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Family Distress, First-Generation College Status, and Financial Stress as Predictors of Alcohol Use in College Students Seeking Mental Health Treatment

Narayan Jeremy Gold

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Family Distress, First-Generation College Status, and Financial Stress as Predictors of Alcohol
Use in College Students Seeking Mental Health Treatment

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Dissertation submitted to the
College of Education and Human Services
at West Virginia University
in partial fulfillment of the requirements.,
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in
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Abstract

Family Distress, First-Generation College Status, and Financial Stress as Predictors of Alcohol Use in College Students Seeking Mental Health Treatment

Narayan Gold, M.Ed.

Increasing numbers of students have been presenting for mental health treatment on college campuses to address their alcohol use (Gallagher, 2010). The goal of the current study was to examine the relationship between presenting alcohol use, family distress, college generational status (first-generation to college or non-first-generation to college), and financial distress. By examining the predictive nature of these variables screening could be improved to help identify and help students who are more at risk of experiencing the negative impact of alcohol use. It was hypothesized that higher levels of family distress, more financial stress, and being a first-generation college student would predict higher levels of alcohol use. The results that were obtained did not support this hypothesis. Conversely, first-generation college student status was negatively correlated to alcohol use, although the effect was small. Future research examining the relationship of first-generation college student status and risk factors will inform best practices and improve interventions and assessments with this population.

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Chapter 1: Introduction and Literature Review

Substance abuse disorders are among the leading health risks to the American population (SAMSHA, 2010). Specific populations fall prey to these disorders due to varying circumstances. Of these, college students appear to be at an increased risk to develop substance abuse disorders (Slutske et al., 2004). The lack of adult supervision combined with newfound freedom contributes to increased risk-taking behaviors. Intervention and assistance programs on college campuses have recognized the risks faced by college students. Counseling centers and university assistance programs have reported an increase in demand for services within this vulnerable population. The 2010 National Survey of Counseling Center Directors (NSCCD) study found that 45.7 percent of directors have reported an increased number of clients struggling with alcohol abuse (Gallagher, 2010). These researchers have demonstrated the need to address this rising mental health concern. We as counseling psychologists have an opportunity to utilize our unique conceptual framework and theoretical foundation to assist this growing population. In this study I have examined stress factors that contribute to alcohol use presentations among college students.

The family and environment in which young adults are raised influences the ways they act when beginning higher education (e.g., LeBrie et al., 2010). Genetics and biological predispositions also become salient factors in the vulnerability of college students. For example Lundahl and Lukas (2001) examined the impact of familial alcoholism on alcohol reactivity in college students. They focused on both physiological and psychological reactions to alcohol in social environments. They discovered that familial alcoholism influences physiological reactions (i.e., salivation) to the presence of alcohol. This biological connection between family patterns and alcohol use helps to demonstrate the importance of this area of research. These

researchers were able to anchor a physiological indicator of craving with a family history of alcohol abuse.

The relationships among family members and behavioral patterns in families influence how young adults approach their world (Sareen & Kaur, 2012). When a young child experiences his or her parent's use of alcohol she or he is poised to experiment with her/his own reactions to substances. Furthermore the family environment provides children with the first glimpse of rules and guidelines that govern future behavior. A family system that abuses or consumes significant amounts of alcohol will shape and influence the worldview and decision making process of the children reared in that environment. Additionally the impact of alcohol use can strain the connection parents' share with their children and not allow sufficient support for their development (Sareen & Kaur).

Developmental theorists, such as Erik Erickson (1968), have suggested that the age at which students begin attending college is fraught with many challenges. For young adults entering this stage of their lives they are attempting to find their identity and societal role. Erickson described this stage as the conflict of identity versus role confusion. As students are exposed to new choices (such as binge drinking alcohol) the choices of their peers influence their decisions (Weitzman, Nelson, & Weschler, 2003). This can translate into norms that are not reflective of the larger population (e.g. heavy binge drinking) that young adults assume to be normative behavior. Therefore, the college environment places students at risk of absorbing information that is not accurate and damaging to their health.

Students who are the first in their family to go to college (i.e., first-generation college students) have the additional stress of not having models in their lives that have navigated the potential risks and pitfalls of the college experience. Researchers have found that first-

generation status is a risk factor of low self-esteem and decreased academic performance (Aspelmeier et al., 2012). Without proper modeling and healthy familial relationships these students will not have developed proper coping skills to manage their stress. Many consequently will turn to alcohol use to manage their affect and use alcohol as a means of escape (Forestell, Dickter, & Young, 2012). Therefore, research examining the factor of first-generation college status will deepen our understanding of alcohol use among college students.

Economic and sociological changes have also influenced the students who are attending college. Financial assistance programs have opened new opportunities to those who may not have been able to afford a college education in the past. Despite these assistance programs many costs and fees associated with attending institutions of higher learning (e.g., text books and living expenses) further contribute to the stress and mental strain of college students. For example, Nelson et al. (2008) discovered that credit card debt was associated with many health risk behaviors among college students. The diathesis-stress model suggests that when an individual possess vulnerabilities to dangerous or damaging behaviors (i.e., alcohol abuse or mental illness) and are placed in a stressful environment (i.e., financial struggles) these vulnerabilities will often manifest (Belsky & Durand, 2009). Hypothesizing from the diathesis-stress model we can assume that the more stressful factors experienced by college students the greater the likelihood that they will engage in risky behaviors. Financial concerns are often cited as a contributing factor to stress in college students. As students struggle to balance a part time job, extracurricular activities, and academic requirements they often turn to ways of coping with their feelings that often damage their mental and physical health. Identifying and assessing financial stress is critical to working with this population as they present in college counseling and mental health treatment settings.

As increasing numbers of college students seek mental health treatment for alcohol use (Gallagher, 2010), it falls upon our field to better assess these individuals. College counseling centers (some with specialized departments) are tasked with treating these students. In order to accomplish the goals of treatment psychologists must gain a clearer picture of the presenting symptoms of these students before creating a treatment protocol. Instruments have been developed to assist in this process including the Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). In addition, college counseling centers have begun to utilize assessment tools to capture a variety of presenting concerns. The Counseling Center Assessment of Psychological Symptoms, or CCAPS – 62 is just such a measure (Locke et al., 2011). Additional demographic data has been gathered from the Standardized Data Set (SDS), which further describes the presenting symptomology of the college students seeking mental health services in college counseling centers. These tools have opened new avenues through which researchers and practitioners can better assess and treat college students presenting with a variety of concerns. For the purposes of this study I have examined the relationship between presenting 1) alcohol use, 2) family distress, 3) college generational status (first-generation to college or not first-generation to college), and 4) financial distress as these variables have not been examined using the tools discussed (AUDIT, CCAPS, and SDS). In the following sections the research foundations on which the current study is based will be examined.

Review of Literature

College Environment and Risk. The college environment is vital to examine as we consider the foundations of alcohol use among college students. As young adults transition into college they are faced with new challenges and trials as they pursue their higher education.

College has been described as one of the most stressful times in a young adult's life (Hales, 2009). For many students, college is the first experience of their lives with others who are distinct from themselves. These new interactions open the mind to new possibilities including using harmful substances. Furthermore the social environment of college is highly correlated with alcohol and other drug use. Those who choose not to pursue education post high school develop in differing ways from those who attend college (as they are exposed to different environments) (Slutske et al., 2004). Research has examined the risks associated with attending college in a variety of behaviors including alcohol use.

Witkiewitz et al. (2012) examined the relationship between alcohol and tobacco use among college students. The focus of the study was on the impact of the environment on drinking and smoking. Excessive alcohol and tobacco use have deleterious health effects on all individuals, thus their co-occurrence creates an increased risk of problems (in both short- and long-term contexts). The authors reported that college students use alcohol and tobacco at increased rates. Therefore comprehensive analysis must assess this increase. The authors chose to focus on concurrent use of tobacco and alcohol on an event level basis. Participants ($n = 86$) were selected from a large public northwestern university. Each participant completed electronic surveys over a 21-day period that assessed use of alcohol and tobacco. Questions in the survey focused on the context of alcohol consumption and tobacco use including environmental factors (e.g., when drinking in a bar as opposed to being at home).

The researchers found that participants smoked three times as many cigarettes when drinking alcohol (Witkiewitz et al., 2012). Additionally, when using tobacco participants were significantly more likely to also consume alcohol. The reciprocal findings of Witkiewitz et al. demonstrated the connection between alcohol use and tobacco use. Additionally, Witkiewitz et

al. reported that environmental contexts were associated with increased alcohol and tobacco use. Specifically attendance of house and fraternity parties as well as bars and restaurants (that serve alcohol) was associated with increased use of these two substances. These contexts are associated with 'college life' and many participants may not have attended these gatherings had they not been enrolled in college. The environment in which college students place themselves has been found by researchers to be connected with dangerous behaviors (Bishop, Downs, & Cohen, 2008).

Witkiewitz et al. (2012) found further support that there is a relationship between social interaction and alcohol/tobacco use. In each of the contexts of elevated use others were present and also using alcohol and tobacco. Bogg, Finn, and Monsey (2012) found support for social context as well (social investment was associated with increased alcohol consumption among college students). The authors highlighted the importance of social context and peer connections in increased alcohol and tobacco use. While the study would have been strengthened with the inclusion of control participants (not attending college), the results lend further support of the risks faced by college students as they socialize with their peers. The lasting consequences of prolonged alcohol (impacts adolescent brain development) and tobacco use are staggering and are a rising mental health concern (Brown et al., 2000). Slutske et al. (2004) also compared alcohol use among young adults attending college and those not attending college.

The college environment has been found to be a significant contributing factor to problematic alcohol use (Witkiewitz et al., 2012). To fully understand the impact of environment, research has been conducted to determine the differences in alcohol use between those who chose to attend college and those who did not. Slutske et al. (2004) conducted a study comparing alcohol use levels among female twins to determine the differences in alcohol

consumption among those who attended college and those who did not. A significant strength of this study is the use of twins to reduce variance between participants. In the case of identical twin studies the two paired participants share the same genetic and biological vulnerabilities. The experimenters were then able to determine if other factors (e.g., environment) contributed to the variables being measured.

Slutske et al. (2004) secured a sample of 787 female twins who were participating in a longitudinal female study. The participants were assessed for various demographics including socioeconomic status, education, living status (with parents or with partner), age, race, and employment. All of these factors helped to determine the differences between the twins who chose to attend college and those who did not. The participants were asked to complete phone interviews to assess their alcohol use at 1-year intervals for the duration of the study. Questions focused on frequency of use, quantity of use, and context of use (e.g. with friends at a house party, in a bar, or at a fraternity sorority function). The researchers also assessed if the participants had received an alcohol use diagnosis during the past year.

It was discovered by Slutske et al. (2004) that lifestyle and demographic variables accounted for a large percentage of variance among the variables of college attendance and alcohol involvement and that there was a significant difference in drinking behavior among the participants. When examining the pairs of twins discordant for college attendance, consumption of large quantities of alcohol (often referred to as binge drinking) was associated with college attendance. Slutske et al. suggested that the college environment facilitates this behavior and is a risk factor of attending college. Binge drinking is particularly dangerous for first time alcohol users because they may consume more than they had intended, as they are not familiar with the effects of alcohol. Gonzalez (2012) found an association between binge drinking and increased

suicidal behavior (a major risk to college students). Furthermore the physiological effects of consuming large quantities of alcohol are more significant than alcohol consumed over a longer period of time (Wemm et al., 2013).

An important limitation is found in the study conducted by Slutske et al. (2004) and that is the omission of male participants. The study was designed to tap into an existing longitudinal study examining females; however, without assessing men approximately, fifty percent of the college population was not assessed. Males in college encounter different social and environmental stressors than females and thus may experience factors that lead to alcohol use differently. Pederson (2012) demonstrated this difference in her study examining stress carry over among male and female college students. Despite this limitation, the work of Slutske et al. has enlightened our field to the differences in alcohol use among young women attending institutions of higher learning and those who do not. This population is placed at increased risk of engaging in binge drinking behavior and other alcohol use problems. Factors such as the college environment have contributed to the increase in demand for services observed by college counseling center directors (Gallagher, 2010). Therefore further research examining these factors is necessary to help quell this rising mental health concern.

Help Seeking

An exploration of help seeking behavior will further describe the students who present for mental health treatment. This discussion will further clarify the potential barriers faced by the students seeking mental health services. By gaining a clearer understanding of the help seeking behaviors of students we can find innovative avenues with which to help. Furthermore, these behaviors provide additional knowledge as to which areas are salient in alcohol use among this population. Many students express the fear of stigma associated with seeking help.

Groeschel, Wester, and Sedivy (2010) discovered that gender role conflicts were related to drinking motivation and negative consequences of alcohol use. They also found a complex relationship between drinking motivations, gender role conflicts, and help seeking attitudes. The authors did not discuss the intricacies of this relationship, which was a weakness in their study. However, they did discover a connection between help seeking and alcohol use among male college students. Researchers have also found an inverse relationship between masculinity and academic help seeking among college males (Wimer & Levant, 2011). As these researchers have demonstrated there are many potential barriers to help seeking among the male college population.

Nam et al. (2012) conducted a meta-analysis examining psychological factors associated with attitudes towards professional help seeking in college students. These researchers surveyed the extant literature for patterns in help seeking behavior among college students. The variables that were selected for study were: anticipated benefit, anticipated risks, depression, self-concealment, public-stigma, distress, self-disclosure, social support, and self-stigma. Nam et al. found that all of the anticipated variables correlated with help seeking attitudes; however, self-stigma, anticipated benefits, and self-disclosure were found to have the largest effect sizes. Each factor explored by Nam et al. is germane to the present study as these may influence which students seek help for their current mental health concerns. The factors that were found to have the largest effect sizes also speak to the difficulty many face in seeking help. Additionally, Lowinger (2012) discovered that many students minimize their alcohol use and elect not to seek help. When considering minimization and barriers to treatment many students do not attend to their mental health needs. Furthermore researchers (such as Buscemi et al., 2010) have examined the preferences of students seeking help.

Students seeking help for their mental health concerns can be assisted in a variety of ways. Best practice dictates that when creating intervention tools practitioners address these factors when assessing students. Buscemi et al. (2010) examined the variety of methods with which college students may seek help for their alcohol problems. The authors recruited 197 participants who reported recent heavy drinking episodes. They then assessed 14 different help seeking options that the participants could pursue if they wished for assistance with their alcohol use. There were several options including talking with a psychologist, talking with a clergy member, seeking information from student health, and going to an Alcoholics Anonymous meeting. The authors discovered that students preferred help and information offered by computerized self-assessments. This finding is germane to the current study, as college students prefer computerized assessments that shed light on their current behaviors (e.g., alcohol use). Therefore measures such as the AUDIT, CCAPS-62, and SDS, may be a preferred method of measurement when used with students seeking assistance with mental health concerns.

Buscemi et al. (2010) also found that participants preferred to receive information about alcohol use and assistance from their family. With this finding the researchers demonstrated the powerful influence that families can have on the decisions that students make upon arrival at college. Additionally, family support is sought when students are struggling with alcohol use and need further assistance. Therefore if family support is not available (due to many possible causes) these students may be at increased risk as they are not able to turn to those who care for them. It is vital to assess family support when working with college students who use alcohol at dangerous levels. Buscemi et al. demonstrated the importance of family relationships when considering help seeking behaviors in college students. I will now discuss the research findings examining familial factors on alcohol use.

