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The Association Between Depression, Spirituality and Religiosity, and Alcohol Use in College Students at a Faith Based University

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ABSTRACT

Alcohol use is a prevalent concern on college campuses. There are a number of factors that may place students at a high risk for developing alcohol dependency. Similarly, protective factors have been identified as a means to keep drinking levels in the low-risk range. In a sample of 581 students from Abilene Christian University, researchers sought to better understand the association between depression, spirituality, religiosity, and alcohol use in college students at a faith based university. Results indicated that students who were most at risk for high levels of drinking were those who identified as the male gender, those who lived on campus, and those who were involved in a social club on campus. Additionally, results indicated that spirituality serves as a moderator between the depression and alcohol use. Meaning, when spirituality is minimal, then the effect that depression has on drinking is also minimal. However, when spirituality levels are high, then depression has a larger effect on drinking patterns. These results indicated that drinking in college students is a valid concern and that mental health and spirituality may affect students' drinking patterns. Knowing this association, it is important that college campuses utilize both alcohol use prevention planning as well as intervention programs.

The Association Between Depression, Spirituality and Religiosity, and Alcohol Use in

College Students at a Faith Based University

A Thesis

Presented to

The Faculty of the Graduate School

Abilene Christian University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science

In Social Work

By

Kylee Craggett

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For my four younger siblings, whose entrance into my life through adoption gave me the passion and tenacity to enter the profession of social work. The work behind this research is because of you, sweet ones.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

The transition into college is a time with significant stress and life adjustments.

During this time, students are reported to be at a high risk for developing habits of binge

drinking, among other risky behaviors (Berry, Bass, Fassler, & Succop, 2013).

Approximately four out of every five college students drink alcohol to varying degrees,

and roughly half of college students who drink participate in binge drinking habits

(National Institute of Alcohol Abuse and Alcoholism, n.d.). Alcohol use for college

students has severe ramifications for a student's overall physical, academic, emotional,

and spiritual well being. The National Institute of Alcohol Abuse and Alcoholism

(NIAAA) reported roughly 1,825 college students die each year from alcohol related

incidents. Additionally, 690,000 students suffer assaults from students who are

intoxicated or have been drinking. It has also been reported that 97,000 students are

victims of an alcohol-related sexual assault or rape. These statistics show the severity and

dangers of drinking, when not done safely or responsibly.

Alcohol use is developed through a variety of factors and has many possible

implications, which are capable of significantly impairing facets of students' lives. These

factors range from family history and drinking in isolation, to collegiate norms and

depression. In a study conducted in April of 2015, Champion and colleagues asserted

that, although "social norms have been identified as a strong predictor for college

drinking, programs based on norms have had limited effectiveness in changing drinking

behavior" (Champion, Lewis, & Myers, 2015). While education programs focused around norms may have limited positive implications, the use of alcohol education and intervention programs is prevalent on college campuses. Knowing this, it is critical to understand both the protective factors and risk factors that surround a student's tendency toward alcohol. Therefore, the purpose of this study is to better understand the association between students' levels of spirituality and alcohol use on a Christian college campus. Additionally, measures will be taken to understand if depression is a variable impacting alcohol use. Extensive research has been conducted to increase the understanding of variables related to alcohol use on a college campus. However, little research exists that directly examines the roles that the combination of spirituality and depression play as a moderating effect on alcohol use. This researcher believes these variables will add a pertinent element to the literature on this field of study.

CHAPTER II

LITERATURE REVIEW

Many terms throughout this review of literature will be used multiple times and have the potential of ambiguity. In order to keep this material clear, frequently used terms will be defined as follows:

- *Alcohol abuse:* "Patterns of drinking that results in harm to one's health, interpersonal relationships, or ability to work" (Centers for Disease Control and Prevention, 2015). This level of drinking is not quantified; however, signs of alcohol abuse include neglecting major responsibilities, drinking in dangerous situations, legal trouble in relation to alcohol, and continuing to drink despite alcohol creating tension in relationships.

