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A Family Systems Approach to Substance Misuse: An Examination of Risk and Protective Factors

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A FAMILY SYSTEMS APPROACH TO SUBSTANCE MISUSE: AN EXAMINATION OF RISK AND PROTECTIVE FACTORS

by

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ABSTRACT

A FAMILY SYSTEMS APPROACH TO SUBSTANCE MISUSE IN COLLEGE STUDENTS: AN EXAMINATION OF RISK AND PROTECTIVE FACTORS

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This purpose of this project was to investigate the interrelationships between family structure, classroom stress, sense of belonging, and substance misuse in college students. Some outcomes of the study were an increased knowledge of substance misuse in college students and the impact of risk and protective factors on substance misuse. One model of family structure is the Circumplex Model of Family Systems. This model consists of three components: family cohesion, adaptability and communication (Olson, Russell, & Sprenkle, 1989). This research was conducted at Old Dominion University using 391 undergraduate college students, aged 18 - 25. It was hypothesized that students with families that are more extreme in cohesion and adaptability would have greater substance misuse and that increased satisfaction with their family would be associated with decreased substance use. Balanced families would have moderate levels of cohesion and adaptability. Classroom stress and sense of belonging were also predicted to have interrelationships with substance misuse. Gender differences in substance misuse were also examined. Specifically, males were predicted to have higher levels of substance misuse compared to females. Results showed that family cohesion was positively related to binge drinking. Family satisfaction was related positively to the substance misuse variables. The family type variable was predicted to have the least substance use at the

balanced ranges of family types. Instead, results showed that the highest substance use was associated with the more functioning family type. Gender differences were in the direction predicted, with males using significantly more alcohol or drugs than females. Also, more alcohol related problems were associated with increased substance use. Many of the family variables had a protective relationship with college stress. Also, the classroom stress variable had positive correlations with substance misuse variables. These results could be attributed to limited range in the family variables. Also, all data were collected in the weeks following spring break, which may have resulted in a unique effect for substance misuse variables.

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INTRODUCTION

The family is arguably the foundation for one's placement in today's society. It is an important structure that has future implications on the individual's disposition and behavior for many years and perhaps the span of a life. This study attempted to add to the present literature of family systems research as applied to substance misuse in undergraduate, traditional-aged college students.

College substance misuse is well documented in the literature; in particular, binge drinking is on the rise in many college students (Johnston, O'Malley, & Bachman, 2002). Alcohol and risky behavior can lead to serious consequences in young adults such as drunk driving and increased social problems (Weschler, Lee, Nelson, & Kuo, 2002). The risk of illicit drug initiation has been shown to increase from ages 12-21 in adolescents (Guo, Hill, Hawkins, Catalano & Abbott, 2002).

The theoretical framework used in this study was Family Systems theory. The Olsen Circumplex model (Olson et al., 1983) of families was used to provide the theoretical framework for this study. Family satisfaction in this model is characterized by increased bonding within the family and greater cohesion and adaptability in the family (Olson, Russell, & Sprenkle, 1989). The model is used to provide a framework for functioning in the family, focusing on cohesion and adaptability as key factors in assessing varying degrees of a family's well being.

The family is arguably the most important institution in life and challenges that the modern family faces can seem very intimidating. It is important to recognize the strengths of families that function well in today's society. A number of positive family

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The model for this thesis is the *Publication Manual of the American Psychological Association* (5th ed.).

characteristics are essential to prevent the social problems that young people will face. It is also important to investigate the impact the college environment has on the substance use of students. A sense of community in the classroom can be associated with decreased substance use (Osterman, 2000). Also, stress in the classroom environment may cause college students to engage in alcohol or other drug use (Cutchin & Morrow, 2003). It is the aim of this study to explore the interrelationships between family structure, social belonging, classroom stress, and substance misuse in college students.

Family Systems: A Theoretical Framework

There are several models from which a family systems framework can be built. Family therapy and theory date back to the 1920s, some would argue that the family movement began when humans became literate and discovered the family's importance. But practically the family movement began in the 1950s, and its development has created innumerous implications to therapists, researchers, and the general public (Bowen, 1976).

Bowen's family system approach is noted by means of pathology, as discussed by Coco and Courtney (1998). Bowen's system proposed that families are characterized on a continuum of differentiation levels. These differentiation levels determine how an individual develops their relationship with parents and other family members. The triangulation process is an outcome of a volatile two-person system under stress. This intense relationship could be among two parents and an adolescent, or a relationship among siblings and a parent. A third person is brought into the triangle as a result to reduce tension between the two-person system. This triangulation creates more stress, which may cause an adolescent to use alcohol or other drugs to decrease stress in order to increase their individualization.

Another interesting concept of Bowen's theory is the multigenerational transmission processes, which refers to family functioning over several generations. A genogram is a method of gathering information about family history as well as an intervention technique; it is a visual display of multigenerational patterns and factors determining nuclear family functioning. It is important to understand the impact that family patterns have on the life of an individual. Bowen asserts that transmission of pathology transcends generations and will affect the behavior patterns in the family (Coco & Courtney, 1998).

Olson developed a family systems model called the Circumplex Model of Marital and Family Systems. The model was designed to fill the gap between theory, research and practice (Olson et al., 1983; Olson et al., 1989). The model investigates the family's cohesion, communication and adaptability. Family cohesion is defined as emotional bonding that family members have with each other. Within this model family cohesion is measured in terms of different dimensions. These dimensions are, time, space, friends, decision-making, friends, boundaries, coalitions, interests and recreation (Brubaker, 1993; Olson et al., 1983).

The model suggests four levels of cohesion or emotional bonding. The lower levels range from disengaged (very low) to separated (low to moderate) levels of cohesion and the more moderate levels of cohesion range from connected (moderate to high), to enmeshed (very high). When there is no commitment with members of the family, members become disengaged. On the other hand, when there is too much trust and loyalty, and too little independence, the family becomes enmeshed. The central levels of cohesion separated (low to moderate cohesion) and connected (moderate to high

cohesion) provide better family functioning. The extreme ends of the cohesion levels are seen as problematic. Adolescent deviance and substance misuse could result from either of these extreme levels of cohesion (Olson et al., 1989).

The communication piece of this model is described as a facilitating function. Communication is essential for facilitating families to move on the two other dimensions of the model. Positive communication skills enable families to share their needs in respect to adaptability and cohesion. As stated in Olson and DeFrain (2000), "communication is the grease that smoothes frictions between partners and family members", (p. 108). Six dimensions are suggested for good communication skills: listening skills, speaking skills, self-disclosure, clarity, staying on topic, and respect and regard.

Adaptability is another key staple to this model; it is the ability of the family to adjust to change or stress. Four levels of adaptability are discussed: rigid, structured, flexible, and chaotic. Rigid families are very low in adaptability and usually have one person who is very controlling in the family. The structured family is less controlling and leadership is shared between the parents. The flexible family is even less rigid and leadership is more equally shared. In the chaotic family, roles are unclear, and leadership is erratic and limited. Based on the circumplex model, very low levels of adaptability (rigid) and high levels (chaotic) are problematic for the family. Like the cohesion component, moderate levels of adaptability are seen as more desirable for greater functioning (Brubaker, 1993; Olson et al., 1989).

Olson and Killorin (as cited in Olson et al., 1989) examined differences in chemically dependent families and nondependent families. As hypothesized, alcoholic

families had higher levels of extreme families than did the nondependent families. In fact, 20% of the chemically dependent families were extreme types, while only 4% of nondependent families were extreme types. Also, about two-thirds of nondependent families were balanced, and only one-third of dependent families were balanced. Low levels of family cohesion are characteristic of families affected by alcoholism. A family member's alcohol use may create "perverse triangles" among members of the family. This can promote distance, disengagement, and scapegoating in families as found by Haley (1977);and Minuchin (1974) (as cited in Rotunda, Scherer, & Imm, 1995). It is important to look at family cohesion and the implications for families and individuals affected by substance misuse.

Family Factors and Substance Misuse

Family factors have been examined by several researchers for possible interactions with substance usage in adolescents and young adults. Factors that are empirically related to substance use are parental substance use, love withdrawal (Anderson & Henry, 1994), and low parental monitoring and no communal mealtimes (Griffin et al., 2000). Anderson and Henry (1994) also found that family communication, flexibility, bonding, and support have a buffering effect on substance use.

Other researchers have examined family conflict in relation to substance use. Adolescents with greater family cohesion and a higher achievement orientation showed fewer symptoms of drug abuse and alcohol dependence (Gabel et al., 1998) Consequently, individuals with increased conflict had more severe substance related problems. Fischer and colleagues (2000) compared the family dysfunction of adult

children of alcoholics and adult children of dysfunctional families. They found that individuals from dysfunctional families showed predictably higher levels of adult stress.

In a study of fraternity and sorority members (Turner et al., 2000), higher levels of parent-child conflict were significantly related to the consequences of alcohol abuse. Parent-child conflict also appeared to predict depression and global distress in Greek members. The researchers also found that alcohol related consequences were more pronounced among females than males. These students were shown to have greater numbers of drinks per week than the general college population.

Family satisfaction is an area in family research that has not been explored exhaustively, especially in applications with substance misuse. An important finding presented by Olson (1983) is that family satisfaction has significant negative correlations with stress, which indicates a protective effect for family satisfaction on stress. Families with high satisfaction also were high on other positive family variables such as family strengths and resources (i.e., pride and accord). Bonk's study (1984) (as cited in Olson et al., 1989) families were assessed before and after treatment. While no changes in adaptability and cohesion were discovered, family satisfaction was significantly higher at posttest.

Substance Misuse in College Students

A major area of focus in substance use research among college students has been related to binge drinking. This style of drinking is often associated with seriously harmful behaviors such as risky sexual behavior, drunk driving, academic difficulties, and social problems (Wechsler et al., 2002). According to the Monitoring the Future National Survey of College Students (Johnston, O'Malley, & Bachman, 2002), binge drinking in

college students has an annual prevalence of 41%. The same study defined binge drinking as five successive drinks for men and four successive drinks for women. The study reported binge-drinking rates of 24% for women and 36% for men in 2001.