Family Influence

The impact of familial background is seen in the two underlying components that shape the individual (on both biological and environmental bases). The genetic inheritance proffered by our parents will impact and shape how each of us develops in the world. Chen et al. (2012) demonstrated the connection between genetic variations in the dopaminergic system and alcohol use. They utilized the AUDIT to assess reported alcohol use among participants, which is a significant strength of their study as the AUDIT has been widely supported for its ability to screen for problematic alcohol use (Babor et al., 2001). The research team found that those with stronger dopamine producing neurons (and increased dopamine activity in the reward pathway of the brain) used alcohol more frequently than those who did not possess as many dopamine producing neurons. Chen et al. found a genetic predisposition to alcohol use among the participants of the study based upon gene mapping. One hundred and seventy-six male college students participated in the study. A total of ninety-eight representative polymorphisms in all major dopamine neurotransmitter genes were genotyped by the research team. Chen et al. utilized multiple analysis of variance to identify six single nucleotide polymorphisms (SNP) that made statistically significant contributions to alcohol use. Chen et al. concluded that dopamine related gene variants made strong contributions to reported alcohol use among college males.

Innovations in science have allowed many researchers to begin to unlock the connection between genetic and environmental factors and alcohol use (e.g., Chen, 2012; LeBrie et al., 2010). Our current scientific understanding regarding person and environment fit and interaction offers that each individual interacts and responds to the environment in varying ways based upon our genetic endowment (Kristof-Brown, Zimmerman, & Johnson, 2005). An understanding of how our parents reacted to certain situations will inform the behavior that we exhibit in similar

circumstances. While current medical and scientific technology does not allow us to understand these concepts on a factual level we can still understand these factors conceptually. In addition, our parents' life history also indicates some potential areas of vulnerability. LaBrie et al. (2010) discovered that a parental family history of alcohol abuse predicted problematic drinking among college students. Both medical doctors and psychologists have recognized the importance of these factors and thus assess for familial history when conducting thorough client intakes. Not only does our biology influence our behavior and actions, the environment in which an individual is raised also plays a significant role in shaping behavior (Sareen & Kaur, 2012).

The people who make up a family can vary widely from mother, father, and child to a single uncle raising his sister's children. Families can also be chosen based on life circumstances (e.g., a young gay man who has created a family of 'choice'). While the contexts and compositions differ the environment provided by our families shapes us as individuals. Sareen and Kaur (2012) reported on the influence of family environment on drug use. The researchers found that the lessons learned and behaviors observed by children and young adults changes the ways in which they interact with their world. For many college students going away to school is the first time in their lives that they have left the protection and influence of their families. This factor makes assessment of familial relationships necessary to treat these students when they present with mental health concerns. Considering both the biological and environmental impact of families, research exploring this factor is vital to treating alcohol use in college students.

Cleveland, Feinberg, and Jones (2012) sought to predict alcohol use across adolescents examining individual, family, peer, and contextual variables. Both risk and protective factors were considered in these contexts. This study focused on the interaction of development and alcohol use among adolescents. Data were collected from a longitudinal study (lasting four

years) examining more than 17,425 adolescents who received assistance for their alcohol use. The longitudinal study consisted of both experimental and control participants to assess for the effectiveness of community based intervention programs. Alcohol use levels were measured with a single item “How much alcohol they had consumed in the past month (30-days).” This choice marks a weakness in the study; as other measures (e.g., AUDIT) exist that have stronger evidence of validity and reliability. The authors may have chosen this item because they were part of a larger longitudinal study, and were limited by the needs of other research teams. Despite this limitation, Cleveland et al. were able to assess the impact of individual, peer, and familial risk/protective factors on alcohol use across time.

Cleveland et al. (2012) discovered that individual risk factors (positive attitudes towards alcohol and sensation seeking behaviors) increased during the developmental period. They also found that family protection (e.g., time spent engaged in positive activities with family members) declined during adolescence. Additionally, family risk (parents’ positive attitudes towards alcohol use) was found to be consistently related to alcohol use during the assessment period. Cleveland et al. demonstrated that family factors play a major role in alcohol use among adolescents. The messages received from the parents (or caretakers) of college students influences the decisions they make when journeying to institutions of higher learning. These results must be considered when working with the college population as family risk and protection both influence presenting symptomology. While college students were not assessed for this study, most students begin college at an age (18-25) where they are continuing to navigate the challenging time period of adolescence. Therefore, the research findings of Cleveland et al. are informative of the current discussion. Additionally, psychologists and developmental neurologists have found that executive brain development is not completed until

the age of 25, thereby categorizing college students at a late adolescent developmental stage (Casey, Jones, & Todd, 2008). Cleveland et al. demonstrated the connection between family beliefs and individual beliefs regarding alcohol use in adolescents. Family factors cannot be assessed without also considering cultural influences.

Shih et al. (2012) conducted a study that examined racial/ethnic and cultural factors and their interaction with alcohol use. They focused specifically on the relationship between cultural values, alcohol resistance self-efficacy, alcohol expectations, and alcohol initiation (first time alcohol use). The authors designed a 1-year longitudinal study that measured a sample of 6,054 middle school students (49% male, 57% Hispanic, 22% Asian, 18% non-Hispanic White, and 4% African American). One strength of this study was the research team's ability to examine a diverse sample of participants that captured the major ethnic cultural groups that seek services in a variety of settings. Shih et al. selected two cultural factors for their study: parental respect (honor and belief in one's parents) and familism (connection with one's family). Baseline measures of these two factors were gathered as well as alcohol resistance self-efficacy (belief that one will not use alcohol based on various scenarios) and alcohol expectancies (both positive and negative). Finally the researchers gathered data from the participants examining when/if they first used alcohol.

The authors discovered that participants with higher parental respect were less likely to initiate alcohol use. These same participants also displayed more alcohol resistance self-efficacy as well as more negative alcohol expectancies. Familism (or connection to one's family) was not found to be associated with alcohol initiation. Regarding ethnic differences, higher parental respect was protective against alcohol initiation in Asian and White participants; however, this result was not found in Hispanic and African American participants. Shih et al. (2012)

demonstrated the connection between cultural factors and initiation of alcohol use. A deeper understanding of cultural beliefs and practices allows practitioners a clearer picture of the family system. Furthermore these researchers also showed the influence of family beliefs on alcohol initiation. While this study focused on adolescents, the messages received at this age (and earlier) will be carried to college and will impact the choices made by students. Studies have also been conducted that focus on the impact of family on alcohol use in diverse populations.

The relationship between career and family can be a challenging one. Balancing the obligations of one's vocation and the needs of a growing household can cause significant stress in our lives. College students may also experience this stressor as they work to complete their academic goals and maintain a connection with their families. Thus these students may turn to both positive and harmful ways of coping with this stress, such as alcohol. Wang et al. (2010) conducted a study that explored the connection between daily work-family conflict and alcohol use. This study focused on Chinese workers ($n = 57$) employed by five companies located in Beijing. The participants worked in managerial and office positions across the selected companies. Daily phone interviews were utilized to collect data regarding alcohol use and work-family conflict (e.g., work preventing time with family). The authors used the tension reduction theory (that alcohol is consumed to reduce tension) (Kalodner, Delucia, & Ursprung, 1989) and stressor-vulnerability model to inform their study (using alcohol and drugs can increase a person's biological vulnerability to disease and damaging behavior) (Zuben & Spring, 1977). These models propose that when stressors are present individuals will seek ways of managing their stress. This model is particularly relevant in that college students are often under the most intense pressure they have ever encountered and thus must find ways of managing their stress. In both the work environment and higher education contexts alcohol is a typical choice of many

individuals to relieve stress. Wang et al. also proposed several moderating variables that were hypothesized to impact the relationship between alcohol use and work-family conflict: family support, co-worker support, and peer drinking norms.

Wang et al. (2010) found that work-to-family conflict, or work impacting family interactions, had a significant impact on alcohol use among the participants. They highlighted the importance of family and family conflict in choosing to use alcohol. Many participants cited alcohol as a way of coping with stress caused by navigating both their work obligations and the needs of their families. College students must also learn to navigate many obligations (academics, peer relationships, romantic connections, and family connections) and thus are vulnerable to alcohol use. Wang et al. also further bolstered the evidence linking the connection between family and alcohol use. While this study was conducted utilizing adult participants there are many parallels that can be drawn to college students. For example, peer drinking norms were found to also influence alcohol use in the participants, a finding that has also been demonstrated in college students (e.g., Walden et al., 2004). It is evident that the family is a significant and important factor in alcohol use among many different populations including diverse cultural subgroups. The stress caused by balancing family relationships with other responsibilities may also contribute to choosing alcohol as a coping strategy. Research has also explored the impact of supportive familial relationships on alcohol use.

The journey to higher education is challenging and requires effort and dedication to accomplish. Simply applying to colleges and universities necessitates testing and writing in a way that many young adults have not undertaken previously. Klasik (2012) reviewed many of the challenges that must be surmounted (e.g., family income) and the importance of support and coaching (from family or caring adults). If this support is not available simply applying to

college may be too complicated. The importance of caring and the perception of being cared for is needed to succeed prior to and during college (Klasik). For these young adults to launch into their lives, support and caring is required. This same relational variable is also necessary to prevent young adults from making destructive decisions. To further clarify the importance of perceived caring on alcohol use Wetherill and Fromme (2007) conducted a study focused on high school and college students.

Wetherill and Fromme (2007) recruited 2,003 high school students to participate in a longitudinal study assessing high school to college alcohol use. The authors focused on perceived parental awareness and (parental) caring behaviors experienced by participants as they transitioned out of high school and adjusted to college. The participants were 60% female, 54.3% Caucasian, 18% Asian, 15.3% Hispanic, and 12.4% multiracial or other ethnic identity (these demographics reflected the incoming class of students). Participants initially completed web-based surveys prior to and following their first semester of college. The surveys asked participants to complete items examining alcohol use, family and social motives, and perceived awareness and caring of peers and parents. Family motives questions were designed for this study to examine if participants made decisions based on family or social beliefs (e.g., “how important is it to you that you make decisions your parents would approve of?”). Perceived awareness and caring was measured using the Parental Awareness and Caring Questionnaire (PAC-Parents), an instrument that assesses the participant’s belief that the adults responsible for his/her care (typically parents) are concerned with their health and wellbeing. Alcohol use was measured using the Daily Drinking Questionnaire (Collins, Parks, & Marlatt, 1986), a measure that assesses alcohol use frequency.

The researchers discovered that family motives moderated the effect of perceived awareness and caring by parents, which in turn was related to quantity of alcohol use during high school. When examining their longitudinal results (three months prior to the end of senior year compared to end of first semester) Wetherill and Fromme (2007) found that alcohol use was predicted by perceived awareness of caring by parents. The authors demonstrated that parental and familial relationships exert a significant influence on the choices made by college students when presented with alcohol. The messages received by these same students when in high school were also found to impact alcohol use during college. Wetherill and Fromme established the importance of parents when helping their children to navigate the challenges and trials that they will be presented with. If these young adults do not recognize the harmful effects of alcohol use (or have not been provided with properly equipped caretakers) they are placed at increased risk. Furthermore they are more likely to present with mental health concerns and struggle in their academic career. For these and many others reasons proper assessment of familial relationships is necessary to assist and treat this population.

The strength of the connection between family relationships and alcohol use necessitates further research regarding the presenting symptomology of this population. When college students present for mental health services practitioners will be better equipped for working with these individuals by assessing these variables and reviewing instruments that capture these factors. Familial relationships are also an integral component of developmental theory, which helps illuminate the challenges faced by college students. Assessment of family relationships and patterns will inform the current decisions of college students and assist in treatment planning. These individuals are exploring their own identity and are interacting with the world in ways they have not previously. This time period is sensitive and places students at an

increased risk of engaging in dangerous behaviors. As the demand for treatment services continues to rise in the college population (Gallagher, 2010) researchers must find ways of capturing an accurate depiction of these students to properly design a treatment regimen. Additional variables will now be explored as contributing factors to presenting alcohol use in the college population.

First-Generation College Students

The many obstacles that must be surmounted to become accepted into an institution of higher learning can be daunting for young adults. This factor is vivid to those who have not had the benefit of parents who have overcome those very same challenges. Jean Piaget (1953), in his theory of cognitive development, postulated that children learn through 'hands-on' activities provided by the adults in their lives. He theorized that this process of learning and development does not end with adolescence and that many young adults continue to learn from the actions of their parents throughout their lives. Therefore, parents must have a working knowledge of the concepts and challenges that their children will be facing. For many parents who have not attended college they are ill equipped to help prepare their children for this life stage. Generational status has been examined in the context of which universities or colleges students apply to and which they decide to attend.

Cho et al. (2008) studied the relationship between gender, race, and socioeconomic status, in college selection among first- and non-first-generation students. These researchers drew a parallel between first- or non-first-generation college status and diversity among college students. A significant strength of this study is that the researchers also focused on diversity among first-generation college students in their choice of college. Cho et al. recruited 1,339 college freshmen to complete self-report surveys assessing psychological (e.g., values and

needs), social (e.g., potential peer group), and institutional variables (e.g., location of the college/university) that were hypothesized to influence their choice of college. The researchers identified generational status, ethnicity, gender, and socioeconomic status (SES) as moderator variables. Participants completed web-based surveys that assessed the factors that they identified as contributing to their decision to attend university or college.

The researchers reported that psychosocial factors and academic quality more significantly predicted college choice among first-generation as opposed to non-first-generation participants. Cho et al. (2008) discussed that first-generation students may need to plan more carefully in selecting a university or college because of extenuating circumstances such as financial aid and socioeconomic concerns. The authors also found that SES moderated the psychosocial and academic factors in choice among the first-generation students. This finding is enlightening to our current discussion as financial stress may be an additional contributing factor to risk in the college population. Cho et al. also presented an interesting discussion that these factors must be considered for retention and prevention efforts on campus. Research has supported the importance of financial stability on academic success (Soria & Stebleton, 2012). College counseling centers are increasingly considered a major component of student retention (Sharkin, 2004) and are ideally suited to conduct further research assessing risk factors (including family distress, first-generation college status, and financial stress). This research will allow prevention and treatment efforts to connect these at risk students with resources and support both on and off campus to ensure their academic and personal success. The relationship between first-generation college students and their parents warrants further discussion as the influence of family permeates all aspects of our lives.

Without a mental schema (organized pattern of thought or behavior) (Young, Klosko, Weishaar, 2003) for the activities and decisions that their children will face, parents cannot provide them with practice and support before they depart for college. Researchers have focused a scientific lens on the impact of parental support of young adults applying to college. York-Anderson and Bowman (1991) compared first-generation and non-first-generation college students' perceptions of parental support and factual knowledge of college. These researchers discovered that students who perceived more support had more factual information about applying to college and the college experience. York-Anderson and Bowman highlighted the disadvantage that first-generation college students experience when they do not perceive the support of their parents. First-generation students have not been provided with parental or caretaker models of typical life in college and subscribe to assumptions that are untrue. Woodyard, Hallam, and Bentley (2013) described many of these misperceptions (e.g., quantity of alcohol consumed) and predictors of them (being at a celebration). Furthermore as Wetherill and Fromme (2007) have discovered, parental support has not only been linked to factual knowledge of college, it has also been linked to alcohol use. This connection warrants further empirical investigations regarding the relationship between first-generation college students and presenting alcohol use symptomology. Research has also been conducted examining the challenges faced by first-generation college students.

