]	**3.018*** (.1.406) [20.445]	**2.441**** (.911) [11.489]
Binge Drinking	.573 (.667) [1.773]	1.966 (1.540) [7.143]	.231 (.912) [1.260]
Marijuana Use	1.297 (.690) [3.658]	-.539 (1.705) [.584]	**1.961*** (.931) [7.104]

- Three separate logistic regression models were estimate. Table includes unstandardized regression coefficient, (standard error), and [odds ratio].
- $+ p < .10$, $* p < .05$, $** p < .01$, $*** p < .001$

CHAPTER 5: DISCUSSION

In regards to the hypothesis, a positive correlation was expected between psychological distress and substance use and that this relationship would be stronger for female respondents. Examining the relationship between psychological distress and substance use is important because college represents a transitional period where both high levels of psychological distress and substance use exist. The only connection found between psychological distress and substance use was when it was involving prescription drug misuse. The gendered analysis also showed that the relationship between psychological distress and prescription drug misuse was only significant for male respondents.

The current research found no significant relationship between psychological distress and binge drinking or marijuana use. All three substances (marijuana, prescription drugs, and alcohol) inhibit the body; however, prescription drug misuse may be the most popular form because of the fact that students who use them can stay focused on their schooling. According to Nezlek et al. (1994), the majority of people who consume alcohol do so in social settings. It could be that people with higher rates of psychological distress isolate themselves from other people, and people who binge drink or use marijuana use them in social settings. This would explain why the relationship between them would not be statistically significant. Prescription drugs could be more effective for people with higher levels of psychological distress as a means to cope with their stress.

The current research highlights that peers seem to be the strongest predictors of substance use. This is also consistent with Recovery Connections' (2011) study where it was also noted that peers have a significant influence on substance use because individuals like to feel as if they

"fit in" with the group. Social learning theory states that people learn behaviors from those around them through the use of modeling and/or observing them directly (Bandura, 1977). This can be applied to the current findings because college students are constantly influenced by those around them. When many students start college, they may not have a lot of friends since they may be in an unfamiliar environment. Therefore, they observe those around them. If those around them engage in certain behaviors, such as binge drinking, the individual will eventually learn that it is acceptable. This then becomes the social norm in their environment.

The findings in the current research regarding substance use in the college population are supportive of the existing research. For example, it was found in this sample that Greeks had a higher risk of binge drinking compared to non-Greeks. It was also found that peer influence greatly increases the risk for the individual to also engage in behaviors such as binge drinking, marijuana use, and prescription drug misuse. Also, both males and females had an increased risk for marijuana use, prescription drug misuse, and binge drinking if they reported more of their peers also engaging in those activities. According to existing research, alcohol is high in the college population at 64% (Johnston et.al, 2011). In this case, it was also found that alcohol rates are high within the college setting. Research also suggests that men had higher rates of marijuana use (Johnston et.al, 2011), but in this current study it was found that both male and female college students had high rates for marijuana use. Whites only had higher rates of binge drinking' it was not significant for marijuana use or prescription drug misuse. Research suggests that among whites and non-whites, there is a higher rate for whites among substance use in general (Gledhill-Hoyt et al., 2000; Johnston et al., 2007; Mohler-Kuo et al., 2003; Mustaine & Tewsksbury 2004; Ford & Arrastia 2008). It is also suggested that age is a significant factor in

substance use and psychological distress (Ford & Arrastia 2008; Deckro, Ballinger, Hoyt, Wilcher, Dusek, Myers, Greenberg, Rosenthal, & Benson 2002), but in this study age was not considered a significant factor according to tables 2, 3, and 4. In the current research, for the dependent variable binge drinking, the significant variables were white, Greek, peer use, and marijuana use. For the dependent variable marijuana, the significant variables were peer use, prescription drug misuse, and binge drinking. For the dependent variable prescription drug misuse, the significant variables were psychological distress and peer use.