In the National Household Survey on Drug Abuse (NHDA) Report (2003) of alcohol use by persons under the legal drinking age of 21, nearly one in five persons aged 12 to 20 were participants in binge alcohol use. They also reported that male underage drinking is more prevalent than the female drinking rate. Caucasian individuals also had a larger rate of drinking and binge drinking than any other racial group. In 2001, nearly 3 million people ages 16 to 20 were estimated to have driven under the influence of alcohol at least once in the past year.

Also of interest regarding substance abuse is the current rise in Ecstasy (MDMA) use among the college population. In 1999, approximately five percent of students surveyed said that they had used ecstasy in the past year; this rate had increased 69% from the two years previous to the study (Johnston et al., 2002; Strote, Lee & Wechsler, 2002). This rate has also increased significantly in the past year to 9.2%, although at a slower rate than the two years previous.

Drugs that are increasing in yearly prevalence are hallucinogens (5.5%), amphetamines (7.2%), marijuana (35.6%), and binge drinking (41%). Drugs that appear to be decreasing in yearly prevalence are cocaine (8.6%), heroin (.4%), and cigarette usage (15%) (Johnston et al., 2002). With the rising concern regarding college drug use many researchers have looked at various predictors of substance use such as peer influence, family structure, family systems, and other social variables.

The 2002 National Survey on Drug Use and Health: National Findings (NSDUH) found that youth who had positive attitudes about high school were less likely to use substances. Those who reported that they liked school had a 9.3 percentage of illicit drug use. Of those who said that they hated school, 20.8 percent used an illicit drug in the past month. In the same survey, students' alcohol use increased with their level of education. Of those with a less than a high school education, 37.8 percent were current drinkers, while 67.4 percent of college graduates were drinkers. Among college-aged students, 26.6 percent reported that they drove under the influence of alcohol at least once that year (NSDUH, 2003).

The NSDUH also reported that young adults ages 18-22 enrolled full time in college were more likely to be drinkers, binge drinkers, or heavy drinkers in 2002. Full time students older than 26 were less likely to drink heavily than individuals who had not attended college. In respect to mental health, adults who had used illicit drugs were more than twice as likely than nonusers to have developed a serious mental illness. Of adults who had used an illicit drug, 17.7 percent had a serious mental illness that same year, 6.9 percent of nonusers had a mental health problem.

In an alcohol alert newsletter of the National Institute of Alcohol Abuse and Alcoholism (NIAAA) in October 2002, drinking on college campuses and its consequences were highlighted. Thirty-one percent of the students surveyed reported symptoms associated with alcohol abuse. These symptoms ranged from drinking in unsafe conditions to alcohol-related school problems. Also, six percent of the students reported three or more symptoms of alcohol dependence. As is widely known, most students' use will decrease significantly after college, but this may not be the case for all.

It is important to understand these trends on college campuses in order to design more effective prevention approaches.

Gender Differences in Substance Misuse

Most research finds that males are most likely to use the more illicit drugs as compared to females (Johnston et al., 2003); these differences also increase with larger frequency levels. In college students, daily marijuana use in 2002 was 5.7% for males and 3.0% for females. In eighth and tenth grade samples of students, gender differences are smaller and fewer. In regards to the prevalence of occasional heavy drinking, 33% of females were heavy drinkers, 51% of males were heavy drinkers.

Kahler, Read, Wood, and Palfai (2003) found that males had increased alcohol use over women, but did not seek out alcohol-conducive environments more than women. Men tend to consume greater amounts of alcohol when they drink, but have similar subjective effects as compared to women. These findings may suggest that men use more than women to get a "high" effect which could be a function of body mass.

In a NIAAA Alcohol Alert report in 1999, women were more likely to be victims of sexual victimization with increased alcohol use. Also, women were also more likely to be victims of dating violence. In the same report, men were found to be more likely to drive drunk, but women were more likely to have alcohol-related fatalities at similar blood level concentrations. The report suggests that women may differ in the way that they perform on driving performance task under the influence.

An interesting finding from the NSDUH 2002 survey was that the rates of nonmedical psychotherapeutic drug use were similar for males (2.7 percent) and females (2.6 percent). As a whole, illicit drug use was higher for men than women (10.3 vs. 6.4

percent). Males (12.8 percent) were also found to have a greater chance to be classified with substance use or dependence compared to females (6.1 percent).

Sense of Belonging and Classroom Stress

Social support can be measured by various criteria; in this study social belonging is measured by means of perceived social support in the classroom. Researchers on social belonging consistently agree that students who experience more acceptance are more motivated and committed to learning and school. Also researchers have found, that classroom conditions influence students' perception of themselves (Osterman, 2000). A study by Battistich and Hom (1997) showed that sense of community in school was negatively associated with drug use and delinquency within schools.

In a study by Kenny and colleagues (2003), urban high school students perceived social support was shown to be significant in predicting more positive attitudes about the value of school and their fit in their school environment. These students were more likely to do homework, pay attention in class, and go to class. In a study of international students, social support had a direct and mediating effect on life stress and academic stress. For these students, the largest sources of stress were from changes, delays, lack of resources, failure to achieve goals and feeling like social outcasts. The biggest buffering social factors were contact with one's own culture and working with others at the international center (Misra, Crist, & Burant, 2003).

In a paper presentation by Cutchin and Morrow (2003), substance misuse, sense of belonging, and social support were examined in a college sample. An important finding from this study was that perceived faculty support was a protective factor for prescription drug use, and alcohol use variables. This study showed the importance of the

classroom environment in regards to substance misuse of college students. There is scant research in the area of classroom environment and substance misuse. More research is needed in this area in order to fully understand these interrelationships.

Deficiencies in the Literature

The body of research on college students and substance misuse is very extensive and thorough. Family systems theory also has quite a large number of studies that apply different models to various factors. Although, there is some research in the area of substance use and family systems, the circulplex model of family functioning is still a relatively young model for the explanation of family behavior. Family satisfaction is often times an overlooked construct in family systems research. Family satisfaction is also not always applied to substance misuse. Gender differences in substance use are well known in the area of substance misuse but have not been explored extensively in the family systems framework. Sense of belonging and classroom stress are not well examined in the substance misuse literature.

Purpose of the Study

This study investigated the family variables of adaptability, cohesion, communication, and family satisfaction, as they relate to substance misuse in college students. This study also tested to see if sense of belonging and classroom stress act as mediators between family factors and substance misuse. It is also the aim of the study to add to the literature on the applications of the circumplex model of marital and family systems for college students.

Major Hypotheses

Along with understanding the demographics of substance users in the Old Dominion University Population, relationships between various variables will be examined.

Hypothesis 1: It is expected that family adaptability and family cohesion would have a negative relationship with substance use (alcohol, cocaine, heroin, hallucinogens, ecstasy, MDMA, sextasy, GHB, Rohypnol, Ketamine, prescription drugs that are not prescribed, and other drugs) and alcohol related problems.

Hypothesis 2: It is hypothesized that those who are categorized as members of a Balanced Family (i.e., high family adaptability, high cohesion) would report the lowest levels of substance use and alcohol related problems compared to those students who are categorized as members of Moderately Balanced, Middle-Range, and Extreme Families.

Hypothesis 3: High levels of family satisfaction would be related to low levels of substance misuse and alcohol related problems. Higher levels of family communication would be related to low levels of substance misuse and alcohol related problems.

Hypothesis 4: Males would have a greater frequency and volume of substance use than females. Males would also have more alcohol related problems compared to females.

Hypothesis 5: Sense of Belonging and classroom stress would mediate the relationship between family environment and substance misuse.

Hypothesis 6: Higher levels of substance misuse would be related to higher levels of alcohol related problems.

METHOD

Participants

For this study, a total of 391 undergraduate students, ages 18 – 25, from Old Dominion University were recruited for the study. The sample contained 75.7% Females and 24.3% Males. There were 32.7% Freshman, 20.7% Sophmores, 25.1% Juniors, and 21.5% Seniors. Ethnically, the sample contained 0.5% Alaskan Native or Native American, 6.6% Asian-American, 28.6% Black or African-American, 56.3% Caucasian, 6.6% Hispanic, 6.6% Other. Also, 30.9% of students lived in a residence hall/dorm/or on campus apartment, 35.0% lived in an apartment/house/condo not on campus, and 34.0% lived with parents. Refer to table 1 for additional information.

While growing up 69.3% of students lived with mother and father, 15.9% lived with their mother, 0.8% of students lived with their father, 6.6% lived with mother and step-father, 0.8% lived with father and step-mother, 1.0% lived with grandparents, and 5.4% of students lived with other people while growing up. Refer to Table 1 for additional demographics information. The participants responded to an announcement posted on the Psychology Experiments Bulletin Board. Guidelines of the College of Sciences Human Subjects Committee at this University and the APA ethical guidelines (2002) were followed in the study.

Table 1

Demographic Characteristics of Participants (N = 391)

Characteristic	*n*	*%*
Ethnicity		
African American	112	28.6
Alaskan or Native American	2	0.5
Hispanic	26	6.6
Other	26	6.6
White	220	56.3
Class		
Freshman	128	32.7
Sophomore	81	20.7
Junior	98	25.1
Senior	84	21.5
Gender		
Female	296	75.7
Male	95	24.3
Drinking Status		
Life-Long non-drinker	64	16.4
Former Drinker	14	3.6
Infrequent Drinker	24	6.1
Occasional Drinker	119	30.4
Regular Drinker	77	19.7
Frequent Drinker	93	23.8
Living Arrangement		
Mother and Father	271	69.3
Mother	62	15.9
Father	3	0.8
Mother and Stepfather	26	6.6
Father and Stepmother	3	0.8
Grandparents	4	1.0
Other	21	5.4
Residence		
Residence Hall/Dorm	121	30.9
Apartment, house, condo	137	35.0
Live with Parents	133	34.0

Procedure

Participants were asked to complete an online survey (Appendix C). Convenience sampling was used to obtain the sample for the study. A participant recruitment flyer (Appendix A) was located on the Psychology Department Experiment Board in the Mills Godwin Building, on the first floor. Students went to the Research Participant Administrator's (RPA) office (MGB 134E) and picked up an information sheet (Appendix B). The survey was administered online using an online survey hosting website (Psychdata.net). Students filled out the survey online anonymously. The participants read a brief letter (Appendix B) online before they took the survey. The students put their name and contact information in a separate database if they wished to receive research credit. The participants entered their contact information into a separate database so that they cannot be linked to their responses.