Academic preparation is especially important for first-generation college students because researchers have found that this population often begins college behind their peers whose parents have attended college (Warburton, Bugarin, & Nunez, 2001). Due to this achievement gap, Stephens et al. (2012) designed a study that explored the differences between academic performance among first-generation and continuing generation students. The authors

hypothesized a cultural mismatch between the home environment in which first-generation college students were raised and the norms of American universities. The authors sought to determine if first-generation students underperform academically because of independent norms present at the universities in which they study. They also examined if having a 'working-class background' further divided first-generation students from the norms of the university they were attending. The authors accomplished this goal by assessing university administrators to determine cultural norms of each university under study. Stephens et al. also examined the attitudes and beliefs of both first-generation and continuing-generation students in college.

Stephens et al. (2012) found that the universities (both public and private) followed norms of self-sufficiency and independence (e.g. that students could find help on their own if they needed it). This norm was found to not match the norms of first-generation college students who focus on interdependence and support. The researchers also collected results regarding the academic impact of this cultural mismatch. The authors determined that first-generation students struggled to complete academic tasks when following the independent cultural environment of the university under study. Stephens et al. also discovered that for institutions that emphasized interdependence the first-generation students performed better academically and rated fewer tasks as difficult. Stephens et al. found that first-generation students performed better when under an interdependent and connected network (non-first-generation students' performance did not decline in this environment). For practitioners and scholars Stephens et al. have demonstrated that first-generation students experience more obstacles to academic success than those who have a parent(s) who has attended college. Furthermore the need for first-generation college students to fulfill their desire for connection and interdependence may guide them to

engaging in social behaviors to fit in. Additional research has focused on the social contexts of first-generation college students.

Holley and Gardner (2012) conducted a qualitative study to examine the socio-cultural experiences of first-generation doctoral students. While this population differs from undergraduate students, there are many similarities between these groups including the pressure and academic rigor that both must overcome to achieve their vocational goals. In addition, both groups of students have faced the challenges of being the first in their families to attend college. Holley and Gardner conducted interviews with 20 first-generation doctoral students to examine their experiences at both the graduate and undergraduate levels of higher education. Questions focused on social factors, support, and individual identity in the context of academic and personal achievement.

The researchers (Holley & Gardner, 2012) discovered that many different aspects of the interviewees' backgrounds influenced their experiences of graduate school. Several variables (institutional selection, area of study, finances, and family) emerged that colored and shaped the experiences of these students. These factors have been demonstrated to vary and impact values and beliefs (e.g., Stephens et al., 2012), thereby creating differences between first- and continuing-generation college students. Holley and Gardner (2012) noted that the participants discussed the many obstacles that they had to surpass to succeed in their academic programs. The researchers reported that many participants did not feel understood in these struggles, as their peers (who were not first-generation college students) could not relate to their experiences. For example, first-generation students often struggle with connecting with their peers because of differing environmental upbringings. These are factors that must be addressed for these students

to succeed. The importance of family and financial factors also opens new avenues for assessment and empirical exploration.

To be the first in one's family to attend college bestows both adulation and challenge. Many parents may not understand their children's decision to attend an institution of higher learning because they themselves have not pursued a college education. This can lead to a sense of not being supported by parents (Wetherill & Fromme, 2007), which contributes to additional stress and strain on these students. First-generation college students begin their education with a potential gap in their preparation compared to peers whose parents have attended college (Warburton et al., 2001). The lack of preparation combined with an environment that may not support the values in which they were raised (Stephens et al., 2012) creates a scenario that does not facilitate success. When under stress and strain coping strategies are utilized to manage the psychological turmoil that accompanies these negative feelings. Alcohol use has become a common choice among college students and is contributing to a rise in mental health service utilization (Gallagher, 2010). Research has not been conducted examining first-generation status as a measure of stress in the college population. Therefore it falls to us as psychologists to better assess this problem to create intervention strategies that will address these concerns. This arena of research has also illuminated another factor that appears to be connected to problematic alcohol use. Socioeconomic status has been connected to problematic alcohol use and poses a significant risk factor for the college population. This connection warrants further research assessing the impact that financial stress has on the college population and subsequent alcohol consumption. I will now explore research examining this factor.

Financial Stress

The status of the current economic condition in the United States has been described as similar to a recession. Countless individuals have found themselves unemployed and struggling to provide for their families. Ayers et al. (2012) found an increase in psychological distress and presenting symptomology following the 'economic downturn'. Not only do the providers of families experience the impact of this financial strain, the children are also impacted. As these children grow and become young adults the pressure that their families suffered shapes their development. Pursing a college degree requires a significant investment of not only one's time and effort but a large monetary contribution is also necessary. The government has reported that 65.6 % students are receiving financial assistance to pay for college (U.S. Department of Education, 2012). Despite financial assistance programs, the cost of living continues to increase and students who originate from financially struggling families experience additional stress. As their parents continue to try to maintain financial stability there is less help they are able to provide their children. Consequently students must learn to navigate yet another barrier to their success in college. Additionally, coping behaviors to manage the psychological symptoms accompanying stress are necessary. Researchers have examined the impact of financial stress on the use of alcohol.

The current health movement has produced a rich array of research examining the connection between stressors and behaviors. Shimotsu et al. (2012) conducted research illuminating the relationship between socioeconomic status, fruit and vegetable intake, and alcohol consumption. The purpose of their study was to examine the connection between health behaviors and socioeconomic status. These researchers hypothesized that fruit and vegetable intake would be inversely related to alcohol consumption and that this relationship would differ

based upon the SES of participants. Stratified sampling was utilized to select racially/ethnically diverse participants ($n = 9,959$) from a large urban area. A cross-sectional analysis design was employed to capture as diverse a sample as possible. Alcohol (including binge drinking) use and fruit and vegetable intake were assessed with questions regarding frequency and consumption (no formal assessment tools were utilized). The lack of formal assessments marks a weakness of the study and may have impacted the statistical findings. SES was measured by asking participants about household income and educational background.

Shimotsu et al. (2012) discovered that fruit and vegetable intake as well as alcohol consumption varied by SES. The participants who reported a lower household income and consumed five or more servings of fruits and vegetables per day were less likely to engage in binge drinking behavior. The higher SES participants did not demonstrate this same finding. While a third variable such as health behaviors or health awareness may better explain the relationship among these variables a clear inverse connection was found by Shimotsu et al. SES was found to have an impact on alcohol consumption behaviors specifically for those who have reported having a lower household income. Regarding college students, those who experience financial stress related to SES may be placed at risk of engaging in higher levels of problematic alcohol use than their peers. Additionally, binge-drinking behavior, a particularly dangerous method of consuming alcohol, was higher in those who grew up in lower SES households (according to the results obtained by Shimotsu et al.). Shimotsu et al. have found that health behaviors are related to socioeconomic status. Therefore proper evaluation of financial stress will help inform best practices when working with college students presenting with problematic alcohol use. Research studies have also focused on the connection between financial stress and academic success.

Student retention is a primary objective of services provided by colleges and universities. It is in the best interest of both the student and the institution to address the needs of students thereby allowing them to succeed and complete their degree. Offices of student retention have been created to accomplish such a goal. In keeping with this goal researchers have examined the causes of student drop out and loss when assessing the goal of student retention. Joo, Durband, and Grable (2008) asked students who reduced their course load or dropped out of school to report on the reasons for their decision (to leave or reduce their course load). These responses were compared to control participants who had remained enrolled in the university/college full time. A web-based survey was administered to 503 participants assessing the cause of their withdrawal/course reduction.

Joo et al. (2008) revealed that students who reduced their course load or withdrew from the university experienced an academic impact from financial stress. Their academic achievement was affected by the stress of paying for school and living expenses. This finding would be compounded if these students were also engaging in other behaviors that detracted from their academic abilities. Joo et al. helped to establish the connection between financial stress and academic achievement (a vital component of student retention). College counseling centers are part of the mission of student retention and thus must examine the impact of financial stress on the presenting symptomology of students. If the mission of student success and achievement is to be achieved financial stress must be addressed.

In addition to the previously discussed studies, Peirce et al. (1996) created a longitudinal assessment that examined the impact of financial stress, social support, and alcohol involvement. Participants completed general surveys that assessed their experiences with financial stress, social support, and quantity of alcohol use over a 3-year period. The participants must have been

19 years of age or older and were selectively sampled to represent both African American and Caucasian participants equally. Participants were also selected to represent varying levels of education (less than high school completion, high school completion, and some college education). A total of 1,040 respondents were recruited for the study. Participants were interviewed regarding their experiences with social support, financial stress, and alcohol use.

The research team (Peirce et al., 1996) discovered support for the financial-stress alcohol involvement relationship (which hypothesized that presence of financial stress in an environment produces anxiety which is then related to alcohol use). This connection is important to consider when working with college students as many carry the financial burdens of their parents to college. As these students enter into the less supervised environment of college they are at risk of developing problematic alcohol use. Spending behaviors have been found to significantly impact financial well-being in college and have been found to be connected to family financial patterns (Gutter & Copur, 2011). Peirce et al. (1996) also found that tangible social support (measured by the perception that others in the participants' life are present to help them) was protective against the connection between financial stress and alcohol use.

Researchers have found that SES impacts aspects of daily living from our choices to consume alcohol to daily vegetable and fruit intake (Shimotsu et al., 2012). In addition, Joo et al., (2008) also reported on the importance of financial stress on student retention and drop out. Finally, Peirce et al. (1996) discovered a connection between financial stress, social support, and alcohol use. As these researchers have demonstrated, financial stress plays an important role in alcohol use and perceptions of stressful life events. College students are not immune to this variable and must be properly assessed for financial stress when presenting for mental health concerns. I will now explore research examining alcohol use and stress in the college

population. Research included in this review is not exhaustive as previous studies that have been selected are most germane to the present proposed study.

College Student Alcohol Use and Stress

The transition to college is accompanied by freedom and exploration. MacNeela and Bredin (2011) cited freedom as a risk factor associated with binge drinking behavior in college females. Many students experience their first trials of the world without the safety net of those who have helped them to develop. For others their home environment was not supportive and instead they must navigate higher education on their own without prior knowledge or understanding offered from caretakers. Furthermore, parental perceptions of normative alcohol use have been found to be skewed in favor of heavy usage (LaBrie, 2011). This bad information and poor preparation places college students in a vulnerable position to fall prey to negative influences and harmful behaviors. College students often turn to alcohol as a way of coping with the problems of life. The stress reducing effects of alcohol makes its use an attractive option for the young and old alike. Many students struggle to fit in with their peers and thus turn to alcohol as a way of fitting in and managing social anxiety.

Kidorf and Lang (1999) explored the impact of social anxiety on stress-induced alcohol use. These researchers recruited 84 (42 male and 42 female) college students to participate in a 2-day study. Each participant was measured at baseline, creating a control group and experimental conditions. During each session participants were provided their preferred alcoholic beverage for a 30-minute period (all participants were over the age of 21). During the baseline session participants were simply provided the alcohol with no expectations. The experimenters then told participants that they would be giving a speech following the drinking period during the second phase. The participants completed measures of social anxiety and

alcohol expectancies during both phases of the experiment. The researchers found that more alcohol was consumed during the stressful period (anticipation of giving a speech). They termed this use stress-induced drinking. This finding was more pronounced in men and those who endorsed high trait social anxiety. Kidorf and Lang demonstrated the connection between stress and alcohol use over a short time frame. Further research has supported the connection between stress and alcohol consumption (Rice & Van, 2010). These researchers found a relationship between alcohol use, perceived stress, and perfectionistic thinking among college students. Both Kidorf and Lang and Rice and Van have helped the field of psychology recognize the importance of stress on college drinking. It is in the best interest of the college population to properly assess factors that contribute to stress to develop treatment strategies.

Researchers have examined students during the transition from college to the world of work in order to focus on this critical time in a young adult's life. Sadava and Pak (1993) followed 348 college students over two years as they transitioned from college into the next phase of their life. Assessments compared alcohol use during their senior year and the year following graduation. The researchers found that greater consumption of alcohol and greater frequency of intoxication were related to greater levels of perceived stress and stressful life events. Sadava and Pak demonstrated the connection between stress and alcohol use during the transition out of college. This time frame is filled with uncertainty and stress as college graduates strive to secure a job and financial stability. In addition, White, Labouvie, and Papadaratsakis (2005) discovered an increase in alcohol use levels among college students when compared to a group of same age peers entering the world of work. Furthermore, the problematic behaviors that are adopted in college persist into adult life. White and Ray (2013) reported on alcohol-related consequences caused by drinking in college on emerging adults. An

examination of factors that contribute to stress will allow this cycle to be interrupted. Culture has been found to play role in the experiences of stress among college students.

Colleges and universities offer the opportunity to connect with others who have unique cultural and ethnic backgrounds. Unfortunately many students experience this as a reason to exclude rather than include others. Perceptions of racism can significantly influence the experiences students have as they work to attain their degree. Furthermore, perceptions of racism can also contribute to stress and the need to cope with stress. Grekin (2012) examined the relationship between perceived racism and alcohol use among college students. Grekin hypothesized that students who experience racism would turn to alcohol as a method of reducing the tension that accompanies stress. Participants were 94 African American and 189 Caucasian college students who were asked to complete an online survey, which assessed perceived racism, alcohol consumption, alcohol consequences, deviant behavior, and negative affect.

Grekin (2012) conducted hierarchical multiple regression analysis on the data, and found that racism-related stress (as indicated by perceived racism) predicted alcohol consequences. This finding was present even when controlling for consumption levels among the participants. Additionally, these results were found for both the African American and Caucasian participants. Grekin demonstrated the universality that stress plays on many different cultures and ethnic groups. Many first-generation college students are at risk of experiencing racism and racism-related stress. These young adults have not had the benefit of having parents who have weathered the challenges of college and may not be able to prepare them for the culture shock of college. In addition, first-generation students often attend college with different cultural norms than those of non-first-generation students. Stress crosses cultural and ethnic barriers and places all students at risk of engaging in negative coping behaviors such as binge drinking.

Balancing the requirements of a job and academic assignments is difficult for even the most prepared students. The time constraints imposed by these obligations offers less opportunities for self-care. Butler, Dodge, and Faurote (2010) designed an experiment to examine the relationship between work stress, alcohol expectancies, and alcohol consumption among employed college students. They recruited 106 college students who were both enrolled full time (average credit hours 14.6) and also worked at least 5 hours per week of part time employment. Butler et al. hypothesized that exposure to work stress would be related to an increase in alcohol consumption among participants. The research team developed a survey for the purposes of their research study rather than using a pre-existing measure. This choice causes a weakness of this study, as the authors were not able to provide validity and reliability statistics of their instrument. Had they implemented a statistically supported measure, such as the AUDIT or Daily Drinking Questionnaire (DDQ), they would have gained stronger support for their findings.

Butler et al. (2010) discovered that as hours worked per week increased number of alcoholic drinks consumed also increased. The authors also reported that work stress was positively related to alcohol consumption. These findings are enlightening to the connection that stress and alcohol share. Students who work part time have additional stress placed on them because of the demands of both vocational and academic needs. These individuals must learn to balance these two spheres of their life in order to succeed. Butler et al. did not assess for financial stress (a vital component of work/school stress), thus opening the door for future research. This knowledge gap necessitates a study examining the impact of financial stress on alcohol consumption among college students.