- *Binge drinking*: The National Institute of Alcohol Abuse and Alcoholism (NIAAA) defines binge drinking as "a pattern of drinking that brings blood alcohol concentration (BAC) levels to 0.08 g/dL", which is approximately four drinks for women and five drinks for men over the course of 2 hours.

- *Depression*: "A mood disorder in which feelings of sadness, loss, anger, or frustration interfere with every day life for weeks or more" (U.S. National Library of Medicine, 2014). While depressive symptoms may be present during periods of grief, it should be noted that Major Depressive Disorder, as defined by the *Diagnostic and Statistical Manual of Mental Disorders*, V (DSM-5), indicates five or more of the symptoms

listed must be present "during the same 2-week period and represent a change from previous functioning" (DSM-5, 2013, p. 160).

- *Heavy* or *High-Risk Drinking:* Consuming "5 or more drinks on the same occasion on each of 5 or more days in the past 30 days" (NIAAA).

- *Low-Risk Drinking*: No more than four drinks per day or seven drinks per week for women, and no more than seven drinks per day or 14 drinks per week for men (NIAAA).

- *Spirituality*: A measurement of existential well-being and how individuals find meaning and wellness in life. Those who identify as spiritual beings may be associated with a religious group; however, spirituality is not dependent on a religious identification.

- *Religious or religiosity*: The *Merriam-Webster Dictionary* defines the term religious as "relating to or manifesting faithful devotion to an acknowledged ultimate reality or deity." Contrary to spirituality, this term is used to describe a more ritualistic lifestyle, often involving "regular interactions with group members, who also share similar values and attributes" (Chawla, Neighbors, Lewis, Lee, & Larimer, 2007, p. 411).

Search Terms

To identify relevant research, EBSCOHost, a web-based database search engine, was used to search for peer-reviewed journal articles. Additionally, supplemental textbooks and manuals were used to gather information. Key phrases for this search included: "alcohol use in college students", "spirituality in college students", "religiosity and spirituality", "risk factors for alcohol use", "protective factors against alcohol use", "mental illness in college students", and "change in first-year college students".

Based on the articles reviewed, several risk and protective factors exist that may indicate a student's risks for alcohol use in college. All of these factors can further be evaluated on a micro, mezzo, and macro level by using the Ecological Systems Theory originally developed by psychologist Urie Brofenbrenner.

Theoretical Framework

This theoretical framework provides a vehicle to examine college students' use of alcohol on a college campus. The Ecological Systems Theory will be used to understand how the risks and protective factors can be better understood by looking at their micro, mezzo, and macro level.

Ecological Systems Theory

The Ecological Systems Theory (EST) is one of the most widely accepted frameworks for examining individuals in varying contexts (Neal & Neal, 2013). Originally developed by Brofenbrenner in 1977, this theory functions around the belief that a person's complexity makes it necessary to observe the entire environment of a person in order to claim knowledge of that person's holistic being (Burns, Warmbold-Brann, & Zaslofsky 2015). This system operates around five primary subsystems: microsystem, messosystem, exosystem, macrosystem, and chronosystem. Michael Rothery, author of the Ecological Systems Theory chapter in *Theoretical Perspectives for Direct Social Work Practice*, wrote:

> Since its inception, social work has wrestled with the need for ways of thinking about clients' situations that included a respect for individuals' and families' capacities for effective coping, but also recognized the critical importance of

environment – the physical and social contexts that support, constrain, and shape our efforts to live gratifying lives (p. 68-69).

The implementation of this framework provides a way for the mirco, mezzo, and macro layers of a person, as well as the way these spheres interact with one another, to be holistically studied.

With this framework in mind, a college student's relationship with alcohol can only be fairly understood if the student's external systems are examined. Not only is a student's individual relationship with alcohol an important factor, but also how the student interacts with alcohol at the mezzo and macro levels, such as in small friend groups, with family, and in larger social environments. Furthermore, this theory encourages the recognition that an individual's different "levels" are continuously and intrinsically interacting with one another (Rothery, 2001). This theoretical framework will be foundational as both risk and protective factors of alcohol use in college students are further examined.