Measures

The questionnaire contained various surveys that assess students' family environment, sense of belonging, classroom stress, and substance misuse.

Family Adaptability and Cohesion. This section is a thirty-item scale developed by Olson, Protner, and Bell (1982), that contains 16 cohesion items and 14 adaptability items. The original scale of 90 items was first normed on adults with an average of 30.5. There are two items for the following eight concepts related to the cohesion dimension: emotional bonding, family boundaries, coalitions, time space, friends, decision-making, and interests and recreation. Participants choices were from a) almost never, b) once in awhile, c) sometimes, d) frequently, and e) almost always. There are two or three items for the six concepts related to the adaptability dimensions: assertiveness, leadership,

discipline, negotiations, roles, and rules. A sample question for family cohesion would be, "Family members share interests and hobbies with each other." A sample question for adaptability was, "In our family, it is easy for everyone to express his/her opinion."

Scores for these two scales are combined in order to classify participants as coming from one of four family types: Balanced Family, Moderately Balanced Family, Middle-Range Family, and Extreme Family. There was very good evidence for face validity and content validity in this scale. Correlations between cohesion and adaptability were very high in this study r= .70. The internal consistency for cohesion is .87 and .78 for adaptability. The entire scale has an internal consistency of .90. The test-retest reliability is .83 for cohesion and .80 for adaptability (Olson et al., 1992). The current Crronbach's alpha for the entire scale is .80, the cohesion subscale has a reliability of .52, and the adaptability subscale has a reliability of .77.

Family Satisfaction. This 14-item scale was created by Olson and Wilson to assess the satisfaction with the family's cohesion and adaptability (Olson et al., 1992). This scale is made up of two subscales adaptability and cohesion. A question for cohesion would be, "How satisfied do you feel to the rest of your family." A question for adaptability was, "How satisfied are you with the way you talk together to solve family problems." Participants rated themselves a) Dissatisfied, b) Somewhat dissatisfied, c) Generally satisfied, d) very satisfied, and e) extremely satisfied.. Test-retest pearson correlation for this scale is .75. The scale has an alpha of .90 (Olson et al., 1992). The current reliability for the entire scale is .93, the cohesion subscale has an alpha of .86. The adaptability subscale has an alpha of .88

Family Communication. The family communication scale (Olson et al., 1992) is a 20-item scale that describes parent-adolescent communication in a variety of families. The scale contains two identical father and mother scales to measure communication. A sample question would be, " My mother is a good listener." Participants response choices are a) strongly disagree, b) moderately disagree, c) neither disagree or agree, d) moderately agree, and e) strongly agree. The scale contains two factors: open communication, and problems in family communication. The reliabilities are .87 for open family communication and .78 for problems in family communication. The overall scale had a total reliability of .87 (Olson et al., 1992). The mother open communication scale had a reliability of .94, the father open communication scale had a reliability of .94, and the overall scale had a reliability of .63.

Alcohol related behaviors. This is a 23-item scale derived from the Young Adult Alcohol Problems Screening Test- YAAPST (Hurlbert & Sher, 1992). The original version contained 27 items and assessed problems participants experienced when they drank alcoholic beverages. Sample questions include, " As a result of drinking alcoholic beverages, I engaged in sexual activity, I felt bad about my self, and I drove a car when I knew that I had too much to drink to drive safely." The participants will have a choice between a) never, b) yes, but not in the past year, c) 1-2 times in the past year, d) 3-5 times in the past year, e) 6-9 times in the past year, or f) 10 or more times in the past year. An internal consistency of .83 was found in the original scale (Hurbut & Sher, 1992). A study by Cutchin and Morrow (2003), found that the reliability for the 23-item scale to be .92. The current Chronbach's alpha for this scale is .92.

Substance Misuse. This section contains 8 questions on respondents' alcohol and tobacco usage and 7 questions on respondents hard drug use. The questions for this part of the study were consistent with Wood and colleagues (2001) (as cited in Read, Wood, Kahler, Maddock, & Palifai 2003). The participant's alcohol frequency and quantity was obtained and then multiplied to produce an alcohol frequency and quantity variable. A sample question would be, " How many drinks to you have on a typical day during the school year when you are drinking? The drug questions began with the general statement, "For the following questions how often within the past year have you used the following substances." Participants choose from a) did not use b) 1-2 times c) 3-5 times d) 6-9 times or e) 10 or more times. The substances that are asked about include, cocaine, heroin, hallucinogens, ecstasy, MDMA, sextasy, GHB, Rohypnol, Ketamine (Special K), prescription drugs that are not prescribed, and other drugs.

Sense of Belonging. This scale measures student's quality of peer/faculty relationships and sense of comfort/isolation in the classroom. The scale contains four subscales: (1) perceived peer support, (2) perceived classroom comfort, (3) perceived isolation, (4) perceived faculty support. Respondents have a choice from a) completely untrue, b) mostly untrue, c) equally true and untrue, d) mostly true, or e) completely true. The internal consistency of the entire scale in a previous study was .91 (Hoffman, Richmond, Morrow, & Solomone, 2003). A study by Cutchin and Morrow (2003), found that the reliability for perceived faculty support was .82, perceived isolation .94, perceived classroom comfort .88, and perceived peer support .76. Current reliability for this entire scale is .82. The reliability for perceived peer support is .91, .94 for perceived

classroom comfort, .84 for perceived isolation, .86 for faculty support, and .90 for totalsense of belonging.

College Stress. This subscale is part of a larger scale (College Classroom Environment Scale; Morrow & Cutchin, 2004) that examines stressors in the college environment. The college stress subscale consists of 16 questions which are rated on a 7-point scale: a) strongly disagree, b) moderately disagree, c) slightly disagree, d) neither agree nor disagree, e) slightly agree, f) moderately agree and g) strongly agree. Sample questions include, "I get stressed because I never have enough time to study", and "Pleasing my parents/significant other stresses me out". Currently, there is validity information. The current Cronbach's alpha for this scale is .90.

Demographics. This section contained questions on the participants' background information. Questions such as gender, age, class, socio-economic status, ethnicity, and GPA of the participant were asked.

Proposed Analyses

Before performing any inferential statistics, descriptive statistics were performed to assess normality of variables. These descriptives would show any outliers, missing data, or errors in coding. If there are any outliers, proper steps were taken to make sure that they are either transformed to become less deviant or are deleted. Non-normal variables were transformed in order to make them closer to a normal distribution. All of the assumptions of multiple regression and bivarate correlations were assessed before analyses were run.

In addition to absence of outliers in multiple regression there must be absence of mulitcollinearity and singularity. In addition to this normality, linearity or curvilinear

relationships, and homoscadasticity of residuals will need to be addressed. Lastly, in multiple regression it is essential to have independence of errors.

To address hypothesis one, bivariate correlations were completed to determine potential relationship of the family cohesion and family adaptability variables with the substance misuse variables.

To address hypothesis two, a series of univariate analyses of variance (ANOVA) were performed using Family Type (Balanced, Moderately Balanced, Middle-Range, Extreme) as the independent variable and the substance use variables as the dependent variables. Post-hoc Tukey HSD tests were performed for significant ANOVAs.

To address hypothesis three, bivariate correlations were calculated between family satisfaction, family communication, and the substance use variables. Correlations between family satisfaction, family communication, and alcohol related problems were also performed.

To address hypothesis four, one-way ANOVAs were completed using gender as an independent variable and the substance use variables as dependent variables.

To address hypothesis five, bivariate correlations were performed between the family environment variables, sense of belonging variables, classroom stress variables, and substance misuse variables. Variables that were significantly correlated were placed in a series of multiple regressions in order to assess if sense of belonging and classroom stress mediate the relationship between family environment and substance misuse.

Lastly, to assess hypothesis six, bivariate correlations were performed with alcohol related problems and the substance use variables.

RESULTS

Descriptive statistics were calculated to assess normality among the variables. All substance misuse variables were highly non-normal, but were not transformed. Transforming these variables would take away important variance in the results. The hard drug variables were especially kurtotic, but these variables have low usage rates in college populations. The hard drug variables were also skewed upon examination. Variables with missing values (<5%) were replaced with the group mean. Table 2 provides additional data on variable means, standard deviations, skewness, and kurtosis.

Substance Misuse Rates

In this sample, students reported that 16.4% were life-long non-drinkers, 3.6% former drinkers, 6.1% were infrequent drinkers, 30.4% were occasional drinkers, 19.7% were regular drinkers, and 23.8% were frequent drinkers. Students' alcohol related behaviors (M=.80, SD= .79) were generally low. Participants also listed their alcohol frequency (how many days) multiplied by quantity (how many drinks on a typical day) (M= 4.39, SD= 7.30). Another alcohol variable was the highest number of drinks in the past 30 days (M= 4.30, SD=5.03). Please refer to Table 3. Students hard drug use was generally very low in this sample percentages can be seen in Table 4.