Researchers have found support of the connection between stress and alcohol use. College students have been a major focus of research examining this connection. Kidorf and Lang (1999) found support of increased alcohol use in anticipation of a stressful experience (giving a public speech). In addition, Sadava and Pak (1993) discovered an increased perception of stress and stressful life events was associated with increased levels of alcohol use in college students. These two research findings help us to recognize the importance of stress in the lives of college students. Researchers have also found that experiences of perceived racism contribute to stress, which was in turn associated with increased use of alcohol among college students (Grekin, 2012). Grekin demonstrated the cross-cultural impact of stress on alcohol use. Butler et al. (2010) reported on the connection between vocational or work-related stress and the increase in alcohol use among college students, thereby opening the door for the connection between financial stress and alcohol use among college students. Despite these studies little research has focused on assessing stress in college students and presenting symptomology. Deepening our understanding of factors that contribute to stress in the lives of college students will allow treatments to target these areas of stress and hopefully provide students with alternative coping methods to alcohol use.

Purpose

The number of college students seeking mental health treatment for alcohol use problems is on the rise (45.7% increase over the last five years according to Gallagher, 2010). Due to the increased demand for services proper assessment and treatment planning is necessary. Previous empirical studies have demonstrated the connection between stress and alcohol use in a variety of contexts including family support (Wetherill, & Fromme, 2007) and financial stress (Peirce et al. 1996). First-generation status has also been examined in the context of academic

achievement (Aspelmeier, 2012); however, it has not been assessed as a predictor of alcohol use. Therefore, based upon the strong empirical evidence connecting stress with alcohol use among the college population, the purpose of the current study is to determine the contribution of three factors associated with stress among students (family distress, first-generation college status, and financial stress) on alcohol use. These factors have been examined individually among varying populations; however, to date there has not been an analysis conducted on all three variables in the context of alcohol use. Despite a lack of previous studies examining these three variables collectively, researchers have found a connection between stress and alcohol use. Furthermore assessment in the college counseling context has not been a focus of previous research efforts and as new assessment tools (AUDIT, CCAPS, and SDS) have been developed (in part due to the research efforts of the Center for Collegiate Mental Health/CCMH), now is the ideal opportunity to capture presenting stress in the college population. It is hoped that the results of this study will inform assessment practices and therapeutic interventions targeting students struggling with alcohol use.

Research Questions

The review of previous research has led to four research questions:

1. Does family distress as measured by the CCAPS-62 predict alcohol use (as measured by the AUDIT) in college students presenting for mental health treatment?
2. Does first-generational college status as measured by the SDS predict alcohol use (as measured by the AUDIT) in college students presenting for mental health treatment?
3. Does financial stress as measured by the SDS predict alcohol use (as measured by the AUDIT) in college students presenting for mental health treatment?

4. Does the combination of stressors (family distress, first-generation college status, and financial stress) significantly predict alcohol consumption among college students?

Hypothesis

Previous research efforts have demonstrated a positive relationship between stress and alcohol use (Peirce et al. 1996; Wetherill, & Fromme, 2007). Therefore it is hypothesized that family distress, first-generation college status, and financial stress will predict alcohol use among college students presenting for mental health treatment as assessed by the AUDIT. Despite the lack of previous research a directional hypothesis will be implemented as it is hypothesized that these variables will predict increasing levels of alcohol use among participants. The hypothesis was assessed using a hierarchical multiple regression analysis with predictor variables of CCAPS-62 scores on the family distress scale, SDS responses to first-generational college status, and SDS responses to financial stress. Alcohol use was assessed using AUDIT scores. Data was gathered from an existing archival set of responses of students who presented for mental health treatment at a large public university counseling center.

Chapter 2: Method

Mental health service providers and counseling center directors have recognized an increase in the number of students presenting with alcohol use problems (Gallagher, 2010). Researchers have demonstrated a connection between stress and alcohol use in a variety of contexts including family relationships (Wetherill, & Fromme, 2007) and financial stress (Peirce et al. 1996). Additionally, first-generation college status has been connected with academic achievement (Aspelmeier, 2012). Despite these connections there has not been an analysis of how these variables predict presenting alcohol use among the college population. Furthermore, assessment tools have been developed to capture these variables as part of the intake process for mental health treatment. Due to these factors the purpose of this study is to determine if family distress (as measured by CCAPS-62 scores), college first-generation status (as measured by SDS), and financial stress (as measured by SDS) predict alcohol use (as measured by the AUDIT) among college students presenting for mental health services. It is hypothesized that that family distress, first-generation college student status, and financial stress will predict increasing levels of alcohol use among the college student participants.

Design

The study is a between-subjects design, as scores among participants were compared to examine the predictive factors. There was no grouping variable, as one subject group was examined to create a predictive model of alcohol use. A quantitative descriptive design has been selected, as no manipulation of the independent variables will be utilized for this study. The data have been gathered as part of intake and assessment of all incoming students seeking mental health services at the university's counseling center. This design allowed the previously

gathered data to be further examined and to determine if presenting alcohol use is connected with the independent variables (family distress, first-generational college status, and financial stress).

A one-group quantitative descriptive, ex post facto design has been selected for this study. This design allowed exploration of previously gathered data examining the presenting symptomology of college students seeking mental health services. All data were gathered within college counseling centers and is labeled as field information. Consequently it will be subject to all advantages and disadvantages of descriptive field studies. Heppner, Wampold, and Kivlighan (2008) described descriptive field studies as possessing high evidence of external validity. The authors justified this description by sharing the advantages of doing work in a naturalistic setting as it offers an accurate depiction of what practitioners would experience when working with these individuals. Heppner et al. (2008) also reported that this causes a weakness in this design as little to no experimental manipulation reduces internal validity. When working in naturalistic settings there are many variables (e.g., environmental factors such as the culture of the counseling center) that are out of the experimenter's control. Despite limited evidence of internal validity this design is ideally suited to test the current hypotheses.

The use of a hierarchical multiple regression analysis allowed prediction of alcohol use risk based upon the impact of the three independent variables (or predictor variables). Pearson product moment correlations were conducted examining the relationship among predictor and outcome variables. Measures were given in a standard procedure via computer in the following order: SDS, CCAPS-62, and AUDIT. Students who seek mental health services are provided with these assessments to assist in the screening process. For the purposes of this study data were gathered from the Titanium Database of a college counseling center at a large public university. After all data was gathered hierarchical multiple regression analysis was conducted

to determine if family distress, first-generation college status, and financial stress are predictive of alcohol use levels as measured by the AUDIT. Data was analyzed using IBM SPSS statistical package.

Participants

For this study college students attending a large university (in the Appalachian region) who have sought services at the university's counseling center served as the participants. This population was selected due to the increased presentation of mental health concerns in college counseling centers and is considered a convenience sample (Gallagher, 2010). The college population at the large university is a unique composition of students. In the fall 2011 semester 29,617 total students were enrolled in the university. The student population of the large university consists of 47.7% female and 52.3% male students. The distribution of student ethnicity is as follows: 84.5% identified as Caucasian, 5.4% identified as international, 3.7% identified as African American/Black, 2.6% identified as Hispanic, 1.8% identified as Asian, <1.1% identified as American Indian/Alaskan Native, <1% identified as Native Hawaiian or other Pacific Islander, and 1.3% did not identify with an ethnic group (College Portrait, 2012). The participants selected for the current study were 1,714 individuals who presented for mental health treatment during the 2011-2012 academic year. Participants identified as 48.3% male, 48.9% female, and 1.8% preferred not to identify a gender. The ethnicity of participant was as follows: 83.4% Caucasian, 3.4% African American/Black, 2.3% Multiracial, 2.1% Asian American/Asian, 2.1% Hispanic/Latino/a, 0.3% American Indian/Alaska Native, 0.2% Native Hawaiian or Pacific Islander, 2.2% no response, 1.6% preferred not to answer, and 1.4% identified with another ethnicity.

The geographic distribution of students is as follows: 50% are from the state in which the study was conducted, 47% are from other US states and territories, and 3% are from other countries. There are many students attending the large university located in the Appalachian region from outside the state and provide a unique demographic (when compared to other large public universities such as Penn State university with 22% out of state students (Penn State University, 2013)). These students are often far from home and as a result might experience difficulty connecting with fellow students. Differential environments further contribute to the impact of stress on the college student population and influence the presenting mental health concerns of this population. Of the students enrolled in the university 25% live in campus-owned, campus-operated, or campus-affiliated housing and the remaining 75% of students live off-campus independently (U.S. News & World Report, 2013).

Information regarding financial aid status is germane to the current study as the impact of first-generation college status and financial stress are being examined as predictive factors of alcohol use. Of the students enrolled 78.5% applied for need-based financial aid and of those who applied 64.0% received financial aid. In addition, the average percent of student need (in dollars) was 75% of their requested amount. Therefore, a large proportion of students enrolled at the university are able to attend due to assistance from financial aid. Significant proportions of the student population attending the university have experience with the financial aid system and may experience stress related to finances as a result.

For the purposes of determining sample size a power analysis was conducted using the G*Power 3 statistical program (Erdfelder, Faul, & Buchner, 1996). Effect size was calculated as 0.15 because this is considered to be a medium effect size (Cohen, 1988). Previous research efforts have targeted a 0.15 effect size when examining alcohol use in the college population

(e.g., Hass et al., 2012). A power of .80 was utilized, as this number is consistent with previous research studies utilizing multiple regression analysis to examine alcohol use in college students (Grekin, 2012; Hass et al., 2012). The results of the G*Power 3 analysis found that a minimum of 120 participants are needed to complete the multiple regression analysis; however, I targeted as many students as possible for the purposes of this study in an effort to achieve data saturation. Approximately 2000 students were seen in the identified counseling center during the 2011-2012 academic year and I attempted to include as many of those students as possible for my study.

All students have reviewed informed consent, which highlights the use of de-identified data for training and research purposes. Information was gathered from initial intake of students seeking mental health services. This data is stored securely in the Titanium database at the college counseling center.

Independent (Predictor) Variables

The first independent variable of family distress is operationalized based upon previous research examining this construct. During the development of the CCAPS-62 the research team described family distress as an individual's perception of the functioning of one's family unit (Locke et al., 2011). The team gathered items that focused on the support and interaction among family members. In addition, researchers (e.g., Cleveland et al., 2012; Sareen & Kaur, 2012) have conceptualized family distress as a contributing factor to later alcohol use. These teams described family distress as experiences of one's network of support that impact mental health and wellbeing. Synthesizing these previous efforts, family distress was conceptualized as the perception or experience of negative interactions among family members that contribute to stress and life challenges. There is no experimental manipulation of the variables in this study. Therefore, and experimenter did interact with participants (as archival data will be used) and

integrity of the variable is assumed. Each participant is administered the same initial assessments via computer and is not asked or interviewed by staff to gather this information. This method of assessment ensures consistency of the family distress variable as it is being assessed via empirically supported questions on the CCAPS-62 (Locke et al., 2011). This variable was measured utilizing scores on the CCAPS-62 family distress scale. These scores are reported as standard z scores.

The second independent variable that was examined is first-generation college status. First-generation status has been described by previous researchers (Cho et al, 2008; York-Anderson & Bowman, 1991) as any college student who is the first in their family to attend college or university. It has also been conceptualized as any student attending college/university whose parents have not received a post high school education. Based upon these definitions first-generation college student status was operationalized as any individual who is the first of their family to attend a college or university. This item was assessed using the SDS, which asks first-generation college student status. As with family distress this variable is assessed at screening by electronic means, thereby no interaction between the experimenter and participant took place. This ensures the integrity of the variable of first-generation status. Because this is a dichotomous variable, dummy coding was implemented for the analyses.

The third and final independent variable was financial stress. Previous researchers have described this variable as the perception that monetary challenges impact current functioning in a negative way (Locke et al., 2011). Financial stress has been defined many different ways by researchers and practitioners. For the purposes of the current study this variable was operationally defined as the perception that current monetary resources are perceived to impact living conditions in a negative way. As with the previous variables this variable was assessed

using a question on the SDS. Participants have completed this question as part of their initial intake assessments and did not have interactions with the researcher. This variable was measured using a score of 0-4 on the SDS. Integrity of the variable was preserved, as there is no experimental manipulation or deception of participants. A potential confound of this variable is the individual's perception of financial hardship. Financial stress can range from not being able to pay for food to not being able to afford a luxury item (such as a large television). The college student population is learning the impact of financial decisions and will likely possess a new appreciation for monetary stability. It will fall to each individual's perception of financial stress to allow him or her to answer this question accurately. Most students presenting for mental health treatment were most concerned with receiving the best help possible. Answering demographic questions honestly and openly allowed them to receive the best help possible. This honesty may help to reduce the influence of this potential confounding variable.

Measures

Standard Data Set (SDS, Locke et al., July 1, 2012). The SDS is an instrument developed in tandem with the CCAPS-62 to assess demographic information of students seeking mental health treatment in college counseling centers. This tool is used in gathering relevant information regarding client demographics (e.g., age, sex, ethnicity, etc.). There are 64 potential items that can be selected by a counseling center to be included in the SDS. Some are optional while others are considered 'core items' and must be included in assessments. Item information is gathered with forced choice (both yes/no and Likert scale) as well as free response. Scores are not gathered from this assessment tool; rather demographic and background information is collected to assist service providers in proper assessment.

For the purposes of the current study two items were the focus of analysis. The first asks: “Are you the first-generation in your family to attend college?” with possible answers of yes or no. This question will be coded as 1 for *yes* (first-generation) and 0 for *no* (not first-generation). The second question asks: “How would you describe your financial situation right now?” There are five possible answers to this question: *Always stressful* (4), *Often stressful* (3), *Sometimes stressful* (2), *Rarely stressful* (1), and *Never stressful* (0). To ensure broader variability each of these answers will be coded from 0-4 depending on the participant’s response (*Always stressful* (4), *Often stressful* (3), *Sometimes stressful* (2), *Rarely stressful* (1), and *Never stressful* (0)). The purpose of this study was to determine if financial stress is predictive of alcohol use and this methodology allowed the most accurate depiction of the students’ financial stress (given the archival data available).

The SDS was developed by the Center for Collegiate Mental Health (CCMH), which is a research team based at Pennsylvania State University. This research team has gathered data from 97 colleges and universities to assist in refining the SDS. Information has been gathered on 66,000 students, which has allowed the researchers from CCMH to refine and drop items from this instrument. Several revisions have honed the SDS to allow the gathering of the most relevant clinical information regarding students presenting for mental health treatment. The most recent revision was published on July 1, 2012. These efforts have helped to bolster the evidence of validity and reliability of the items present in this tool. The SDS enables great flexibility for each counseling center to select or deselect particular items that are germane to their client population.