In the following sections, the risk factors and protective factors of alcohol use in college students will be discussed. These risk and protective factors include family history, drinking in isolation, collegiate norms, depression, academic performance, drinking expectations, religiosity, and spirituality.

Risk Factors

The demographic of 18-to-25 year-olds is reported to show the highest rate of heavy drinking and alcohol use disorders (Dager et al, 2014). Specifically with college students, several factors exist that may put a student at risk for becoming more susceptible to alcohol dependence: tendencies toward family history, drinking in

isolation, collegiate norms, and depression. These factors exist on the macro, mezzo, and micro levels and will be explored as such.

Family history. Family history of substance abuse has long been a risk factor in determining alcohol use and abuse among offspring or blood-related relatives (Elliott, Carey, & Bonafide, 2012). In a sample size of 7,000 college students, 35% reported a family history of alcohol abuse (FH+); additionally, students with a family history of alcohol abuse were more likely to have drunk in the past year than their FH- counterparts (LaBrie, Migliuri, Kenney, & Lac, 2010). These results further support the claim that a positive family history of alcohol use disorder is closely associated with a higher likelihood of personal alcohol use disorder (Spadoni, Simmons, Yang, & Tapert, 2013). This association is known as the family history effect.

The family history effect implies that relatives of alcoholics may be more prone to develop alcohol dependence than relatives of non-alcoholics. Genetic studies on alcohol dependence have been conducted over the years, searching for present genes that contribute to alcohol dependence. While it is known that genetics play a part in alcohol dependence for the population at large, new research continues to be conducted on the direct impact of genetics in university students. In a meta-analysis of 82 research studies, it was concluded that students with this gene do not necessarily have a higher propensity to drink alcohol, but rather when they drink they are more inclined to do so with dangerous patterns (Elliott et al., 2012). Although genetics may not influence a college student's tendency to begin drinking, it does, essentially, make a student more prone to abuse alcohol or experience harmful symptoms as a result of drinking.

Collegiate norms. A 2014 survey on drug use and health reported "almost 60 percent of college students ages 18-22 drank alcohol in the past month, and almost 2 out of 3 of them engaged in binge drinking during that same timeframe" (National Institute of Alcohol Abuse and Alcoholism). In a university setting, researchers believe an individual's perception of how others at their university drink may dictate the choice to drink more than desired (Pedersen & LaBrie, 2008). For instance, Pedersen and LaBrie asked their sample of 522 college students to fill out a survey regarding their current drinking habits and their perception of others' drinking habits at the same university. Through this questionnaire, they found students perceived their peers to drink almost double of what those students actually reported drinking.

Social context drinking refers to the many variables that play into the reason a person may choose to drink. This reasoning can be divided into two primary categories: descriptive norms, which are based on social patterns, and injunctive norms, which are an extension of morality (Moser, Pearson, Hustad, & Borsari 2014). While there appears to be a clear association between social pressure and increased drinking patterns, there has also been research conducted that shows a positive association between a student's fear of alcoholism and ability to withstand peer pressure (Crawford & Novak 2007). Similarly to descriptive and injunctive norms, social context can be divided into two categories: passive social influence and active social influence (Cullem, O'Grady, Armeli, & Tennen, 2012). These two categories of influence show that students are impacted by environment, but that the kind of environment also impacts drinking patterns. For example, Cullem et al, stated that passive social influence relates to a student's perception of drinking, while active social influence is seen when a student is directly

offered an alcoholic drink, whether forcefully or not. These two kinds of influences are different in nature, yet are both seen as predictors of drinking patterns.