Hypothesis 1

For hypothesis one, bivariate correlations were completed on family adaptability and family cohesion. These variables were predicted to have a negative relationship with the substance misuse variables (alcohol, cocaine, heroin, hallucinogens, ecstasy, MDMA, sextasy, GHB, Rohypnol, Ketamine, prescription drugs not prescribed, diet pills, methamphetamines, and other drugs) and alcohol related problems. All of these

Table 2

Mean Statistics, Standard Deviations, Skewness, and Kurtosis

	N	Mean	Std. Dev.	Skewness	Kurtosis
Family Cohesion	381	52.0	11.10	-.46	.07
Family Adaptability	369	33.91	8.58	-.39	.38
Family Satisfaction	391	46.45	11.33	.03	-.22
Mother Communication	337	69.86	16.91	-.43	-.51
Father Communication	303	66.06	16.95	-.18	-.44
Peer Support	378	3.34	1.00	-.33	-.58
Classroom Comfort	378	3.35	1.17	-.47	-.67
Peer Isolation	378	3.00	.98	.06	-.60
Faculty Support	373	3.37	2.92	-.42	1.33
Classroom Stress	391	73.64	17.95	-.45	.11

Table 3

Mean Statistics, Standard Deviations, Skewness, and Kurtosis

	N	Mean	Std. Dev.	Skewness	Kurtosis
Alcfreq* Quanitity	391	4.30	7.30	2.81	9.57
30 Days Highest # of Drinks	391	4.30	5.03	1.39	1.15
Tobacco	391	1.16	2.07	1.54	.74
Cocaine	391	.06	.30	5.46	30.15
Heroin	391	.01	.15	12.38	156.36
Meth	391	.03	.26	7.00	48.81
Hallucinogens	391	.08	.35	4.55	20.34
Ecstasy	391	.06	.30	5.24	28.20
GHB	391	.03	.22	8.70	74.14
Presciption Drug	391	.21	.53	2.54	5.31
Diet Pill	391	.47	1.12	2.45	4.69
Other Drugs	391	.65	1.26	1.89	2.16
Marijuana	391	.50	.96	1.86	2.25
Total Alcohol Related Behaviors	359	.80	.79	1.24	1.25

Table 4

Percentages of Hard Drug Use in the Past Year N = 391

	Did not use	1-2 times	3-5 times	6-9 times	10 or more
Cocaine	95.1	3.1	1.3	0.3	0.3
Heroin	98.2	1.3	.03	0.3	0.3
Meth	96.9	1.6	0.5	0.3	0.8
Hallucinogens	93.4	4.1	1.8	0.0	0.8
Ecstasy	93.9	4.6	1.0	0.3	0.3
GHB, Rohyphnol, Ketamine	96.9	1.8	2.3	0.0	0.8
Prescription Drugs	84.7	9.5	2.3	1.3	2.3
Diet Pills	78.8	9.9	2.6	1.5	7.2
Other Drugs	71.6	12.3	4.3	2.0	9.7

correlations were not significant. All correlations between these the substance misuse variables, family cohesion, and family adaptability can be seen in Table 5.

Hypothesis 2

A series of univariate analyses of variance (ANOVA) were performed using Family Type (Balanced, Moderately Balanced, Middle-Ranged, Extreme) as the independent variable and the substance misuse variables as the dependent variables. Participants could only be collapsed into two categories: middle-ranged and extreme. Only these two groups were compared on the set of dependent variables. There were no participants in the balanced group and a small number in the moderately balanced group.

The test for family type and the last thirty days highest number of drinks was significant $F(1,385)= 5.97, p< .05$, partial $\eta^2= .01$, power= .68, with individuals in the extreme group ($M= 3.50$) using significantly less than those in the middle range group ($M= 4.81$). The overall test for family type and alcohol quantity/frequency was significant $F(1,385)= 5.39, p<.05$, partial $\eta^2= .01$, power= 64. This test indicated that participants in the middle range group ($M= 4.92$) drank significantly more than those in the extreme group ($M= 3.23$). All other ANOVAs were not significant for the other substance misuse variables and the family type variable. See Tables 5 and 6 for all ANOVA results.

Hypothesis 3

Bivariate correlations were preformed between family satisfaction, family communication, substance misuse and alcohol related problems. These family variables were all predicted to have a negative (protective) relationship with substance misuse. Only significant correlations will be reported, all correlations between these variables can be seen in Table 7 and Table 8. There were many significant correlations for the family satisfaction variables. Total family satisfaction was significantly positively correlated with the highest numbers of drinks that the participant had in the last thirty days $r(391)= .13, r^2= .02, p<.05$. Family adaptability (satisfaction scale) was significantly positively related to the highest number of drinks the students had in the last thirty days $r(391)= .10, r^2= .01, p<.05$. Family cohesion (satisfaction scale) was significantly positively related to the highest number of drinks in the past thirty days $r(391)= .13, r^2= .02, p<.01$. Correlations for family satisfaction can be seen in Table 7 and Table 8.

Table 5

ANOVA Means for Substance Variables and Family Type (N=385)

SOURCE		*N*	*Mean*	*Std. Dev.*
Cocaine	Mid-ranged	199	.05	.30
	Extreme	188	.04	.24
Heroin	Mid-ranged	199	.00	.01
	Extreme	188	.02	.16
Methamphetamines	Mid-ranged	199	.02	.29
	Extreme	188	.07	.43
Hallucinogens	Mid-ranged	199	.09	.36
	Extreme	188	.09	.47
Ecstasy	Mid-ranged	199	.07	.38
	Extreme	188	.06	.28
GHB	Mid-ranged	199	.04	.40
	Extreme	188	.03	.22
Prescription Drugs	Mid-ranged	199	.25	.71
	Extreme	188	.29	.83
Diet Pills	Mid-ranged	199	.58	1.25
	Extreme.	188	.43	1.04
Other Drugs	Mid-ranged	199	.67	1.27
	Extreme	188	.75	1.33
Marijuana	Mid-ranged	199	.58	1.19
	Extreme	188	.61	1.32
Tobacco	Mid-ranged	199	1.15	2.09
	Extreme	188	1.10	2.06
Last Thirty Days	Mid-ranged	199	4.81	5.99
	Extreme	188	3.50	4.38
Alcohol Freq* Quantity	Mid-ranged	199	4.92	8.51
	Extreme	188	3.23	5.32

Table 6

One- Way Analyses of Variance for Effects of Family Type on Substance Variables (N=385)

SOURCE	*df*	*F*	η^2
Cocaine	1	.40	.00
Heroin	1	1.92	.01
Methamphetamines	1	1.43	.01
Hallucinogens	1	.00	.00
Ecstasy	1	.01	.00
GHB	1	.17	.00
Prescription Drugs	1	.27	.00
Diet Pills	1	1.62	.01
Other Drugs	1	.19	.00
Marijuana	1	.05	.00
Tobacco	1	.06	.00
Alcohol Freq* Quantity	1	5.39*	.01
Last 30 Days # Drinks	1	5.97*	.01

*Note. Significance *p<.05, **p<.01, ***p<.001, n.s. = non significant.*

Table 7

Correlations Among Hard Drug Variables, Alcohol Related Behaviors, and Family Variables N=391

	ARB	*C*	*H*	*M*	*HL*	*XTC*	*GHB*	*PD*	*DP*	OD	THD
ARB	1.0										
Cocaine	.24 ***	1.0									
Heroin	.07 n.s.	.50 ***	1.0								
Meth	.18 ***	.51 ***	.58 ***	1.0							
Hallucinogens	.21 ***	.71 ***	.42 ***	.65 ***	1.0						
Ecstasy	.12 **	53 ***	.51 ***	.57 ***	.47 ***	1.0					
GHB	.30 ***	.39 ***	.64 ***	.64 ***	.39 ***	.62 ***	1.0				
Prescription Drugs	.20 ***	.41 ***	.24 ***	.47 ***	.45 ***	.23 ***	.24 ***	1.0			
Diet Pills	.35 ***	.15 ***	.15 **	.08 n.s.	.08 n.s.	.12 *	.10 *	.31 ***	1.0		
Other Drugs	.51 ***	.25 ***	.09 n.s.	.23 ***	.33 ***	.11 *	.08 n.s.	.46 ***	.18 ***	1.0	
Total Hard Drug Use	.31 ***	.69 ***	.60 ***	.72 ***	.69 ***	.62 ***	.61 ***	.69 ***	.60 ***	.37 ***	1.0
FACES	.05 n.s.	.03 n.s.	-.07 n.s.	-.02 n.s.	-.01 n.s.	.01 n.s.	.02 n.s.	-.04 n.s.	-.02 n.s.	-.05 n.s.	-.04 n.s.
Family Satisfaction	-.02 n.s.	-.01 n.s.	-.06 n.s.	-.05 n.s.	.01 n.s.	.02 n.s.	.00 n.s.	-.07 n.s.	-.05 n.s.	-.03 n.s.	-.05 n.s.
Mother Communication	.09 n.s.	.03 n.s.	-.06 n.s.	-.04 n.s.	.03 n.s.	.01 n.s.	-.01 n.s.	-.04 n.s.	-.01 n.s.	.01 n.s.	-.03 n.s.
Father Communication	.06 n.s.	-.07 n.s.	.01 n.s.	.07 n.s.	-.08 n.s.	.02 n.s.	.01 n.s.	.07 n.s.	-.06 n.s.	.01 n.s.	-.03 n.s.

*Note. Significance *p<.05, **p<.01, ***p<.001, n.s. = non significant.*

Table 8

Correlations Among Substance Variables and Family Variables N = 391

	P	*T*	*30*	*AFQ*	*FC*	*FS*	*MC*	*FCM*
Pot Use	1.0							
Tobacco	.36 ***	1.0						
Last 30 Days	.63 ***	.35 ***	1.0					
Alcohol Quantity*Freq	.24 ***	.41 ***	.70 ***	1.0				
FACES	-.05 n.s.	-.03 n.s.	.05 n.s.	.05 n.s.	1.0			
Family Satisfaction	-.03 n.s.	.03 n.s.	.13 **	.14 **	.71 ***	1.0		
Mother Communication	.04 n.s.	.04 n.s.	.08 n.s.	.86 n.s.	.62 ***	.61 ***	1.0	
Father Communication	.08 n.s.	-.03 n.s.	.06 n.s.	.11 *	.56 ***	.59 ***	.31 ***	1.0

*Note. Significant *p<.05, **p<.01, ***p<.001, n.s. = non significant.*

The family communication variables were separated into a mother and father composite score for total open communication. Open father communication was positively related to the participant's alcohol quantity/frequency $r(325) = .11$, $r^2 = .01$, $p < .05$. All other correlations among communication variables and substance misuse variables were not significant.