Counseling Center Assessment of Psychological Symptoms (CCAPS-62, Locke et al., December 2012). The CCAPS-62 was first released in June of 2009 with the most recent

revision occurring in 2012. The CCAPS-62 measures eight subscales of psychological symptoms: 1) Depression, 2) Generalized Anxiety, 3) Social Anxiety, 4) Academic Distress, 5) Eating Concerns, 6) Family Distress, 7) Hostility, and 8) Substance Use. A distress index is also assessed as part of the CCAPS-62; however, this is not considered to be a separate scale. The CCAPS-62 contains 62 items that assess these eight subscales. A short form of the CCAPS is also available, the CCAPS-34. The authors stated that the CCAPS-62 takes approximately 7-10 minutes to complete and should be completed at intake and termination. Family distress is defined by Locke et al. (2011) with the example item “My family is basically a happy one.” This subscale was designed to focus on the interactions and relationships between the client and his or her family. The authors conceptualized family distress to measure the perception of interaction among family members. Six items make up this subscale (Locke et al.).

Items are provided as forced choice Likert items ranging from 0 (*not at all like me*) to 4 (*extremely like me*). Scores on subscales and the distress scale increase as the presenting symptom severity increases. The CCAPS can be hand scored or scored via the Titanium Schedule software. Scores are presented as percentiles when utilizing the Titanium software. For the purposes of the current study Titanium software was utilized to calculate scores on the CCAPS-62 subscale of family distress. Cut-off points have been established for all subscales including family distress. There are both low and high cut-off points that have been established by the research team. The low cut-off score for the family distress scale is a raw score of $z = 0.98$, or 45th percentile. The elevated cut-off score for the family distress scales is a raw score of $z = 1.83$, or 70th percentile. Locke et al. (2011) suggested that cut off scores be utilized for descriptive purposes; however, I utilized final z scores as the measure of family distress. This approach ensured greater variability of scores.

McAleavey et al. (2010) have conducted studies to examine evidence of validity of the CCAPS-62. Concurrent validity was explored in 500 university students recruited from a psychology department subject pool. Participants were administered the CCAPS-62 and paired measures that focused on each of the eight subscales measured by the CCAPS-62. The family distress scale was compared to the Self-Report Family Inventory (SRFI), a 36-item inventory designed to assess an individual's perception of his or her family functioning along five dimensions: family/health competence, family conflict, family cohesion, family expressiveness, and direct leadership (Beavers, Hampson, & Hulgus, 1990). A correlation of 0.649 was found between the SFI and the Family Distress subscale of the CCAPS-62. Similar results were demonstrated for the other eight subscales and their comparisons to other measures.

Criterion-related validity was explored by Locke et al. (2011) by examining changes in treatment over time and evaluating client functioning. This was established by comparing changes in CCAPS scores across time in clients presenting for treatment in college counseling centers. Non-clinical participants were compared to clinical participants being treated for a variety of presenting concerns (e.g., depression and anxiety). Over time the authors of the CCAPS were able to capture change and improvement in symptomology. It appears that there is evidence that the CCAPS is sensitive to changes in symptomology and can help clinicians predict future performance.

Locke et al. (2011) also published results from examinations of cultural validity and internal consistency reliability. Locke et al. reported that internal consistency reliability scores across gender, ethnicity, and international status were similar across all groups with Cronbach's alpha scores ranging from 0.78 to 0.83 among: male, female, African-American, Asian-American, White, Latino/a, Multiracial, International, and US Born participants. George and

Mallery (2003) stated that these scores fall in the acceptable to good range of internal consistency scores. Locke et al. also examined test-retest reliability of the CCAPS. Participants were provided the CCAPS-62 at one-week and two-week intervals to assess for test-retest reliability. As with the internal consistency reliability all subscales were found to have acceptable to strong evidence of test-retest reliability. The family distress subscale was found to have a Pearson correlation of 0.914, which falls in the excellent range according to George and Mallery. Taken together there appears to be strong evidence of validity and reliability of the CCAPS-62.

Alcohol Use Disorders Identification Test (AUDIT, Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The AUDIT was developed by the World Health Organization as a screening tool to identify excessive or risky alcohol use patterns (Babor et al., 2001). Additionally, the AUDIT assists in identifying alcohol dependence symptoms as well as some specific consequences of harmful drinking (e.g., inability to perform tasks and memory loss). The AUDIT consists of 10 questions about recent alcohol use, alcohol dependence symptoms, and alcohol-related problems. Items are presented as forced choice Likert items ranging in score from 0 (least endorsement of an item) to 4 (most endorsement of an item). The individuals receive a score and fall into one of four categories of alcohol use, each of which has different recommendations for intervention. It was originally designed for use in health care; however, it has been adapted for use by non-health care workers as well as a method of self-administration.

Babor et al. (2001) stated that the AUDIT was developed and researched over a period of two decades. They reported that research has found the AUDIT to be an accurate measure across gender, age, and culture (Allen et al., 1997; Saunders et al., 1993). These findings lend evidence of validity and applicability in a wide range of contexts. Babor et al. credited the international

and domestic developers of the AUDIT because they used cross-national screening tools for problematic alcohol use as the basis for the instrument. The developers examined six countries (Norway, Australia, Kenya, Bulgaria, Mexico, and the United States of America) and then selected the most statistically significant items for the AUDIT. The developers also examined gender appropriateness and cross-national applicability when selecting items to ensure wide utility. Item selection was chosen to assist screeners in differentiating low-risk drinkers from high-risk drinkers in hopes of informing intervention and change strategies (Babor et al., 2001).

The AUDIT is scored on a scale from 0-40 and individuals fall into one of four risk levels: Zone 1 (score 0-7) alcohol education, Zone 2 (score 8-15) simple advice, Zone 3 (scores 16-19) simple advice plus brief counseling and continued monitoring, and Zone 4 (score 20-40) referral to specialist for diagnostic evaluation and treatment (Babor et al., 2001). When examining the norming sample the authors found that a cut-off score of 8 ensured optimal sensitivity (percentage of positive cases that the test correctly identified) and specificity (percentage of negative cases that the test correctly identified). These cut-off scores yielded sensitivities for the AUDIT for various indices of problematic drinking that were generally in the range of 0.90 in the samples used for test development. Additionally, specificities across countries and across criteria averaged in value at 0.80. Research findings have also indicated good sensitivity and specificity (slightly lower score) between AUDIT scores and ICD-10 alcohol use disorders (Allen et al., 1997). This result demonstrates evidence that the AUDIT has good construct validity (Babor et al.).

Many subpopulations have been examined to determine evidence of validity and reliability of the AUDIT. Primary care patients, emergency room patients, drug users, individuals who are unemployed, elderly hospital patients, persons of low socio-economic status,

and university students (e.g., Fleming, Barry, & MacDonald, 1991) have all been examined by researchers. A review of primary care patients found the AUDIT to be the most effective screening instrument when compared to other questionnaires such as the CAGE (5 Item questionnaire named for the questions asked) and the Michigan Alcohol Screening Test (MAST) (Fiellin, Carrington, & O'Connor, 2000). The AUDIT was also found to have a good correlation with these tests, demonstrating evidence of convergent validity. Convergent validity is described as the degree to which two constructs, or measures, which should be related to one another, are related to one another (Campbell & Fiske, 1959). For the purposes of this study I will focus on the applicability of the AUDIT in assessing college student alcohol use (Babor et al. 2001).

O'Hare and Sherrer (1999) examined the effectiveness of the AUDIT in screening alcohol use disorders among first time college alcohol use offenders (breaking university drinking rules) to examine the factor validity and internal consistency of the measure. The authors also examined the validity of the AUDIT by comparing the results with two measures designed for this population (The Drinking Context Scale and The College Alcohol Problem Scale). The authors found that the AUDIT was able to identify individuals suffering from alcohol use disorders as effectively as these other measures. This finding provides evidence for the validity of the AUDIT in screening for alcohol use problems in college students.

In addition to the work of O'Hare and Sherrer (1999), Kokotailo et al. (2004) examined the validity of the AUDIT as a screening tool for college students. The authors examined students who sought treatment at a health clinic on campus. These students were asked to complete the AUDIT as well as participate in a research interview in which they were asked to recall their alcohol use over the previous 28-days. Kokotailo et al. found that with an AUDIT cutoff score of 6 or greater, results demonstrated a sensitivity of 91.0% and a specificity of

60.0% in the detection of high-risk drinkers. The authors concluded that the AUDIT has strong psychometric properties when used to screen students seeking healthcare. More broadly the results found by Kokotailo et al. lend evidence to the validity of using the AUDIT to screen college students' alcohol use.

Several studies have been conducted examining the reliability of the AUDIT. The studies cited by Babor et al. (2001) have indicated that there is high internal consistency found within the AUDIT lending evidence that the measure is assessing a single construct reliably. Sinclair, McRee, and Babor, (1992) examined the two week test-retest reliability of the AUDIT. These authors found strong test-retest reliability (Persons r of 0.86) among their sample (consisting of non-hazardous drinkers, cocaine users, and individuals suffering from alcoholism) demonstrating that upon repeated administrations of the AUDIT participants scored consistently.

Ivis, Adlaf, and Rehm, (2000) examined the internal consistency reliability of the AUDIT. The authors manipulated question ordering and word choice of the items on the AUDIT to assess if these changes impacted the scores of the participants. Ivis et al. found that manipulation of these elements did not impact participants' scores on the AUDIT, helping give evidence to the internal consistency reliability of the AUDIT. This research team discovered that when giving the AUDIT administrators have some flexibility in the order with which they ask questions. This allows interventions and the focus of an interview to address each individual's needs. The AUDIT has been demonstrated by numerous studies to have strong validity and reliability. It has also been found to be applicable for the population which studied (college students) and has strong psychometric properties when used to screen this population. Based upon previous research I adhered to the guidelines of setting a cut-off score of 8 on the AUDIT to determine if participants are engaging in high-risk alcohol use or low-risk alcohol use.

Procedure

Procedures for data collection adhere to the guidelines set forth by the CCMH and Locke et al. (2012). All data for the study were gathered from archival data collected at initial intake at a college counseling center following approval of the center and IRB. Using Titanium software I generated three reports containing information from all students who presented for treatment during the 2011-2012 academic year. These report included responses on all screening assessments including CCAPS-62, SDS, and AUDIT. These reports were then sorted to assess for any students who did not respond to items that were needed for analysis in the current study. Then each report was assessed for which students completed all assessments necessary for the multiple regression analysis. Following this data cleaning a comprehensive report was generated which combined data from the CCAPS-62, SDS, and AUDIT for statistical analysis. Following this comprehensive report generation these reports were screened to determine which responses corresponded to the necessary questions (CCAPS-62 Family Distress scale, SDS financial stress and first-generation college student status, and AUDIT score). Finally this report was then used for the multiple regression analysis.

Each student who presents for mental health treatment at the counseling center is seen on a walk-in basis or by appointment. Clients are scheduled based upon their availability and the availability of staff. Students provide basic information about services requested (e.g., counseling services or ADHD screening) as well as their student identification number to be scheduled for an appointment. All students who are seen at the counseling center are asked to arrive thirty minutes early to complete initial paperwork. Students' first fill out a face sheet with their name, address, student ID, requested service(s), and available times for an appointment.

Additionally, students are provided information regarding informed consent and limitations of confidentiality (e.g., suicidal intent or abuse of a vulnerable person).

Students are provided a packet of information regarding informed consent and are encouraged to discuss informed consent with their service provider. The major topic areas of informed consent include: services provided by the counseling center, eligibility and fees for services, policies regarding appointments, emergency information, limits to confidentiality, professional records (treatment notes), technology (e.g., email)/communication and informed consent, and information regarding minors under the care of their parents. Students are also provided a notice of privacy practices by the counseling center, which includes a statement relevant to the completed study. The statement reads: “We may disclose health information to researchers when the university’s institutional review board has reviewed and approved the research proposal and established protocols to ensure the privacy of your health information. This information is generally de-identified.” My study would fall under this category, as it was conducted under the approval of the institutional review board. Additionally, this statement ensures that all participants in the proposed study have been provided information regarding informed consent. Furthermore, informed consent is discussed by the service provider who answers any questions students have. Each student must sign these documents and agree to have de-identified information included in research. Upon completion of these two documents students return these materials to the front desk staff and then complete three screening/assessment tools.

All students who present for mental health treatment complete the informed consent and face sheets with pencil and paper. Then each student is provided with a laptop computer (or desktop computer) to complete further assessments. Each assessment is presented electronically

following a prompt from the front desk staff. First the SDS is presented which assesses demographic and background information. Each question is presented sequentially and varies in potential answers from forced choice to free response (see Appendix A for SDS). Following completion of the SDS students are presented with the CCAPS-62 (the CCAPS-62 is presented in Appendix B). After completing the CCAPS-62 students are provided with the AUDIT (see APPENDIX C for AUDIT). Upon completion of each of these assessments, the student returns to the front desk staff to inform them he or she has completed the initial paperwork. The front desk staff then informs the mental health professional that the information has been completed and allows access to the assessments. The access is provided without the front desk staff reviewing the assessments, which ensures client confidentiality. Furthermore only the service provider and his or her supervisor/clinical director have access to this information.

Once the assessments have been completed the Titanium Software calculates the z scores for the CCAPS-62 (SDS and AUDIT are ordinal scores) and adds this information to the client file. Additionally, the score reports inform the reader of any questions that have not been completed. For the purposes of the completed study there is no other action needed from participants. As all data has been gathered, the next step is retrieval of the data from the Titanium Software. This program has the ability to de-identify client data and generate reports with requested information. Boswell et al. (2012) utilized this same methodology when examining the relationship between CCAPS and SDS data and depressive symptomology in college students. Following de-identification, the data was entered into a spreadsheet for easier data analysis. This process was conducted to capture all participants' data for the purposes of the multiple regression analysis. All data was gathered under the supervision of the director of the counseling center to ensure proper handling of sensitive client data.

After all data was gathered, correlational analyses was conducted to assess the relationship between each individual predictor variable and the dependent variable. Additionally other assumptions were examined including normally distributed errors (using a scatter plot to assess for any patterns of errors). Independence of errors was assessed using the Durbin-Watson test. Linearity was examined using a scatter plot of data to reveal the linear relationship among the predictor variables. Then all predictor variables were entered into a multiple regression analysis using IBM SPSS statistical software to generate a model which best represents the data. All results were shared with the staff of the counseling center to help improve practice and inform treatment. As no deception or client interaction has taken place there is no need for a post-study meeting with participants. The staff of the center was thanked for their assistance and was provided the results and final draft of the proposed study.

Analyses

All data were purged of identifying information prior to data analysis. Demographic information was gathered including gender, age, and ethnicity to ensure proper representation of the student body. Descriptive statistics including means and standard deviations were calculated to describe the participants of the study. Pearson's correlations were examined in each of the variables. This was conducted to ensure that is not a perfect linear relationship between two or more of the predictor variables (multicollinearity). This was conducted using variance inflation factor (VIF), a statistical test that assesses the linear relationship among the variables. Upon completion of these initial analyses the hypothesis was tested. If multicollinearity was present I would have obtained additional data as this has been described as the preferred method for removing multicollinearity (Field, 2009).

Hypothesis. Higher scores on the CCAPS-62 family distress index, first-generation college status and higher scores on the financial stress index will predict significantly higher scores on the AUDIT. This hypothesis was tested utilizing a step-wise multiple regression analysis. Step-wise regression allowed me to enter predictor variables to assess for the contribution to R^2 value (or fraction of variance explained by the variable). A predictive model was generated to assess if these three independent variables predict alcohol use as measured by the AUDIT.

Each variable was entered in a step-wise manner allowing statistical decisions to inform the method of entry. The forward method of step-wise entry was employed in which each predictor is entered and the model is assessed after each entry. Following data analysis, the results are discussed regarding implications for science and practice (Field, 2009).