Limitations. In this study, there were 269 respondents which is a relatively small sample size out of about 59000 University of Central Florida students. A small sample size may have limited my ability to find significant relationships and make it difficult to generalize these findings to the university population. Also, only students from UCF were interviewed, therefore it does not account for students at other schools. It was also a self-report survey, meaning that participants could have easily stated that they did an activity (i.e. binge drinking) more than they actually did, they might have had problems remembering if they did so it might not have correctly gauged their true use, and/or the participant may not have realized they have a problem with substance use or psychological distress as much as others. The survey was anonymous and web-based so it should increase accuracy of respondent reporting on sensitive issues such as psychological distress and substance use.

Policy Implications. College campuses need to make sure that they have programs designed to help their students with problems related to psychological distress and substance use

and that each student has an equal opportunity to take advantage of those programs. There also needs to be more publicity around the campuses as to how to get to those programs, so that if a student does not feel comfortable enough to ask at least they know the direction to head in to get there. It would be interesting to see if there are similar results when looking at multiple college campuses in the same study.

APPENDIX A: IRB APPROVAL LETTER

Approval of Exempt Human Research

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

To: **Jason Ford** and Co-PI: **Katelynn R. Messer**

Date: **January 10, 2013**

Dear Researcher:

On 1/10/2013, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	Psychological Distress and Substance Use among College Students
Investigator:	Jason Ford
IRB Number:	SBE-12-08997
Funding Agency:	
Grant Title:	
Research ID:	n/a

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

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

Signature applied by Joanne Muratori on 01/10/2013 03:28:32 PM EST

IRB Coordinator

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APPENDIX B: SURVEY TEMPLATE

Survey Template

You are being invited to take part in a research study. Whether you take part is up to you.

· The purpose of this research is to discover if there is a relationship between psychological distress and substance use among college students. It aims to bridge the gap in the literature regarding the college population.

· The research will take place at the University of Central Florida. Participants will be asked to take part in an anonymous online survey.

· The time it should take to complete the online survey is approximately 5-7 minutes.

You must be 18 years or older to participate in this survey. Please select the answer that best answers each question.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints contact Katelynn Messer, Undergraduate Student, Sociology, College of Sciences at katelynn.messer@knights.ucf.edu, or Dr. Jason Ford PI, Department of Sociology by email at Jason.Ford@ucf.eduIRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

1. What is your current age? _____

2. What is your sex? M/F

3. What is you race/ethnicity? White, Black/African American, Pacific Islander/Asian, Hispanic/Latin, Multiracial, Native American/American Indian, or other

4. Are you a member of a fraternity or sorority? Yes or No

5. What is your current GPA? _____

6. What is your class standing? Freshman, Sophomore, Junior, Senior, or Grad student

7. Do you currently work more than 20 hours a week? Yes or No

8. (ONLY FEMALES ANSWER) During the past 30 days on how many days did you have 4 or more alcoholic drinks in a row?

9. (ONLY MALES ANSWER) During the past 30 days on how many days did you have 5 or more alcoholic drinks in a row?

10. How many of your friends binge drink? None, A few, Most or All

11. In the past 30 days, how many days did you use marijuana? _____

12. How many of your friends use marijuana? None, A few, Most or All]

13. In the past 30 days on how many days did you take prescription drugs that were not prescribed to you or solely for the experience or feeling? _____

14. How many of your friends misuse prescription drugs? None, A few, Most or All

15. Religious beliefs are a very important part of your life. (Strongly Agree, Agree, Disagree, Strongly Disagree, Neither Agree or Disagree)

16. In the past 30 days, about how often did you feel...(None of the time, A Little of the time, Some of the time, Most of the time, All of the time)
    - tired out for no good reason?
    - nervous?
    - so nervous that nothing could calm you down?
    - hopeless?
    - restless or fidgety?
    - so restless you could not sit still?
    - depressed?
    - that everything was an effort?
    - so sad that nothing could cheer you up?
    - worthless?

17. Thank you for your time!

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