Hypothesis 4

For this hypothesis, gender was computed as the independent variable and the substance misuse variables as the dependent variables in a series of one-way ANOVAs. The test for gender and the last 30 days highest number of drinks was significant

$F(1,389)= 54.42$, $p<.001$, partial $\eta^2= .12$, power= 1.00, with females ($M= 3.32$) having fewer drinks in the last 30 days than males ($M=7.66$).

The overall test for gender and heroin was significant $F(1,389)= 4.98$, $p<.05$, partial $\eta^2= .01$, power= .61; with significantly more males ($M=.11$) using than females ($M=.05$). The overall test for gender and the participant's alcohol quantity/frequency was significant $F(1,389)= 28.15$, $p<.001$, partial $\eta^2= .07$, power= 1.00; significantly more males ($M=7.64$) drinking in greater quantity and frequency than females ($M=3.23$). All other ANOVAs were not significant (cocaine, methamphetamines, hallucinogens, ecstasy, ghb/ketamine, prescription drugs, diet pills, tobacco, marijuana, and other drugs). All means can be seen in Table 9, ANOVA results can be seen in Table 10.

Table 9

ANOVA Means for Substance Variables and Sex (N=391)

SOURCE		*N*	*Mean*	*Std. Dev.*
Cocaine	Female	296	.10	.46
	Male	95	.10	.33
Heroin	Female	296	.10	.36
	Male	95	.11	.10
Methamphetamines	Female	296	.11	.61
	Male	95	.11	.33
Hallucinogens	Female	296	.12	.56
	Male	95	.15	.43
Ecstasy	Female	296	.11	.55
	Male	95	.11	.27
GHB	Female	296	.10	.61
	Male	95	.11	.26
Prescription Drugs	Female	296	.25	.80
	Male	95	.30	.76
Diet Pills	Female	296	.46	1.20
	Male	95	.54	1.09
Other Drugs	Female	296	.63	1.33
	Male	95	.74	1.22
Marijuana	Female	296	.64	.93
	Male	95	.48	1.36
Tobacco	Female	296	1.14	2.11
	Male	95	1.23	2.06
Last Thirty Days	Female	296	7.66	7.38
	Male	95	3.32	3.94
Alcohol Freq* Quantity	Female	296	7.64	10.53
	Male	95	3.22	5.50

Table 10

One- Way Analyses of Variance for Effects of Sex on Substance Variables (N=391)

SOURCE	*df*	*F*	η^2
Cocaine	1	.37	.00
Heroin	1	4.98*	.02
Methamphetamines	1	1.81	.01
Hallucinogens	1	1.57	.01
Ecstasy	1	1.28	.01
GHB	1	3.79	.01
Prescription Drugs	1	.26	.00
Diet Pills	1	.37	.00
Other Drugs	1	.54	.00
Marijuana	1	1.06	.00
Tobacco	1	.13	.00
Alcohol Freq* Quantity	1	28.15***	.07
Last 30 Days # Drinks	1	54.41***	.12

*Note. Significant *p<.05, **p<.01, ***p<.001, n.s. = non significant.*

Hypothesis 5

For this hypothesis bivariate correlations were performed between the family environment, sense of belonging, classroom stress and substance misuse variables. Classroom stress was related to many of the variables, only significant correlations will be discussed. Classroom stress was significantly negatively related to mother/adolescent open communication $r(360)= -.14$, $r^2= .02$, $p<.01$, total cohesion and adaptability $r(391)= -.19$, $r^2= .04$, $p<.01$, $p<.05$, classroom comfort $r(391)= -.14$, $r^2= .02$, $p<.01$, faculty support $r(391)= -.21$, $r^2= .04$, $p<.001$, and family satisfaction $r(391)= -.26$, $r^2= .07$, $p<.001$. See Table 11.

Table 11

Correlations Among Sense of Belonging, College Stress, and Family Variables N = 391

	PS	*CC*	*PI*	*FS*	*CS*	*FC*	*FS*	*MC*	*FCM*
Peer Support	1.0								
Classroom Comfort	.35 ***	1.0							
Peer Isolation	-.58 ***	-.27 ***	1.0						
Faculty Support	.28 ***	.39 ***	-.20 ***	1.0					
College Stress	-.02 n.s.	-.14 **	.06 n.s.	-.21 ***	1.0				
FACES	.09 n.s.	-.25 n.s.	.01 n.s.	.18 ***	-.15 **	1.0			
Family Satisfaction	.07 n.s.	-.01 n.s.	.03 n.s.	.21 ***	-.23 ***	.71 ***	1.0		
Mother Communication	.10 n.s.	.03 n.s.	-.07 n.s.	.22 ***	-.14 **	.63 ***	.61 ***	1.0	
Father Communication	.10 n.s.	.04 n.s.	-.04 n.s.	.15 **	-.08 n.s.	.56 ***	.59 ***	.31 ***	1.0

*Note. Significant *p<.05, **p<.01, ***p<.001, n.s. = non significant.*

Classroom stress was significantly positively related to many of the substance abuse variables as well. Classroom stress was significantly positively related to prescription drug use $r(391)= .13$, $r^2= .02$, $p<.01$, diet pill use $r(391)= .11$, $r^2= .01$, $p<.05$, and tobacco use $r(391)= .10$, $r^2= .01$, $p<.05$. All other variables were not significantly related with classroom stress. See Table 12 and 13. All other composite variables for this scale were not significantly correlated with the substance misuse variables. Multiple regression analyses were not performed because of low/non-existant correlations between the predictor variables and the dependent variables. See Table 12 and 13 for all correlations among these variables.

Table 12

Correlations Among Substance Variables,Sense of Belonging and College Stress N = 391

	P	*T*	*30*	*AFQ*	*PS*	*CC*	*PI*	*FS*	*CS*
Pot Use	1.0								
Tobacco	.36 ***	1.0							
Last 30 Days	.63 ***	.35 ***	1.0						
Alcohol Quantity*Freq	.24 ***	.41 ***	.70 ***	1.0					
Peer Support	-.04 n.s.	-.04 n.s.	-.02 n.s.	.07 n.s.	1.0				
Classroom Comfort	.03 n.s.	.03 n.s.	.06 n.s.	.01 n.s.	-.01 n.s.	1.0			
Peer Isolation	.04 n.s.	.04 n.s.	-.01 n.s.	-.01 n.s.	-.58 ***	-.27 ***	1.0		
Faculty Support	-.01 n.s.	-.01 n.s.	..02 n.s.	-.01 n.s.	.28 ***	.39 ***	-.20 ***	1.0	
College Stress	.02 n.s.	.03 n.s.	.10 *	.05 n.s.	-.02 n.s.	-.14 **	.06 n.s.	-.21 ***	1.0

*Note. Significant *p<.05, **p<.01, ***p<.001, n.s. = non significant.*

Table 13

Correlations Among Hard Drug Variables, Alcohol Related Behaviors, and Sense of Belonging Variables N=391

	ARB	*C*	*H*	*M*	*HL*	*XTC*	*GHB*	*PD*	*DP*	OD	THD
ARB	1.0										
Cocaine	.24 ***	1.0									
Heroin	.07 n.s.	.50 ***	1.0								
Meth	.18 ***	.51 ***	.58 ***	1.0							
Hallucinogens	.21 ***	.71 ***	.42 ***	.65 ***	1.0						
Ecstasy	.12 **	53 ***	.51 ***	.57 ***	.47 ***	1.0					
GHB	.30 ***	.39 ***	.64 ***	.64 ***	.39 ***	.62 ***	1.0				
Prescription Drugs	.20 ***	.41 ***	.24 ***	.47 ***	.45 ***	.23 ***	.24 ***	1.0			
Diet Pills	.35 ***	.15 ***	.15 **	.08 n.s.	.08 n.s.	.12 *	.10 *	.31 ***	1.0		
Other Drugs	.51 ***	.25 ***	.09 n.s.	.23 ***	.33 ***	.11 *	.08 n.s.	.46 ***	.18 ***	1.0	
Total Hard Drug Use	.31 ***	.69 ***	.60 ***	.72 ***	.69 ***	.62 ***	.61 ***	.69 ***	.60 ***	.37 ***	1.0
Peer Support	-.01 n.s.	-.01 n.s.	-.02 n.s.	-.02 n.s.	-.04 n.s.	.01 n.s.	.01 n.s.	-.01 n.s.	-.01 n.s.	-.02 n.s.	-.01 n.s.
Classroom Comfort	-.01 n.s.	.03 n.s.	-.01 n.s.	.01 n.s.	.03 n.s.	.05 n.s.	-.01 n.s.	-.02 n.s.	-.06 n.s.	.02 n.s.	-.02 n.s.
Peer Isolation	.04 n.s.	-.02 n.s.	-.01 n.s.	-.03 n.s.	.02 n.s.	-.03 n.s.	-.01 n.s.	-.02 n.s.	.01 n.s.	-.01 n.s.	-.01 n.s.
Faculty Support	-.06 n.s.	.05 n.s.	-.01 n.s.	.02 n.s.	-.02 n.s.	-.02 n.s.	-.04 n.s.	-.01 n.s.	-.01 n.s.	-.01 n.s.	-.01 n.s.
College Stress	.11 *	.01 n.s.	-.01 n.s.	.01 n.s.	-.01 n.s.	-.05 n.s.	.13 n.s.	.13 **	.11 n.s.	.03 n.s.	.07 n.s.