Chapter 3: Results

The descriptive statistics of the participants sampled who presented for mental health treatment during the 2011-2012 academic year will first be reported. There was a total sample size of 1,777 participants whose data were originally gathered for this study. Of the original responses 1,714 participants' responses were included, as they had completed each measure needed for analysis. This number was selected as they presented valid responses on all measures gathered at the time of presentation (AUDIT scores, family distress scores, financial distress response, and first-generation college student status). Table 1 displays the demographics of the sample.

Table 1

Demographics

Variable	Number of Participants	Percentage
Gender		
Male	827	48.3
Female	839	48.9
Preferred Not To answer	48	1.8
Ethnicity Self-Identify		
Caucasian/White	1429	83.4
African American/Black	58	3.4
Multiracial	39	2.3
Asian American/Asian	35	2.1
Hispanic/Latino/a	34	2.1
American Indian or Alaskan Native	5	0.3
Native Hawaiian or Pacific Islander	3	0.2
No Response	38	2.2
Preferred Not To Answer	27	1.6
Other Ethnicity	24	1.4
Year in School		
First Year	504	29.40
Second Year	398	23.24
Third Year	314	18.28
Fourth Year	288	16.79
Graduate Year	202	11.76
Non Degree Seeking	8	0.51

The average age of the participants was 20.34 years, ranging from 17.34 years to 79.06 years. Of all participants the average GPA was 3.16. Examining AUDIT scores, the mean score was 7.11 with a standard deviation of 5.91. Students who identified as first-generation composed 23.82 percent of the sample while 76.21 percent identified as non-first generation college students. The mean for family distress scores was 46.90 with a standard deviation of 10.06. The frequency of financial stress is presented in Table 2.

Table 2

Financial Stress

Financial Stress Rating	Number of Participants	Percentage of Participants
Never stressful	76	6.9%
Rarely stressful	338	19.4%
Sometimes stressful	699	40.2%
Often stressful	369	21.2%
Always stressful	232	13.3%

To assess for normality of the distribution of scores on the AUDIT both the Kolmogorov-Smirnov and Shapiro-Wilk tests were performed, and a histogram of residual errors was generated. Figure 1 displays the results of the residual errors histogram which compares the observed variance in AUDIT scores with those of a normal distribution. Standard z scores are depicted on the x axis with frequency depicted on the y axis. The results of the Kolmogorov-Smirnov test were significant ($p < .05$) and the results from the Shapiro-Wilk test were also significant ($p < .005$). These findings indicate that the sample selected may be significantly different from a normal distribution; however, as Field (2009) indicated with large sample sizes,

such as this sample ($n = 1,714$), it is very common to find significant results among small deviations from normality. Furthermore, with this large sample size Field indicated that with small differences it is unlikely that the deviation from normality will significantly impact the statistical analyses. When examining the standardized residual errors histogram there continues to be challenges to the assumption of normality.

Figure 1: Standardized Residual Histogram

The results of the histogram indicate the possibility of positive skew among the standardized residual errors. This may lead to the possibility that this sample of individuals is not normally

distributed. Again as Field (2009) indicated these findings are not uncommon when examining large sample sizes. The Q-Q plot, or standardized residual errors mirrors the findings of the histogram.

Figure 2: Normal Q-Q Plot of Standardized Residual

The normal Q-Q plot also shows that the line of observed values often deviates from those expected in a normal distribution. The circles represent scores on the AUDIT while the line represents expected scores on a normal distribution. Figure 1 and 2 were included to further clarify the distribution of the dependent variable (AUDIT) scores as the interpretation of these

scores is vital to the current study. While the sample of participants may differ from normality these findings are not uncommon when examining large sample sizes.

Given these findings a log base 10 transformation was conducted. This allowed the data to approach a normal distribution; however, the data still failed the Kolmogorov-Smirnov and Shapiro-Wilk tests of normality. Additionally, less of the explained variance was found after this transformation. An examination of correlations among the predictor variables is also necessary to ensure that these variables are not related and potentially measuring the same constructs.

Table 3

<i>Correlations</i>		AUDIT	Family Distress	Generation	RS	SS	OS	AS
Pearson Correlation	AUDITSCORE	1.000						
	Family Distress T Score	.043	1.000					
	Generation	-.045	.173	1.000				
	RS	-.043	-.141	-.105	1.000			
	SS	.001	-.078	-.074	-.403	1.000		
	OS	.017	.091	.087	-.255	-.427	1.000	
	AS	.041	.244	.158	-.191	-.320	-.203	1.000
	AUDIT	.	.037	.032	.037	.483	.239	.043
	Family Distress	.037	.	.000	.000	.001	.000	.000
	Generation	.032	.000	.	.000	.001	.000	.000
Sig. (1- tailed)	RS	.037	.000	.000	.	.000	.000	.000
	SS	.483	.001	.001	.000	.	.000	.000
	OS	.239	.000	.000	.000	.000	.	.000
	AS	.043	.000	.000	.000	.000	.000	.

Note. AUDIT= AUDIT Score, Generation = First-generation status 1(First) 0 (non-First),

RS=Rarely Stressful, SS= Sometimes Stressful, OS=Often Stressful, AS= Always Stressful.

Examining the correlations between variables there are not any statistically significant correlations among predictors, therefore reducing the likelihood of multicollinearity. According to Field (2009) any correlation above ($r > .9$) would be cause for concern. Furthermore, following Field's guidelines the VIF (see Table 4) is well below 10 and is not below 0.1 or 0.2 all of which would indicate that the assumption of multicollinearity has been violated.

Table 4

<i>Coefficients</i>								
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	5.884	.863	6.816	.000			
	Family Distress	.022	.015	.037	1.442	.149	.897	1.114
	Generation	-.870	.344	-.063	-2.528	.012	.944	1.059
	RS	-.111	.673	-.007	-.165	.869	.286	3.494
	SS	.420	.633	.035	.663	.507	.210	4.753
	OS	.645	.674	.045	.957	.339	.267	3.744
	AS	1.069	.730	.061	1.466	.143	.333	3.000

a. Dependent Variable: AUDITSCORE

Note. Generation = First-generation status 1(First) 0 (non-First), RS=Rarely Stressful, SS= Sometimes Stressful, OS=Often Stressful, AS= Always Stressful.

Following the testing for assumptions of normality a hierarchical multiple regression analysis was conducted to examine the impact of the three predictor variables on AUDIT scores in the sample selected.

Hypothesis

Higher scores on the CCAPS-62 family distress index, first-generation college status and higher scores on the financial stress index will significantly predict higher scores on the AUDIT. Initially a step-wise multiple regression analysis had been proposed. This method would allow

the entry of each variable according to research and evidence that had supported its use.

However, when attempting this method the generated model did not include the variables and was not statistically significant. Therefore, use of forced entry was implemented to allow for interpretable results. The model generated by forced entry of the three predictor variables was found to be significant at the ($p < .05$) level; however, the amount of explained variance (R^2) is extremely small and not helpful in the larger generalization of the findings. Examining the model summary (Figure 5) R^2 only accounts for .8 of a percent of the variance in AUDIT scores and the adjusted R^2 only accounts for .5 of a percent.

Table 5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.090 ^a	.008	.005	5.900	1.202
a. Predictors: (Constant), AlwaysStressful, FirstGenerationStatus1FirstGeneration0NonFirstGener, RarelyStressful, FamilyDistressTScore, OftenStressful, SometimesStressful					
b. Dependent Variable: AUDITSCORE					

While the model was found to be statistically significant this is likely to have occurred due to the large sample size.

Table 6

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	482.001	6	80.334	2.308	.032 ^a
	Residual	59411.586	1707	34.805		
	Total	59893.587	1713			

a. Dependent Variable: AUDITSCORE

Despite the lack of strong results, information has been gathered that is helpful in predicting alcohol use among students presenting for mental health services. Examining the *b*-values (see Table 6) it appears that first-generation status was predictive of lower alcohol use (as the *b*-value is negative); therefore being a first-generation student predicted lower AUDIT scores. The difference observed should be interpreted with caution as only a small amount of variance was explained in the results.

Table 7

<i>Coefficients</i>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.884	.863		6.816	.000
FamilyDistress	.022	.015	.037	1.442	.149
Generation	-.870	.344	-.063	-2.528	.012
1 RS	-.111	.673	-.007	-.165	.869
SS	.420	.633	.035	.663	.507
OS	.645	.674	.045	.957	.339
AS	1.069	.730	.061	1.466	.143

a. Dependent Variable: AUDITSCORE

Note. AUDIT= AUDIT Score, Generation = First-generation status 1(First) 0 (non-First), RS=Rarely Stressful, SS= Sometimes Stressful, OS=Often Stressful, AS= Always Stressful.

First-generation status was also the only predictor variable found to be statistically significant. While the model obtained was statistically significant the model is not able to account for a large amount of variance in the predictor variable. This challenges the ability to generalize findings. However, despite this finding other important information was gathered that will be explored in the discussion chapter of this dissertation.

Chapter 4: Discussion

The purpose of this study was to determine if family distress (as measured by the Counseling Center Assessment of Psychological Symptoms (CCAPS-62) scores), first-generation college status (as measured by the Standardized Data Set (SDS)), and financial stress (as measured by the SDS) predict alcohol use (as measured by the Alcohol Use Disorders Identification Test (AUDIT)) among college students presenting for mental health services. By assessing these factors it is possible to assist students by screening predictors of alcohol use and intervene early to prevent long-term problems. A step-wise multiple regression was originally proposed as the method for analyzing the three predictor variables on alcohol use in the sample of students; however, utilizing this method did not produce a statistically significant model, thus forced entry was utilized. This approach allows for discussion and interpretation of that analysis.

Hypothesis

It was hypothesized that higher scores on the CCAPS-62 family distress index, first-generation college status, and higher scores on the financial stress index would significantly predict higher scores on the AUDIT. This hypothesis was tested utilizing a forced entry multiple regression analysis. A predictive model was generated to assess if these three independent variables predict alcohol use as measured by the AUDIT. The model that was generated predicted a very small, statistically non-significant amount of the variance in alcohol use (0.8%) in the college student sample. However, one variable, first generation college status, was significantly related to alcohol use.

It was predicted that being a first-generation college student would predict higher rates of alcohol use among the participants of the study. It was revealed that first-generation college student status was statistically significantly predictive of alcohol use among the participants of

the study in the opposite direction. However, this was a small negative correlation. When comparing the mean score of number of drinks on the AUDIT of first-generation college students (1.26, SD = 1.13) to the mean of non-first-generation college students (1.34, SD = 1.08) there is very little difference. Each of these scores represent students endorsing that they use between 3 or 4 drinks (score of 1) and 5 or 6 drinks (score of 2) per drinking occasion. The first-generation students had a slightly lower average alcohol use amount than non-first-generation students. However, because both scores are close to “1”, which represents a range, it cannot be determined with accuracy whether there is any actual difference in number of drinks consumed by first, versus later generation students. While these results were not what was predicted they warrant further discussion and exploration.

York-Anderson and Bowman (1991) compared the support experienced by first-generation and non-first-generation college students as a means of predicting college retention and success. While this study did not focus specifically on alcohol use the researchers did discover that students who perceived more support from parents possessed more factual knowledge and performed better in school. Many first-generation college students do not have the opportunity to learn from their parents’ experiences in college because they have not had the chance to attend an institution of higher learning. This hypothesis was based on the assumption that parental attitudes about alcohol use are negative and prohibitive of their child’s use of alcohol. Parents do not always express negative attitudes about alcohol use and instead might look fondly on their experiences with alcohol use in college. Glanton and Wulfert (2013) found support for the hypothesis that increased parental alcohol use and positive parental attitudes towards alcohol were predictive of alcohol use among college students. They also discovered that these experiences altered participants’ cognitions about alcohol and lead to less drink refusal

and increased alcohol consumption. Additional researchers have explored the connection between parental attitudes about alcohol and alcohol use in young adults (Cleveland et al., 2012).

Cleveland et al. (2012) not only discovered that engagement in positive activities with parents and family reduced alcohol use in young adults, the researchers also found that parents' positive attitudes about alcohol use were correlated with higher levels of alcohol use in the participants of their study. Many parents who attended college experimented with drugs and alcohol and may inadvertently communicate those stories to their children. First-generation college students will not receive these same messages from their parents. However, it is possible that they receive these messages from other sources (e.g., media, friends, other mentors). As Cleveland et al. demonstrated, positive parental attitudes towards alcohol use impact their children's alcohol use when attending an institution of higher learning. First-generation college students may not have these experiences, potentially explaining the results obtained in the current study.

Parents who attended college also understand the culture and experiences associated with college life. With the best of intentions these same individuals want to protect their children and share the stories of their experiences using alcohol in college. To protect their children parents often likely try to reduce harmful or risky drinking, whereas parents of first-generation students do not have these same experiences. Abar et al. (2012) examined the relationship between parental messages and alcohol use in college students. The researchers discovered that harm-reduction messages were associated with higher levels of alcohol use than zero-tolerance messages from parents. It is critical that parents are careful in their communication with their children not to normalize problematic alcohol use. A parent may want to reduce her or his child's alcohol use in college by using their own experience and communicating ideas such as

‘be safe and only drink in moderation’ because of their experiences in college. This may place their children at increased risk of damaging alcohol use, whereas parents who abide by abstinence do not share these same risks. First-generation college students may not have these conversations with their parents and not experience the normalization of alcohol use that non-first-generation college students may experience. It is vital that parents work to support and protect their college age children rather than minimize the hazards they face. Parents of first-generation college students may have recognized this factor and adapted their communication with their children (Abar et al.). First-generation college students also experience differences in their cultural beliefs, which may further clarify the results obtained in the current study.

Stephens et al. (2012) hypothesized that a cultural mismatch occurs when first-generation college students leave their home culture and pursue higher education. While their study focused on academic achievement the underlying themes are revealing to the current discussion. Stephens et al. found that there was indeed a cultural discrepancy between values that are supported in colleges and universities and the values of the participants’ families. The cultural differences were that colleges and universities focused on independence and self-sufficiency whereas the participants identified with interdependence and support. It is possible that first-generation college students also do not identify with the culture on campus that embraces drinking alcohol and partying. The current results may further reflect the unique cultural perspective held by first-generation college students that protects them from making harmful decisions about alcohol use. Researchers have also examined the unique experiences of first-generation college students that may further illuminate the results of the current study (Wang, 2012).

Wang (2012) focused on examining the messages received by first-generation college students from mentors and their families. The themes that were identified by these students were: 1) pursuing academic success, 2) valuing school, 3) increasing future potential, 4) making decisions, and 5) support and encouragement. These messages all may serve as protective factors against damaging alcohol use for these individuals. Additionally, these messages connect with the cultural values of first-generation college students that foster success and hard work. These concepts support critical thinking and a future orientation in which students are making decisions (e.g., not consuming large quantities of alcohol) and are instead focusing on their academic futures. In addition to the work of Wang, others have examined the unique experiences of first-generation college students (Bryan & Simmons, 2009).