In order to better understand drinking norms in a collegiate setting, researchers studied drinking games as a predictor for alcohol and drug use (Simons et al., 2005). Drinking games can be defined as a group activity that has guidelines pertaining to the amount of alcohol that must be consumed (Ham, Zamboanga, Olthuis, Casner & Bui, 2010). The presence of drinking games at a collegiate event is associated with rapid or heavy drinking at the same event (Clapp & Shillington, 2001; Moser et al., 2014). Simons and his research team aimed to better understand the association between drinking games on college campuses and a student's risk for developing heavy drinking patterns. These measurements included frequency of participation of drinking games, if the student lived on or off campus, if the student was a collegiate athlete, and whether or not he or she was involved in the school's Greek system. In their study of 317 undergraduate students, 96% reported consuming an alcoholic beverage in the past 30 days, and 65% admitted to participating in a drinking game during that same time frame. These findings led the researchers to discover that participating in drinking games was positively correlated with the frequency of alcohol use. Reasoning for drinking games varies, but one common reason is the social pressure from peers. Additionally, it appeared that students who lived in campus housing were more likely to participate in drinking games than those who lived off campus (Simons et al., 2005). This pattern is consistent with what Pedersen and LaBrie discovered in their study on perceived drinking; they noted that when students believe their peers may be drunk before even arriving at the destination, they might in

turn participate in pre-party drinking, for fear of being the only sober person when arriving at the drinking location.

Drinking in isolation. While alcohol use in a social environment is a norm for college students, those who drink heavily in isolation experience greater dependency on alcohol than their peers who drink heavily only in social situations (Christiansen, Vik, & Jarchow, 2002). There are multiple reasons a student may choose to drink in isolation. A primary risk factor for isolated binge drinking episodes is a student's feeling of social isolation. (Gonzalez & Skewes, 2013). Individuals who are socially anxious are more likely to drink alone and more than four times as likely as their non socially anxious peers to develop an alcohol use disorder (Buckner & Terlecki, 2016). When studying 90 college students in the Northwest United States, Gonzalez and Skewes discovered "solitary heavy drinkers were significantly higher in depression, hopelessness, and suicidal ideation than social heavy drinkers" (Gonzalez & Skewes, 2013, p.291). This affirms Christiansen and researchers finding that students who drink heavily when alone are more likely to experience negative, lasting symptoms than their social drinking counterparts.

Depression. Alcohol use and depression are frequently found together among first-year college students (Geisner, Mallett, & Kilmer, 2012). Although there are varying severities of depression and the strength of the association between depression and alcohol use, the National Institute of Mental Health (NIHM, 2012) reports roughly 30% of surveyed college students expressed experiencing some kind of depressive symptoms. Common symptoms of this illness include a general loss of interest in previously desired activities, tiredness, lack of appetite, feeling emotionally low, and a decreased lack of

self-esteem (U.S. National Library of Medicine, 2013). Symptoms vary in levels of severity but can be severe enough to "alter cognitive-motivational processes that play a role in drinking behavior" (Ralston & Palfai, 2010). These cognitive processes play significant roles in both decision-making and motivation leaving the brain at risk when impaired by depressive symptoms. While there is consensus on the high rate of depression among people who use alcohol, the literature argues whether depression is a result of high alcohol use, or if people who are depressed use alcohol as a way to self-medicate.

In a study of 869 college freshmen, only 15% of students admitted to drinking with mild depressed symptoms, and of the students who reported one occasion of binge drinking in the 2 weeks prior to the survey, only 25% of them noted experiencing depressive symptoms (Geisner, et al, 2012). The researchers analyzed the data and found high drinking totals were directly associated with higher levels of depression; these findings led them to believe that perhaps students with a higher level of depression were drinking more alcohol, alleviating them of common depressive symptoms, and thus not causing the student to record depressive symptoms on the survey. While the researchers admitted this claim would need further longitudinal data to back its credibility, the idea of "drinking to cope" is a facet of Social Learning Theory that says "negative affects play an integral role in the relationship between depressed mood and alcohol outcomes" (Kenny, Jones, & Barnett, 2015, p. 1885).

Protective Factors

Although the college student population is at great risk for developing harmful drinking habits, several protective factors exist that may help students avoid alcohol use

in a way that interferes with daily activity. These factors include academic performance, drinking expectations, religiosity, and spirituality.