*Note. Significant *p<.05, **p<.01, ***p<.001, n.s. = non significant.*

Hypothesis 6

Bivariate correlations were completed on the substance misuse variables and alcohol related behaviors. There were many significant positive correlations with the substance misuse variables. Alcohol related behaviors were significantly positively related to the following variables: cocaine use $r(391)= .24$, $r^2= .06$, $p<.001$, methamphetamine use $r(391)= .18$, $r^2= .03$, $p<.001$, hallucinogen use $r(391)= .21$, $r^2= .04$, $p<.001$, ecstasy use $r(391)= .20$, $r^2= .04$, $p<.001$, ghb/ketamine/rohyphnol use $r(391)= .16$, $r^2= .02$, $p<.05$, prescription pill use $r(391)= .30$, $r^2= .09$, $p<.001$,diet pill use $r(391)= .20$, $r^2= .04$, $p<.001$, other drug use $r(391)= .35$, $r^2= .12$, $p<.001$, marijuana use $r(391)= .30$, $r^2= .09$, $p<.001$, tobacco use $r(391)= .35$, $r^2= .12$, $p<.001$, highest number of drinks in 30 days $r(391)= .52$, $r^2= .27$, alcohol frequency* quantity $r(391)= .49$, $r^2= .24$, $p<.001$, and total hard drug use $r(391)= .32$, $r^2= .10$, $p<.001$. See Table 14 and 15 for all correlations among substance misuse variables and alcohol related behaviors.

Table 14

Correlations Among Substance Misuse Variables and Alcohol Related Behaviors N=391

	ARB	*C*	*H*	*M*	*HL*	*XTC*	*GHB*	*PD*	*DP*
ARB	1.0								
Cocaine	.24 ***	1.0							
Heroin	.07 n.s.	.50 ***	1.0						
Meth	.18 ***	.51 ***	.58 ***	1.0					
Hallucinogens	.21 ***	.71 ***	.42 ***	.65 ***	1.0				
Ecstasy	.12 **	53 ***	.51 ***	.57 ***	.47 ***	1.0			
GHB	.30 ***	.39 ***	.64 ***	.64 ***	.39 ***	.62 ***	1.0		
Prescription Drugs	.20 ***	.41 ***	.24 ***	.47 ***	.45 ***	.23 ***	.24 ***	1.0	
Diet Pills	.35 ***	.15 ***	.15 **	.08 n.s.	.08 n.s.	.12 *	.10 *	.31 ***	1.0
Other Drugs	.51 ***	.25 ***	.09 n.s.	.23 ***	.33 ***	.11 *	.08 n.s.	.46 ***	.18 ***
Total Hard Drug Use	.31 ***	.69 ***	.60 ***	.72 ***	.69 ***	.62 ***	.61 ***	.69 ***	.60 ***
Pot Use	.30 ***	.26 ***	.01 n.s.	.25 ***	.36 ***	.19 ***	.03 n.s.	.38 ***	.11 *
Tobacco	.35 ***	.19 ***	-.01 n.s.	.09 n.s.	.18 ***	.13 *	.02 n.s.	.28 ***	.15 **
Last 30 Days	.52 ***	.11 *	-.01 n.s.	.05 n.s.	.14 **	.12 *	.02 n.s.	.16 ***	.14 **
Alcohol Freq*Quantity	.49 ***	.17 **	-.01 n.s.	.06 n.s.	.10 *	.13 **	.05 n.s.	.26 ***	.15 **

*Note. Significant *p<.05, **p<.01, ***p<.001, n.s. = non significant.*

Table 15

Correlations Among Substance Misuse Variables and Alcohol Related Behaviors N=391

	OD	THD	P	T	30	ALQ
Other Drugs	1.0					
Total Hard Drug Use	.37 ***	1.0				
Pot Use	.64 ***	.32 ***	1.0			
Tobacco	.28 ***	.35 ***	.36 ***	1.0		
Last 30 Days	.21 ***	.17 **	.63 ***	.35 ***	1.0	
Alcohol Freq*Quantity	.15 **	.21 ***	.24 ***	.41 ***	.70 ***	1.0

*Note. Significant *p<.05, **p<.01, ***p<.001, n.s. = non significant.*

SUMMARY

The purpose of this study was to investigate the family variables of adaptability, cohesion, communication, and family satisfaction, as they related to substance misuse in college students at Old Dominion University. Another focus of this study was to investigate sense of belonging and classroom stress as mediating factors between the family factors and alcohol/drug variables. It was also the aim of the study to understand the demographics of substance users at Old Dominion.

Family Variables and Substance Misuse

For the first hypothesis, family adaptability and family cohesion were predicted to have a negative (protective) relationship with substance use. This hypothesis was not supported, all of the Pearson correlations were not significant. Olson and Killorin (as cited in Olson et al., 1989) suggested that alcoholic families had higher levels of extreme families, this would suggest that higher functioning in families should lead to less substance use. Another study found adolescents with greater family cohesion and achievement orientation showed fewer symptoms of drug abuse and alcohol dependence (Gabel et al., 1998). The findings from this study sharply contrast previous findings on this construct, no relationship was discovered among these variables.

The data from this study was collected right after the students' spring break, this may have caused inflated drinking rates and could have impacted the findings in a large way. However, the drinking rates of the students in this sample are similar to a previous study at the university (Cutchin, & Morrow, 2003). Many of those who were high drinkers during this time may not have behaved this way in a typical school year. Many of the drinking variables were sensitive to time (i.e. Highest number of drinks in the past

thirty days, four or more drinks in the past two weeks, etc.). Another reason no relationships were found among the cohesion/adaptability variables and substance misuse was that reliabilities for both of these scales were rather low. Decreased reliability could mean that the scales may not be consistent in this sample.

For hypothesis three, it was predicted that high levels of family satisfaction would be related to low level of substance misuse and alcohol related problem. This hypothesis was also not supported, results were opposite of the predicted direction. All substance variables were significantly positively related to the family satisfaction variables. Total family satisfaction was positively related to the highest number of drinks in the last thirty days. Family cohesion (satisfaction scale) was positively related to the highest number of drinks in the last thirty days. Lastly, family adaptability (satisfaction scale) was significantly related to the highest number of drinks in the last thirty days.

Interestingly, is that in Bonk's study (1984) (as cited in Olson et al., 1989) families had significantly higher satisfaction at posttest, and adaptability and cohesion were unchanged. In the same study, family satisfaction was reported to have a protective effect on stress. In the current study, family satisfaction was also shown to have a protective effect with college stress. These results suggest that similar outcomes should have been noted for the substance misuse variables.

Correlations were also performed on family communication and the substance variables. Open father communication was positively related to the participant's alcohol quantity/frequency. It was predicted that communication would a protective relationship with substance misuse variables to promote greater family functioning with adaptability and cohesion. Family communication was theoretically the facilitating piece on the

Circumplex Model, essential for families to move on the other dimensions of the model (Olson & DeFrain, 2000Anderson and Henry (1994) found that family communication along with other variables provide a buffering effect on substance use.

In a previous study at Old Dominion, heroin use and family communication were weakly positively correlated, and negatively correlated with prescription drug use (Cutchin & Morrow, 2003). Although these were two different scales, family communication has had weak negative and weak positive relationships with substance misuse variables in Old Dominion college students.

Family Type Differences

For hypothesis two, it was hypothesized that those who were categorized as members of a Balanced Family (high adaptability, high cohesion) would report the lowest levels of substance use and alcohol related behaviors, as compared to those students who are categorized as members of Moderately Balanced, Middle-Ranged, and Extreme Families. This hypothesis was not supported, and only produced two family groups: Middle-Ranged and Extreme. After the family type variable was calculated, there were no participants who fell in the balanced range.

Central levels of cohesion separated (low to moderate) and connected (moderate to high) would theoretically provide the best levels for family functioning. For adaptability the moderate levels of the variable are seen as the most desirable for family functioning (structured and flexible). The extreme ends for both variables were seen to be problematic (Brubaker, 1993; Olson et al., 1989). In this sample, the extreme family type (combined cohesion and adaptability) was associated with less substance use than the "higher" functioning family type.

The low reliability of the cohesion scale could definitely play a large part in the results from the ANOVAs. Additionally, as suggested in scoring these scales, empirical data suggested that FACES II does not adequately measure the high categories of "enmeshed" and "chaotic" families. These categories were reinterpreted as "very flexible" for adaptability and " very connected" for cohesion (Olson et al., 1992). Upon calculation of the family type variable, no participant fell in the balanced range, which would translate to very high adaptability and cohesion. Therefore, there was limited range in these family variables in that most participants fell in the low ranges of functioning. Again, the time in which the study took place (spring break) should be taken into account, as well as the nature of some of the substance misuse variables.

Gender Differences

For hypothesis four, it was predicted that males would have a greater frequency and volume of substance use than females; and that males would have more alcohol related problems compared to females. This hypothesis was generally supported, with males significantly using more than females. Males drank more on the highest number of drinks in the last thirty days as compared to females. Males also used significantly more heroin than females.

This finding confirms that males are more likely to use illicit drugs in the current sample (Johnston et al., 2003). This finding was also confirmed by the NHDA report (2003) that men are more likely to report more illicit drug use. Also found in the same report, males are more likely than female to have higher drinking in the past month, and report themselves as current drinkers, and were also more likely to drive under the influence of alcohol. One possible explanation for this is that males have similar

subjective effects to alcohol as women, but consume greater amounts to achieve the effect, other researchers suggest that this may be a function of body mass (Kahler, Read, Wood, & Palfai, 2003). Females were more likely than males to perceive that their close friends would disapprove of their substance use (NHDA, 1997). These findings could potentially explain the trend of higher drug use in males.