Bryan and Simmons (2009) qualitatively interviewed 10 first-generation, Appalachian Kentucky university students for factors that they attributed to their academic success. This study is particularly relevant to the current discussion as the university where this study was conducted is situated in Appalachia and many first-generation college students at the university identify with the values and beliefs of this culture. Seven themes emerged from the responses of the participants: 1) close-knit families and communities, 2) separate identities, 3) knowledge of college procedures, 4) pressure to succeed, 5) returning home, 6) the pervasiveness of poverty, and 7) the importance of early intervention programming. These factors are core to the beliefs and experiences of first-generation college students and allowed this sample to succeed in their college career. A potential explanation for the lower rates of alcohol use among the first-generation participants in the current study is the beliefs and messages that were instilled in them by their families and mentors. While not in the expected direction the results of the current study help us to gain a deeper understanding of alcohol use in both first-generation and non-first-

generation college students. The results of family distress, while not significant, warrant discussion as well.

It was discovered that family distress was not significantly predictive of alcohol use in the sample selected for this study. This finding is contrary to previous research that has been conducted examining the relationship between family relationships and alcohol use. Cleveland et al. (2012) found that during adolescence there is a decrease in positive interactions between family members (family protection) and an increase in alcohol use. While these two findings may not be causally related it seems likely that these young adults did not receive the support and care from a strong relationship with a parent. Family distress can be considered the inverse of family protection; therefore a logical extension of this concept would be that as family distress increases similar results to decreases in family protection would be observed. However, the findings of the current study do not support this idea and it appears that with the sample selected there is not a strong relationship between family distress and alcohol use. These results can possibly be attributed to the unique sample selected (students who presented for mental health services during the 2011-2012 academic year) or the lack of a strong relationship between self-reported family distress and alcohol use in college students. Cleveland et al. were not the only researchers to examine the relationship of family factors and alcohol use (Wetherill & Fromme, 2007).

Wetherill and Fromme (2007) examined the importance of perceptions of parental caring on initiation and quantity of alcohol use in high school seniors and college freshmen. The researchers discovered that alcohol use was predicted by perceived awareness of caring by parents and that participants who perceived stronger parental care were less likely to use alcohol or would consume less alcohol than participants who did not perceive care from their parents.

Wetherill and Fromme demonstrated that the relationship that college students have with their parents influences the choices that they make regarding alcohol use. Additionally, Chaplin et al. (2012) found that lower parental support and structure were related to higher levels of alcohol use among adolescents. The results of the current study failed to replicate these findings when examining the relationship between family distress and alcohol use. These results may be explained by the fact that family distress and perceived parental care are not mutually exclusive. A college student may have experienced significant family turmoil (e.g., conflict among parents) while growing up and also experienced strong support from one or both of his or her parents. Additionally, other supportive factors may influence these young adults such as a caring teacher or supportive friend. Another possible explanation is that the genetic and biological factors associated with alcohol use, which I will now explore, have a stronger correlation with college student alcohol use than environmental factors (i.e., family distress).

One of the strongest predictors of alcohol use is a family history of alcohol abuse or misuse. Strong research evidence has been gathered to support this conclusion. LaBrie et al. (2010) found that a parental history of alcohol abuse predicted problematic drinking among college students. In addition, Chen et al. (2012) discovered that the brain's response (the dopaminergic system) to alcohol varies based upon biological markers. Chen et al. utilized gene mapping to determine dopaminergic (reward) responses in college students when presented with alcohol. The research team found that the participants of their study that experienced stronger dopamine responses to alcohol were more likely to drink larger quantities of alcohol and engage in more dangerous behaviors. The researchers emphasized that biological inheritance determines the amount of dopamine that is released when presented with a stimulus. Both of these research

teams (Chen et al. and Labrie et al.) presented strong evidence of the genetic and biological factors that influence alcohol use as well as the influence that these factors have on behavior.

The results of the current study warrant a moment of reflection that assessing family distress may not be as effective at predicting alcohol use in college students as family history of alcohol use. As psychology continues to examine both the environmental and biological bases of behavior the current results did not support the importance of family distress as predictive of alcohol use among college students. Family distress may explain alternative behaviors or be better predictive of other areas of study (e.g., child temperament, responses to stress, or conflict styles). While these results may appear disappointing given the initial hypothesis, this is yet another variable that may be removed as a possible factor contributing to alcohol use in the current sample under study. It is also possible that the unique student population (presenting for mental health treatment during the 2011-2012 academic year) selected for study does not demonstrate this factor and students from other universities or colleges might produce different results. In addition to family distress, financial stress was also examined as a predictor of alcohol use in the current study.

Financial stress is a major presenting concern and struggle for some students who attend universities and colleges. Due to the significant pressure exerted by stress, finding methods of coping with that stress is necessary to continue to meet daily obligations. For some college students a method of coping with stress is often relaxing and possibly engaging in social alcohol use with friends. College students often turn to alcohol use as a method of coping with stress, potentially caused by financial or educational demands. Shimotsu et al. (2012) examined the relationship between socioeconomic status (SES) and alcohol consumption. This research team discovered that SES has a relationship with alcohol consumption more strongly for those who

have a lower household income. It was hypothesized that students experiencing financial stress would turn to alcohol as a method of coping with their reactions to their environment. The results of the current analysis did not support that hypothesis. Again, this may be attributed to the unique sample selected for this study or it is possible that financial stress is not as directly related to alcohol consumption as once thought. Additionally, the students included in the current study presented for mental health treatment at a college counseling center and may not accurately represent the student body of the university that was examined.

Shimotsu et al. (2012) also explored the concept of health behaviors as related to SES. It is possible that SES is more directly related to health behaviors than alcohol use as measured by the AUDIT. Assessment of this relationship may have produced significant results as opposed to simply focusing on alcohol use. Furthermore, the variable of financial stress, as measured by a single question on the SDS, may not have accurately captured the complex concept of low SES (a multifaceted social construct). In addition to Shimotsu et al., other researchers have found support of the connection between alcohol use and socioeconomic status (Pierce et al., 1996).

Pierce et al. (1996) examined the connection between financial stress, social support, and alcohol involvement. The researchers discovered support for their hypothesis that financial stress was related to alcohol use among the participants. The construct of financial stress was defined similarly in both studies (Pierce et al. and the current study); however, it was measured differently. Pierce et al. measured financial distress using a five-item measure developed by Pearlin et al. (1981) as well as five items gathered from the Psychiatric Epidemiologic Research Inventory Life Events Scale (Dohrenwend et al., 1978). These ten items were selected to fully capture financial stress in the sample selected by Pierce et al. In the current study only one item was utilized to capture financial stress, which asked students to rate their stress on a scale from

no financial stress to always experiencing financial stress. By utilizing more extensive measures and items Pierce et al. may have captured the construct of financial stress more completely than only using a single item. This discrepancy might have contributed to the differing results found in the current study. Despite the lack of significant results in both the family distress and financial stress, first-generation college student status was found to be a significant factor in predicting alcohol use.

Limitations

The results obtained in the current study must be considered given the limitations. Firstly, this study was designed to gather data on three predictor variables that have not been studied together. Family support and first-generational college student status have been examined in the context of alcohol use among college students (Peirce et al. 1996; Wetherill & Fromme, 2007); however, financial stress has not been studied as a predictor of alcohol use in college students. Financial stress has been evaluated as a predictor of academic achievement, which is a distinct variable from alcohol use. Previous researchers have not examined financial stress and the impact of this variable on alcohol use directly; therefore a strong theoretical foundation has not yet been established examining this variable.

Multiple regression analysis was implemented for the current study and a strong theoretical foundation is key to selecting proper predictor variables. As Field (2009) has suggested, multiple regression is useful when examining predictor variables similar to those used in the current study; however, Field also suggested that these variables have a strong theoretical rationale for their inclusion in the analysis. Field explained that the importance of theoretical rationale for variable selection is that this method ensures that clinical and evidence-based practice informs variable selection. For example, surveying college counseling center therapists

to assess which variables impacted alcohol use for their clients may have potentially produced different variables for the current study. The lack of a strong theoretical basis for including financial stress as a predictor variable may have limited the current study.

The data gathered for this study were drawn from archival screenings of students seeking mental health services during the 2011-2012 academic year. Utilizing archival data opens up many limitations to the current study. Firstly, archival data does not allow for changes and reassessments of participants. The data has already been gathered and the limitations of that data (e.g., missed responses, unclear answers) become part of further analysis. If data had been gathered currently these participants could have been approached to finalize or clarify their responses. It is possible that those who did not respond or complete these assessments did so in a systematic way, which was not controlled for. It is hoped that with the small percentage of excluded cases these participants did not unduly influence the outcome of this study. Additionally, archival data prevents the ability to obtain additional data from participants to further assess the variables under study.

The use of archival data also does not allow for control of how information was gathered and sorted. Responses to CCAPS-62 and SDS were gathered via computer as part of standard screening and assessment procedures. All students who presented for mental health treatment were handed a laptop computer or were directed to a computer to complete these assessments. This method of assessment does not allow for interaction with participants, which allows for uniform assessment; however, these students are also not allowed to ask follow up questions about items. It is possible that participants were unclear of what some screening questions were asking and could not ask for clarification. This may have impacted the findings obtained in the current study. Despite this limitation the use of these instruments by CCMH (Locke et al., 2012)

has been widely supported and was the most efficient method for gathering the quantity of data used for this study. Locke et al. have also supported computer administration of these assessments, as it allows for uniform gathering of large amounts of data in a short period of time.

The current study did not involve random assignment of the independent variables or experimental manipulation. As Heppner et al. (2008) have reported, this produces limitations and weaknesses in data gathered as it is impossible to attribute causal findings to the independent variables. This lack of a causal connection limits the internal validity of the current study.

While this study implemented a quasi-experimental design the conclusions drawn must consider these limitations. It is possible that the differences observed in alcohol use were not attributed to the predictor variables but instead to alternative explanations. The lack of a strong correlation between the predictor variables limits the likelihood of confounding variables in the current study; however, it does not eliminate the possibility of their influence on the findings obtained.

A potential confounding variable in the current study involved the overlap between financial stress, first-generation college status, and alcohol use. For example, Jenkins et al. (2013) discovered that first-generation college students reported lower social support, higher rates of depression, and lower life satisfaction than their non-first-generation peers. As Jenkins et al. demonstrated, first-generation college students may be influenced by a life stressor variable that may have impacted the results obtained in the current study. Jenkins et al. also found that students perceived less support from their families. These findings cause another potential confounding variable to emerge in the current study, namely perceived familial support. This variable may have influenced the relationship between family distress and first-generation college student status.

The findings of the current study also must be considered in their ability to be generalized to other settings and populations. The participants of the current study were gathered from all students who presented for mental health treatment at a large university counseling center during the 2011-2012 academic year. This sample is a specific subset of the population of the university, thus limiting the ability of these findings to be generalized to the larger student population. Groeschel et al. (2012) and Wimer and Levant (2011) both examined the help seeking behaviors of college students and found that the male students who presented for mental health services varied on many aspects of personality and values (e.g., masculinity) when compared to those who did not seek services. Therefore, the sample may vary in distinct ways from the general college population of the university. Not only do these students present a unique sample of the population, they may not have reported their alcohol use as accurately as possible.

Lowinger (2012) discovered that many students minimize their reported alcohol use and do not accurately represent their average use. The sample of students who were utilized in the current study may have also minimized their use, potentially limiting the ability of these results to be generalized. All data that were gathered for the current study represent self-reports, which is often not as accurate as observable data (e.g., recording the number of alcoholic beverages consumed by participants in a single night). Boca and Darkes (2003) reported that the accuracy of self-reported alcohol use varies among many different populations and among many different contexts. This further may limit the generalizability and accuracy of measurement in the current study.

The measurements implemented in the current study are widely utilized in similar studies (e.g., Locke et al., 2012); however, it is possible that alternative measures would have more

accurately captured the variables of this study. For example, Pierce et al. (1996) utilized ten items to assess for financial stress whereas the current study only used one. This may have limited the ability for the variable of financial distress to be accurately captured by a single item on the SDS. This single item was utilized as it is the only measure of financial stress that was completed by students presenting for mental health treatment.

Finally, statistical limitations must be considered as well. The model generated by the multiple regression analysis was found to be statistically significant. Only 0.8% of the variance in alcohol use was explained by family distress, first-generation college student status, and financial stress. When examining the larger student population this significantly limits the amount of information that can be helpful in screening students for problems with alcohol use. Of the three predictor variables only first-generation college student status was found to be statistically significant in the analysis. Additionally, the assumption of normality of the distribution was also problematic in the current study. A positive skew as well as violations of normality tests were present in the current study. As previously mentioned, violation of the assumption of normality causes the findings of the current study to be limited in their generalizability as well as the conclusions drawn from the data. As Field (2009) has noted, violations of the normality assumption are common when examining large sample sizes such as the sample in the current study.

Strengths

While limitations are present in the current study, several areas of strength are present as well. A large sample size was used for the current study, which assessed all students who presented for mental health services for an entire academic year. Using this number of participants limits the risk of sampling errors. Additionally, the larger sample size increases the

power available in statistical analysis and produces a larger picture of the variables being assessed. Furthermore, only 63 participants' responses were eliminated because they did not complete data for all the assessments that were provided (CCAPS-62 and SDS). This is a relatively small percentage (3.5%), allowing for optimal inclusion of as many participants as possible. In addition, all assessments were administered by computer in a standardized fashion, increasing the evidence of validity of the information gathered. Similar techniques have been supported in research conducted by CCMH (Locke et al., 2012) and adhere to the recommendations of these instruments. The assessment tools have also received widespread support and use in research with the college population (Locke et al.).

The current study was the first to examine family distress, first-generation college status, and financial stress as predictors of alcohol use. It is hoped that this exploration will open the door to future investigations that will examine how to protect college students from the damaging effects of alcohol use. While the results were not as expected, first-generation college status was found to be negatively predictive of alcohol use, which can inform future policies and procedures on college and university campuses pending replication of these findings.

Future Directions

Problematic alcohol use among college students is an ever-present risk on campuses nationwide (Gallagher, 2010). This problem must be addressed to allow young adults to pursue their academic and career goals. The current study sought to examine factors that might be predictive of alcohol use among students presenting for mental health treatment at a college counseling center. The results obtained, while not as predicted, open the door to future research assessing both the protective and risk factors associated with alcohol use among college students. The data gathered from the current study were obtained from a large university's counseling

center for the 2011-2012 academic year. Future studies might explore different university counseling centers' data as well as more recent samples (e.g., the 2013-2014 academic year). These other institutions and time periods might produce findings that differ from the current results obtained. Each college and university offers a unique perspective and gathered together will allow for interventions that can combat problematic alcohol consumption. Measuring these variables with different data sets may also confirm if these results were unique to the university that was examined or are common patterns experienced in other college counseling centers.

The data used for the current study were gathered from a university of approximately 30,000 students (College Portrait, 2012) located in the Appalachian region. Including other colleges and universities of differing sizes and locations will allow for a more complete understanding of the factors being examined. The alcohol use profile of a student who attends a small private college in California may differ widely from a student at a large university located in Appalachia, for example. Additionally, the sports programs are a large part of the culture of the university that was studied, which may not be present at other colleges or universities. Researchers have found mixed results regarding alcohol use by fans and non-fans of college sports teams. For example, Nelson and Wechsler (2003) discovered that college student sports fans were more likely to report problematic alcohol use and alcohol related consequences than nonfans. Conversely, End et al. (2009) found no difference in alcohol use between college fans and nonfans. The work of these research teams demonstrated the variability among colleges and universities with regard to alcohol use. Each college and university presents a unique cultural and environmental context when examining alcohol use among the student population; therefore, future research is needed to assess how these factors may be expressed in students from other university contexts.