Substance Misuse and Alcohol Related Problems

It was predicted that higher levels of substance misuse would be related to higher levels of alcohol related problems. This hypothesis was supported, with many relationships between alcohol related problems and substance variables. All of the significant correlations were positively related to alcohol related behaviors. These variables were cocaine use, methamphetamine use, hallucinogen use, ecstasy use, ghb/rohypnol use, prescription drug use, diet pill use, other drug use, marijuana use, tobacco use, highest number of drinks in 30 days, male binge drinking, female binge drinking, alcohol frequency*quantity, and total hard drug use. Drug and alcohol use is often associated with related problems. Particularly, binge drinking has relationships with harmful behaviors such as risky sexual practices, drunk driving, academic difficulties, and social problems (Wechsler et al., 2002). Shoplifting and gang fighting were associated with alcohol use and other illicit drug use (NHDA, 1997). The NHDA 2002 report found that twenty-six percent of young adults reported driving under the influence in the past year.

Summary of Conclusions

Hypothesis one was not supported, family cohesion and adaptability were predicted to have a negative effect on substance use. Hypothesis two was also not supported, there were no significant correlations. . It was predicted that those in the more balanced ranges would have less substance use. Hypothesis three was not supported, high levels of family satisfaction were associated with high levels of alcohol use. Also, there were no significant relationships with family communication and substance misuse.

Hypothesis four was supported, confirming previous research that males have a higher frequency and volume of substance use than females. Hypothesis five correlations were weak or non-existent; so multiple regression analyses could not be completed. . Hypothesis six was supported in that higher levels of substance misuse were related to higher levels of alcohol related problems.

Limitations/Implications

There were many limitations that need to be considered in this study. Since all of the data was collected after spring break, it is possible there are some participants who reported being high drinkers that are normally infrequent drinkers. This could have greatly influenced the results. It would be interesting to repeat the study at the same time the following year, to see if these results are consistant.

Another major limitation for this study was the limited range in the family variables. These variables all had means that were generally low. Additionally, many of the scales had poor reliability,which shows that the measure many not be consistant answer the questions consistently. This can be seen in very poor reliability for the cohesion subscale in the FACES scale.

Another limitation is that we are used convenience sampling and that the sample consists of college students. It is probably not realistic to capture the functioning of drug abusing individuals in a college setting. Also, there are large proportions of females in this sample, who typically use a lower quantity and frequency of drugs and alcohol compared to males. Another issue is that Old Dominion is a large commuter campus and many students reside with their parents while in school. This could explain lower numbers of drug and alcohol use in this population.

Some implications of this study are a greater knowledge of substance misuse in the Old Dominion student population. Also, this data could potentially be used for interventions at the university to reduce drinking and drug use.

Future Directions and Conclusions

Although all of the family variables were in the opposite direction predicted, it is an interesting and consistent pattern of results for this sample. This study is unique from other research in the literature in that unique results were found with family variables and substance variables. Also, a greater knowledge of substance use in college students at this university was gained from this paper.

A similar study would need to be conducted after spring break to see if these results are unique to this time period. More research would also need to be conducted to observe drinking rates during different time periods in a college semester. Also, a study of only males might produce more dramatic results, since they tend to use greater amounts than females. A study of this nature would also be desired at a university with a greater proportion of residential students, these universities tend to have more substance

misuse and those variables would potentially have more significant relationships with family variables.

It is hoped that these results could lead to potential interventions in the college environment. Interventions could be focused on specific time periods during the college semester that are known for inflated drinking rates. Researchers at universities in typical spring break locations could try a drinking intervention to provide education on drinking and alcohol related problems. At universities in schools in other locations other interventions could be focused on drinking on their individual campuses involving communities and local drinking establishments. As a result, hopefully this research and other similar studies can create awareness about substance misuse and potentially harmful behavior.

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APPENDIX A

PARTICIPANT FLYER

Date Posted: _____ IRB/COSHSC #

Project Family Systems
An Online Survey

Description: This research project consists of filling out surveys that have to do will family characteristics, social support, and alcohol and other drug use. Participants will fill out the survey online.

Participants: Participation is open to any ODU undergraduate or graduate student at Old Dominion University. Participants must be 18 years of age to 25 years of age.

Time Requirements: It will take participants approximately 30 minutes to fill out the online survey.

Sign-up Information: You may obtain an information sheet from the Research Participant Administrator in MGB 134E. Check the folder marked "PROJECT FAMILY SYSTEMS" for information on the study.

Students will go online to www.psychdata.net and enter #### in the "Go to Survey #" space. Then click the GO button.

Research Participation Credits: If you are taking a Psychology class you will receive 1 Psychology Department research credit.

Researchers and Contact Information:

Principal Investigator: Jennifer A. Cutchin 289-7723
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Faculty Supervisor: Jennifer Ann Morrow, Ph.D.
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APPENDIX B

INFORMATION SHEET/LETTER FOR PROJECT FAMILY SYSTEMS

Dear Students:

My name is Jennifer Cutchin and I am a Masters student in the Psychology Department at Old Dominion University. I am conducting a research study investigating attitudes about family life and frequency of substance use. This study has been approved by the College of Sciences Human Subjects Committee. Participation in this study is completely voluntary. Participation in the study requires students to fill out an online survey, which should take approximately 30 minutes to complete. Online surveys are hosted on a secure website and only I have access to the database. All responses will remain confidential and all subsequent reports will be based on grouped, not individual, data. For those students who wish to participate, please go to http://www.psychdata.net and go to survey ####.

Once you have filled out the survey you will have the opportunity to enter your name and contact information if you want Psychology department research credit (1 credit). Thank you in advance for your participation. Those students who would like more information about the study can contact me (see contact information below) for more information. Students who would like to receive a copy of the final report for this project may contact me in August 2004.

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. David Swain, the current IRB chair, at 757-683-6028, or the Old Dominion University Office of Research and Graduate Studies, at 757-683-3460. If you have any questions about substance abuse you can also call the center for substance abuse treatment national drug and alcohol referral service, at 1-800-662-HELP.

APPENDIX B (continued)

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APPENDIX C

SURVEY

Please fill out the below surveys as accurately and honestly as possible. These surveys are completely anonymous.

(Alcohol Related Behaviors)

INSTRUCTIONS: Answer how often you have done the items listed below in the past year as a result of drinking alcoholic beverages.

a = Never b = Yes, but not in the past year c = 1-2 times d = 3-5 times
e = 6-9 times f = 10 or more times

As a result of drinking alcoholic beverages, I....

1. engaged in unplanned sexual activity.
2. felt sad, blue, or depressed.
3. drove under the influence.
4. was nervous or irritable.
5. did not use protection when engaging in sex.
6. felt bad about myself.
7. engaged in illegal activities associated with drug use.
8. had problems with appetite or sleeping.
9. drove a car when I knew I had too much to drink to drive safely.
10. had a headache (hangover) the morning after drinking.
11. felt very sick to my stomach or threw up after drinking.
12. showed up late for work or school because of drinking, a hangover, or an illness caused by drinking.

APPENDIX C (continued)

13. didn't go to work or missed classes because of drinking, a hangover, or an illness caused by drinking.

14. got into physical fights when drinking.

15. damaged property, set off a false alarm, or other things like that after I had been drinking.

16. heard complaints from my boyfriend/girlfriend (or spouse), parents(s), or other near relative about my drinking.

17. created problems between me and my boyfriend/girlfriend (or spouse) or another near relative.

18. got into sexual situations which I later regretted.

19. received a lower grade on an exam or paper than I should have because of drinking

20. awakened the morning after a good bit of drinking and found that I could not remember part of the evening before.

21. had 'the shakes' after stopping or cutting down on drinking (for example, my hands shook so that my coffee cup rattles in the saucer, or I had trouble lighting a cigarette).

22. found I needed larger amounts of alcohol to feel any effect, or that I could no longer get high or drunk on the amount that used to get me high or drunk.

23. felt guilty about my drink.

APPENDIX C (continued)

(FACES II)

INSTRUCTIONS: Rate how often the things listed below occurred in the family you grew up in.

a. Almost Never b. Once in Awhile c. Sometimes d. Frequently e. Almost Always

1. Family members are supportive of each other during difficult times.
2. In our family, it is easy for everyone to express his/her opinion.
3. It is easier to discuss problems with people outside the family than with other family members.
4. Each family member has input regarding major family decisions.
5. Our family gathers together in the same room.
6. Children have a say in their discipline.
7. Our family does things together.
8. Family members discuss problems and feel good about the solutions.
9. In our family, everyone goes his/her own way.
10. Our family tries new ways of dealing with problems.
11. Family members go along with what the family decides to do.
12. In our family, everyone shares responsibilities.
13. Family members like to spend their free time with each other.
14. It is difficult to get a rule changed in our family.
15. Family members avoid each other at home.
16. When problems arise, we compromise.

APPENDIX C (continued)

17. We approve of each other's friends. We shift household responsibilities from person to person.
18. Family members know each other's close friends.
19. It is hard to know what the rules are in our family.
20. Family members consults other family members on personal decisions.
21. Family members say what they want.
22. We have difficulty thinking of things to do as a family.
23. In solving problems, the children's suggestions are followed.
24. Family members feel very close to each other.
25. Discipline is fair in our family.
26. Family members feel close to people outside the family than to other family
27. Family members are afraid to say what is on their minds.
28. Family members pair up rather than do things as a total family.
29. Family members share interests and hobbies with each other.

APPENDIX C (continued)

(Substance Misuse)

INSTRUCTIONS: Answer the questions below regarding your alcohol use.