Future studies might also examine the alcohol consumption of not only students who present at college counseling centers but a sample of all students on campus. For example, asking for student participation as part of research requirements might present different results from those obtained in the current study. As Groeschel et al. (2012) and Wimer and Levant (2011) found, students who seek help differ from those who do not seek help. This difference may translate to alcohol consumption. Future studies examining the larger student population may find support for the predictive nature of the variables examined in the current study. In addition, other patterns or factors may emerge that would benefit the larger student population that would not have been discovered when examining students who are seeking mental health treatment.

To further assess college student alcohol use a qualitative study may also assist in clarifying helpful interventions for students. While not conducted in the current study, asking students about their alcohol use and eliciting reasons for use would also be beneficial. Simply focusing on screening questions limited the current study. A thorough qualitative analysis including interviews with college students might produce results and factors that had not been considered here. Additionally, interviews with administrators and policy makers on campus would offer insights into current practices. Furthermore, a current assessment of existing interventions would allow for universities/colleges to brainstorm and collaborate ensuring a bright future for their students. In order for mental health professionals and college administrators to impact the problem of alcohol consumption we must work together and learn from each other.

The result obtained in the current study regarding the small negative correlation between first generation college student status and alcohol consumption also offers opportunities for

future research. While it was hypothesized that first-generation college status would be a risk factor for alcohol use it was found that first-generation college students report drinking less alcohol than their non-first-generation peers. While this was a small negative correlation, future studies examining the potential causes of this reduced alcohol consumption may hold the key to helping students who over use alcohol. Additionally, our field would benefit from a qualitative analysis of the experience of first-generation college students. Interviews with first-generation college students would strengthen our multicultural knowledge and improve services offered to first-generation college students. For example, qualitative research conducted by Pyne and Means (2013) explored the narratives of first-generation students in college and discovered methods of coping with feelings of invisibility and belonging. Stephens et al. (2012) also found important themes during interviews with first-generation college students regarding their experiences in college and being connected. In both of these research studies qualitative interviews helped to illuminate the experiences of first-generation college students. Future research examining alcohol use qualitatively among first-generation college students may further clarify the results of the current study and open new avenues for treatment and prevention efforts.

The current results also open the door to assessing if first-generation college students are also at a lower risk for engaging in other dangerous or problematic behaviors (e.g., drug use, risk taking, and poor diet). It is possible that first-generation college student status may be negatively related to these other behaviors as well. Being the first person in one's family to attend a college or university may also produce significant pressure to succeed and achieve, which may also impact the behavior of these students. Perhaps these students hold the key to helping their peers

improve their decision-making and instead find methods of having fun that does not damage their future at the same time.

Conclusion

Increasing numbers of students have been presenting for mental health treatment on college campuses to address their alcohol use (Gallagher, 2010). The goal of the current study was to examine the relationship between presenting alcohol use, family distress, college generational status (first-generation to college or not first-generation to college), and financial distress, because these variables have not been examined using the tools discussed (AUDIT, CCAPS, and SDS). By examining the predictive nature of these variables, screening could be improved to help identify and help students who are more at risk of experiencing the negative impact of alcohol use. It was hypothesized that higher levels of family distress, more financial stress, and being a first-generation college student would predict higher levels of alcohol use. The results that were obtained did not support this hypothesis. Conversely, first-generation college student status was negatively correlated to alcohol use, although the effect was small. Future research examining the relationship of first-generation college student status and risk factors (e.g., alcohol use) will inform best practices and improve interventions and assessments with this population.

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APPENDIX A. SDS

Client Questions	
Question Text	Answers
Attended counseling for mental health concerns	Never Prior to college After starting college Both
Taken prescribed medication for mental health concerns	Never Prior to college After starting college Both
Been hospitalized for mental health concerns	Answer Set A: How many times Never 1 time 2-3 times 4-5 times More than 5 times
	Answer Set B: The Last Time Never Within the last 2 weeks Within the last month Within the last year Within the last 1-5 years More than 5 years ago
Felt the need to reduce your alcohol or drug use	Answer Set A: How many Times Answer Set B: The Last Time
Others have expressed concern about your alcohol or drug use	Answer Set A: How many Times Answer Set B: The Last Time
Received treatment for alcohol or drug use	Answer Set A: How many Times Answer Set B: The Last Time
Purposely injured yourself without suicidal intent (e.g., cutting, hitting, burning etc.)	Answer Set A: How many Times Answer Set B: The Last Time
Seriously considered attempting suicide	Answer Set A: How many Times Answer Set B: The Last Time
Made a suicide attempt	Answer Set A: How many Times Answer Set B: The Last Time
Considered causing serious physical injury to another person	Answer Set A: How many Times Answer Set B: The Last Time
Intentionally caused serious physical pain to another	Answer Set A: How many Times Answer Set B: The Last Time
Someone had sexual contact with you without your consent (e.g., you were afraid to stop what	Answer Set A: How many Times Answer Set B: The Last Time

was happening, passed out, drugged, drunk, incapacitated, asleep, threatened or physically forced)	
Experienced harassing, controlling, and/or abusive behavior from another person (e.g., friend, family member, partner, or authority figure)	Answer Set A: <i>How many Times</i> Answer Set B: <i>The Last Time</i>
Experienced a traumatic event that caused you to feel intense fear, helplessness, or horror	Answer Set A: <i>How many Times</i> Answer Set B: <i>The Last Time</i>
If you selected, "yes" for the previous question, please briefly describe the event(s):	Free Response
Please select the traumatic event(s) you have experienced	Childhood physical abuse Childhood sexual abuse Childhood emotional abuse Physical attack (e.g., mugged, beaten up, shot, stabbed, threatened with weapon) Sexual violence (rape or attempted rape, sexually assaulted, stalked, abused by intimate partner, etc.) Military combat or war zone experiences Kidnapped or taken hostage Serious accident, fire, or explosion (e.g., an industrial, farm, car, plane, or boating accident) Terrorist attack Near drowning Diagnosed with life threatening illness Natural disaster (e.g., flood, quake, hurricane, etc.) Imprisonment or Torture Animal attack Other (please specify)
Other traumatic event	Free response
Think back over the last two weeks. How many times have you had: five or more drinks* in a row (for males) OR four or more drinks* in a row (for females)?	None Once Twice 3 to 5 times 6 to 9 times 10 or more times
Think back over the last two weeks. How many times have you smoked marijuana?	None Once Twice 3 to 5 times 6 to 9 times 10 or more times

Are you registered with the office of disability services on this campus, as having a documented and diagnosed disability?	Yes No
If you selected, "yes" for the previous question, please indicate which category of disability you are registered for (check all that apply):	Attention Deficit/Hyperactivity Disorders Deaf or Hard of Hearing Learning Disorders Mobility Impairments Neurological Disorders Physical/health related Disorders Psychological Disorder/Condition Visual Impairments Other (please specify)
Other disability:	Free response
Please indicate how much you agree with this statement: "I get the emotional help and support I need from my family ."	Strongly disagree Somewhat disagree Neutral Somewhat agree Strongly agree
Please indicate how much you agree with this statement: "I get the emotional help and support I need from my social network (e.g., friends & acquaintances)."	Strongly disagree Somewhat disagree Neutral Somewhat agree Strongly agree
Client ID	Automatically generated by Titanium during upload of de-identified data.
Age (in years)	Automatically generated by Titanium during the upload of de-identified data from the date of birth stored in the client record.
What is your gender identity?	Woman Man Transgender Self-identify (please specify)
Self-identify gender identity	Free response
What was your sex at birth?	Female Male Intersex
Do you consider yourself to be:	Heterosexual Lesbian Gay Bisexual Questioning Self-identify (please specify)
Self-identify sexual orientation	Free response
Since puberty, with whom have you had sexual experience(s)?	Only with men Mostly with men

	About the same number of men and women Mostly with women Only with women I have not had sexual experiences
People are different in their sexual attraction to other people. Which best describes your current feelings? Are you:	Only attracted to women Mostly attracted to women Equally attracted to women and men Mostly attracted to men Only attracted to men Not sure
What is your race/ethnicity?	African American / Black American Indian or Alaskan Native Asian American / Asian Hispanic / Latino/a Native Hawaiian or Pacific Islander Multi-racial White Self-identify (please specify)
Self-identify race/ethnicity	Free Response
If you would like to, please further describe your racial, cultural, ethnic, or regional identity:	Free Response
What is your country of origin?	Drop Down menu of all countries
Are you an international student?	Yes No
Relationship status:	Single Serious dating or committed relationship Civil union, domestic partnership, or equivalent Married Separated Divorced Widowed
Religious or spiritual preference:	Agnostic Atheist Buddhist Catholic Christian Hindu Jewish Muslim No preference Self-identify (please specify)
Other religious or spiritual preference:	Free response

To what extent does your religious or spiritual preference play an important role in your life?	Very Important Important Neutral Unimportant Very unimportant
Current academic status:	Freshman / First-year Sophomore Junior Senior ◆ Graduate / professional degree student ◆ Non-student ◆ High-school student taking college classes ◆ Non-degree student ◆ Faculty or staff Other (please specify)
Other academic status:	Free Response
Graduate or professional degree program:	◆ Post-Baccalaureate ◆ Masters ◆ Doctoral degree ◆ Law ◆ Medical ◆ Pharmacy ◆ Dental ◆ Veterinary Medicine Not Applicable Other (please specify)
Other graduate or professional degree type:	Free Response
What year are you in your graduate/professional program?	1-5 (drop-down list)
What kind of housing do you currently have?	On-campus residence hall/apartment On/off campus fraternity/sorority house On/off campus co-operative house Off-campus apartment/house Other (please specify)
Other housing:	Free Response
With whom do you live? (check all that apply)	Alone Spouse, partner, or significant other Roommate(s) Children Parent(s) or guardian(s) Family other Other (please specify)

Others living with:	Free response
Did you transfer from another campus/institution to this school?	Yes No
What is your current GPA?	Free Response
Please indicate your level of involvement in organized extra-curricular activities (e.g., sports, clubs, student government, etc.):	None Occasional participation One regularly attended activity Two regularly attended activities Three or more regularly attended activities
Please estimate the number of hours per week you are actively involved in organized extra-curricular activities (e.g., sports, clubs, student government, etc.):	Free Response
Do you participate on an athletic team that competes with other colleges or universities?	Yes No
Are you a member of ROTC?	Yes No
Have you ever served in any branch of the US military (active duty, veteran, National Guard or reserves)?	Yes No
Did your military experiences include any traumatic or highly stressful experiences which continue to bother you?	Yes No
If yes, please describe:	Free Response
What is the average number of hours you work per week during the school year (paid employment only)?	Free Response
Are you the first generation in your family to attend college?	Yes No
How would you describe your financial situation right now:	Always stressful Often stressful Sometimes stressful Rarely stressful Never stressful
How would you describe your financial situation while growing up:	Always stressful Often stressful Sometimes stressful Rarely stressful Never stressful

APPENDIX B CCAPS-62

INSTRUCTIONS: The following statements describe thoughts, feelings, and experiences that people may have. Please indicate how well each statement describes you, during the past two weeks, from “not at all like me” (0) to “extremely like me” (4), by marking the correct number. Read each statement carefully, select only one answer per statement, and please do not skip any questions.

	Not at all like me				Extremely like me
1. I get sad or angry when I think of my family	0	1	2	3	4
2. I am shy around others	0	1	2	3	4
3. There are many things I am afraid of	0	1	2	3	4
4. My heart races for no reason	0	1	2	3	4
5. I feel out of control when I eat	0	1	2	3	4
6. I enjoy my classes	0	1	2	3	4
7. I feel that my family loves me	0	1	2	3	4
8. I feel disconnected from myself	0	1	2	3	4
9. I don't enjoy being around people as much as I used to	0	1	2	3	4
10. I feel isolated and alone	0	1	2	3	4
11. My family gets on my nerves	0	1	2	3	4
12. I lose touch with reality	0	1	2	3	4
13. I think about food more than I would like	0	1	2	3	4
14. I am anxious that I might have a panic attack while in public	0	1	2	3	4

15. I feel confident that I can succeed academically	0	1	2	3	4
16. I become anxious when I have to speak in front of audiences	0	1	2	3	4
17. I have sleep difficulties	0	1	2	3	4
18. My thoughts are racing	0	1	2	3	4
19. I am satisfied with my body shape	0	1	2	3	4
20. I feel worthless	0	1	2	3	4
21. My family is basically a happy one	0	1	2	3	4
22. I am dissatisfied with my weight	0	1	2	3	4
23. I feel helpless	0	1	2	3	4
24. I use drugs more than I should	0	1	2	3	4
25. I eat too much	0	1	2	3	4
26. I drink alcohol frequently	0	1	2	3	4
27. I have spells of terror or panic	0	1	2	3	4
28. I am enthusiastic about life	0	1	2	3	4
29. When I drink alcohol I can't remember what happened	0	1	2	3	4
30. I feel tense	0	1	2	3	4
31. When I start eating I can't stop	0	1	2	3	4
32. I have difficulty controlling my temper	0	1	2	3	4
33. I am easily frightened or startled	0	1	2	3	4
34. I diet frequently	0	1	2	3	4
35. I make friends easily	0	1	2	3	4
36. I sometimes feel like breaking or smashing things	0	1	2	3	4

37. I have unwanted thoughts I can't control	0	1	2	3	4
38. There is a history of abuse in my family	0	1	2	3	4
39. I experience nightmares or flashbacks	0	1	2	3	4
40. I feel sad all the time	0	1	2	3	4
41. I am concerned that other people do not like me	0	1	2	3	4
42. I wish my family got along better	0	1	2	3	4
43. I get angry easily	0	1	2	3	4
44. I feel uncomfortable around people I don't know	0	1	2	3	4
45. I feel irritable	0	1	2	3	4
46. I have thoughts of ending my life	0	1	2	3	4
47. I feel self conscious around others	0	1	2	3	4
48. I purge to control my weight	0	1	2	3	4
49. I drink more than I should	0	1	2	3	4
50. I enjoy getting drunk	0	1	2	3	4
51. I am not able to concentrate as well as usual	0	1	2	3	4
52. I am afraid I may lose control and act violently	0	1	2	3	4
53. It's hard to stay motivated for my classes	0	1	2	3	4
54. I feel comfortable around other people	0	1	2	3	4
55. I like myself	0	1	2	3	4
56. I have done something I have regretted because of drinking	0	1	2	3	4
57. I frequently get into arguments	0	1	2	3	4

58. I find that I cry frequently	0	1	2	3	4
59. I am unable to keep up with my schoolwork	0	1	2	3	4
60. I have thoughts of hurting others	0	1	2	3	4
61. The less I eat, the better I feel about myself	0	1	2	3	4
62. I feel that I have no one who understands me	0	1	2	3	4

APPENDIX C: AUDIT

PATIENT: Because alcohol use can affect your health and can interfere with certain medications

and treatments, it is important that we ask some questions about your use of alcohol.

Your answers will remain confidential so please be honest. Place an X in one box that

best describes your answer to each question.

Questions	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a week	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself	Never	Less than monthly	Monthly	Weekly	Daily or almost daily

going after a heavy drinking session?					
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have been unable to remember what happened the night before because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year