1. Are you currently:
   a. a lifelong non-drinker of alcoholic beverages
   b. a former drinker of alcoholic beverages, now a non-drinker
   c. an infrequent drinker of alcoholic beverages (drink, but not in the past year)
   d. an occasional drinker of alcoholic beverages (at least once in the past year)
   e. a regular drinker of alcoholic beverages (typically 1 or more drinks per month)

2. In a typical week during the school year, on how many days do you have at least one drink containing alcohol?
   a. 0 b. 1 c. 2 d. 3 e. 4 f. 5 g. 6 h. 7

3. In the past year, how often did you smoke cigarettes or use smokeless tobacco products (chew, snuff)?
   a. not a all
   b. once per month or less
   c. 2-3 times per month
   d. once a week
   e. 2-4 days a week
   f. 5-6 days a week
   g. every day

4. In the past year, how often did you smoke marijuana (including hash or hash oil)?
   a. not a all
   b. once per month or less
   c. 2-3 times per month
   d. once a week
   e. 2-4 days a week
   f. 5-6 days a week
   g. every day

5a. How many drinks do you have on a typical day during the school year when you are drinking? _____

5b. During the last 30 days, what is the highest number of drinks that you drank on any one occasion? _____

5c. In the last two weeks, how many times have you had four or more drinks in a row? _____

APPENDIX C (continued)

5d. In the last two weeks, how many times have you had five or more drinks in a row?

_____

APPENDIX C (continued)

(Substance Misuse)

INSTRUCTIONS: For the following questions how often within the past year have you used the following substances:

a = Did not use b = 1-2 times c = 3-5 times d = 6-9 times e = 10 or more times

6. cocaine (crack, rock, freebase, powder)
7. heroin (injected or smoked, smack, horse)
8. methamphetamines (speed, crystal meth, ice, crank)
9. hallucinogens (LSD, mescaline, PCP, psilocybin, peyote)
10. ecstasy, MDMA, sextasy
11. GHB, Rohypnol, Ketamine (Special K)
12. prescription drugs not prescribed to you
13. diet pills (ephedrine, laxatives, dexatrim)
14. other drugs

APPENDIX C (continued)

(College Stress)

INSTRUCTIONS: Rate how much you agree with each of the statements below:

a. Strongly Disagree b. Moderately Disagree c. Slightly Disagree
d. Neither Agree nor Disagree e. Slightly Agree f. Moderately Agree g. Strongly Agree

1. Having multiple tests or assignments on the same day stresses me out.
2. I stress about maintaining good grades.
3. Since I have started college I feel more stress in my life.
4. I skip classes because I'm stressed out about school.
5. I often do not get enough sleep because I'm stressed about school.
6. I am constantly worrying if I will get all of my schoolwork done.
7. Preparing for graduation stresses me out.
8. I get stressed because I never have enough time to study.
9. I get stressed because I can never finish all the readings required for class.
10. The parking situation on campus stresses me out.
11. I get stressed because I can't get into the classes I need to graduate.
12. I'm stressed because I never have enough time for myself.
13. Pleasing my parents/significant other stresses me out.
14. I get stressed because I can't manage my time effectively.
15. I often get anxious when I have an exam.
16. I'm stressed about being able to pay for my education.

APPENDIX C (continued)

(Family Satisfaction)

INSTRUCTIONS : Rate how satisfied you are with certain aspects of your family that you grew up with.

a= Dissatisfied b= somewhat dissatisfied c= generally satisfied d= very satisfied e= extremely satisfied

How Satisfied Are You :

1. With how close you feel to the rest of your family ?
2. With your ability to say what you want in the family ?
3. With your family's ability to try new things ?
4. With how often parents make decsions in your family ?
5. With how much mother and father ague with each other ?
6. With how fair the criticism is in your family ?
7. With the amount of time you spend with your family ?
8. With the way you talk together to solve family problems ?
9. With your freedom to be alone when you want to ?
10. With how strictly you stay with who does what chores in your family ?
11. With you family's acceptance of your friends ?
12. With how clear is it what your family expects you to do ?
13. With how often you make decisions as a family, rather than individually ?
14. With the number of fun things that your family does together ?

APPENDIX C (continued)

(Family Communication-Mother)

INSTRUCTIONS : Rate how often the things listed below occurred in the family you grew up in.

a=Strongly Disagree b= Moderately Disagree c=Neither Agree or Disagree
d=Moderately Agree e=Strongly Agree

1. I can discuss my beliefs with my mother without feeling restrained or emabarassed.
2. Sometimes I have trouble believing everything my mother tells me.
3. My mother is a good listner.
4. I am sometimes afraid to ask my mother for what I want.
5. My mother has a tendency to say things to me which would be better left unsaid.
6. My mother can tell how I'm feeling without asking.
7. I am very satisfied with how my mother and I talk together.
8. If I were in trouble, I could tell my mother.
9. I openly show affection to my mother.
10. When we are having a problem, I often give my mother the silent treatment.
11. I am careful about what I say to my mother.
12. When talking to my mother, I have a tendency to say things that are better unsaid.
13. When I ask questions, I get honest answers from my mother.
14. My mother tries to understand my point of view.
15. There are topics I avoid discussing with my mother.
16. I find it easy to discuss problems with my mother.
17. It is very easy for me to express all my true feelings to my mother.
18. My mother nags/bothers me.

APPENDIX C (continued)

19. My mother insults me when she is angry with me.

20. I don't think I can tell my mother how I really feel about some things.

APPENDIX C (continued)

(Sense of Belonging Scale)

INSTRUCTIONS: Answer the questions below about your experiences in college.

a=Completely untrue b=Mostly untrue c=Equally true and untrue
d=Mostly true e=Completely true

1. I have met with classmates outside of class to study for an exam.
2. If I miss class, I know students who I could get notes from.
3. I discuss events which happened outside of class with my classmates.
4. I have discussed personal matters with students who I met in class.
5. I could contact another student from class if I had a question.
6. Other students are helpful in reminding me when assignments are due or when tests are approaching.
7. I have developed personal relationships with other students in class.
8. I invite people I know from class to do things socially.
9. I feel comfortable contributing to class discussions.
10. I feel comfortable asking a question in class.
11. I feel comfortable volunteering ideas or opinions in class.
12. Speaking in class is easy because I feel comfortable.
13. It is difficult to meet other students in class.
14. No one in my classes knows anything personal about me.
15. I rarely talk to other students in my class.
16. I know very few people in my class.
17. I feel comfortable talking about a problem with faculty.

APPENDIX C (continued)

18. I feel comfortable asking a teacher for help if I do not understand course-related material.

19. I feel that a faculty member would be sensitive to my difficulties if I shared them.

20. I feel comfortable socializing with a faculty member outside of class.

21. I feel that a faculty member would be sympathetic if I was upset.

22. I feel that a faculty member would take the time to talk to me if I needed help.

23. If I had a reason, I would feel comfortable seeking help from a faculty member outside of class time (office hours etc.).

24. I feel comfortable seeking help from a teacher before or after class.

25. I feel that a faculty member really tried to understand my problem when I talked about it.

26. I feel comfortable asking a teacher for help with a personal problem.

APPENDIX C (continued)

(Father Communication-Father)

INSTRUCTIONS : Rate how often the things listed below occurred in the family you grew up in.

a=Strongly Disagree b= Moderately Disagree c=Neither Agree or Disagree
d=Moderately Agree e=Strongly Agree

1. I can discuss my beliefs with my father without feeling restrained or emabarassed.
2. Sometimes I have trouble believing everything my father tells me.
3. My father is a good listner.
4. I am sometimes afraid to ask my father for what I want.
5. My father has a tendency to say things to me which would be better left unsaid.
6. My father can tell how I'm feeling without asking.
7. I am very satisfied with how my father and I talk together.
8. If I were in trouble, I could tell my father.
9. I openly show affection to my father.
10. When we are having a problem, I often give my father the silent treatment.
11. I am careful about what I say to my father.
12. When talking to my father, I have a tendency to say theings that would be better left unsaid.
13. When I ask questions, I get honest answers from my father.
14. My father tries to understand my point of view.
15. There are topics I avoid discussing with my father.
16. I find it easy to discuss problems with my father.
17. It is very easy for me to express all my true feelings to my father.

APPENDIX C (continued)

18. My father nags/bothers me.

19. My father insults me when she is angry with me.

20. I don't think I can tell my father how I really feel about some things.

APPENDIX C (continued)

BACKGROUND QUESTIONS

1. What is your race or ethnic group?
   a. Alaskan Native or Native American
   b. Asian-American or Pacific Islander
   c. Black or African-American
   d. Caucasian
   e. Other (please specify) _____

2. Are you Hispanic?
   a. Yes
   b. No

3. What is your relationship status?
   a. Single, not in a committed relationship
   b. Single, in a committed relationship
   c. Married
   d. Separated or divorced
   e. Widowed

4. What is your religion?
   a. Catholic
   b. Protestant (Baptist, Luthern, Episcopal, etc.)
   c. Jewish
   d. Muslim
   e. Other (please specify)_____
   f. None

5. What is your sex?
   a. Female
   b. Male

6. What is your class?
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior
   e. Non-matriculating
   f. Graduate student

7. What is your cumulative grade point average (GPA) _____

APPENDIX C (continued)

8. Are you involved in collegiate or intramural athletics?
   c. Yes
   d. No

9. Are you a member or a pledge in a fraternity/sorority?
   a. Yes
   b. No

10. Which of the following best describes your current place of residence?
   a. Residence hall/dorm/on-campus apartment
   b. Apartment, house, condo (not with parents)
   c. Live with parents
   d. Other (specify) _____

11. What is your sexual orientation?
   a. Heterosexual
   b. Homosexual
   c. Bisexual

12. How old are you? _____ years

13. Who did you live with while growing up?
   a. Mother and Father
   b. Mother
   c. Father
   d. Mother and Step-Father/Boyfriend
   e. Father and Step-Mother/Girlfriend
   f. Grandparents
   g. Other (specify)_____

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Old Dominion University, Norfolk, Virginia
Thesis: Substance Misuse and College Students: An Examination of Risk and Protective Factors. Relevant coursework: Psychopathology, Psychological Testing, and Psychopharmacology.

B.S., Psychology, Minor: Marketing, 2002
Old Dominion University, Norfolk, Virginia
Member of Psi Chi Honor Society. Assisted faculty on two different projects at the University involving tailgating behavior and driver simulation tasks.

Presentations

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