Academic performance. While it may be assumed that students who are on a college campus for the express purpose of academics have less of a desire to consume alcohol, research has pointed to the fact that because "the consumption of alcohol is a phenomenon so embedded in college life students do not seem to be worried when it impacts one's education negatively" (Eshbaugh, 2013, p. 81). The high level of alcohol use on college campuses has led researchers to study how alcohol affects academic achievement and if a student's desire to succeed may serve as a reason to refrain from alcohol use.

In a 2010 controlled study, Howland and his team of researchers tested students in a lab on the day after intoxication, following 8 hours of sleep. In this particular study, there was not a significant change in testing scores for students with alcohol in their system versus students who had been given placebo drinks; however, students rated their testing performance as worse. Additionally, these researchers noted factors that could not be tested in a lab setting, such as study habits, class attendance, and motivation for academic success were contributing factors (Howland, et al., 2010).

Drinking expectations. Expectancy Outcome Theory, often referred to as Expectancy Theory, operates around the belief that receiving positive consequences as a result of actions or beliefs increases the likelihood of people engaging in those same behaviors (Ham, Zamboanga, Bridges, Casner, & Bacon, 2013; Jones, Corbin, & Fromme 2001; McBride, Barrett, Moore, & Shonfeld, 2015). Specific to alcohol consumption, this theory emphasizes that if positive effects are experienced, the

individual's alcohol expectancy is reinforced, motivating further drinking (Morean, Corbin, & Treat, 2015). Similarly, when an individual's alcohol expectancies are not met through the consumption of alcohol, the lack of reinforcement may cause the individual to drink less. Researchers note that whether these expectations are held by direct experience and whether there is a strong likelihood of them occurring is irrelevant to this theory (Jones et al., 2001).

Religiosity. Often confused or used interchangeably with spirituality, religiosity refers to a more ritualistic lifestyle, often involving "regular interactions with group members, who also share similar values and attributes" (Chawla et al., 2007, p. 411). Religion provides a sense of meaning and a point of connection that is often beneficial during challenging life circumstances (Koenig, 2009). A large percentage of college students indicate that religious beliefs dictate or inform their behaviors (Moore, Berkley-Patton, & Hawes, 2013). Additionally, findings have shown a negative correlation between religiosity and risky behaviors, such as binge drinking (Berry et al., 2013). Researchers Galen and Rogers studied religiosity and its association with alcohol use, noting the difference between intrinsic and extrinsic religiosity. The authors identified extrinsic religiosity as involving outside influence, perhaps "social support and assistance in coping"; whereas, intrinsic religiosity is a more "internalized and meaningful integration of the religion into one's personal identity" (Galen & Rogers, 2004, p. 469). After surveying 265 college undergraduates, researchers found there is an inverse relationship between the amount of alcohol consumed and "various religious measures" (Galen & Rogers, 2004, p. 471). While there is a wide array of religious measurements, it

should be noted that in this particular study, religious measures included items such as church denomination, church attendance, and frequency of prayer.

Spirituality. One key component believed to impact alcohol use in college students is the level of spirituality. Religiosity and spirituality are often associated or used interchangeably in conversation, however, religiosity focuses on organized groups and participation in rituals, whereas spirituality is a broader term encompassing an awareness of self and belief in a god or a higher power (Good & Willoughby, 2006). While studies have been conducted regarding the association between spirituality and chronic or terminal illness, less research has been carried out to measure the relation between alcohol use and spiritual involvement.

Students are at a high risk for drinking in college, and it is believed that a student's level of spirituality may be closely associated with drinking tendencies (Foster, Quist, Young, Bryan, Nuygen, & Neighbors, 2013). This association was clearly established in a study of 700 college students at a large university; at the conclusion of this study researchers found a negative association between students' spirituality and religious practices and their drinking patterns (Foster et al., 2013).

In relation to drinking programs, spirituality is defined as "communication with a higher power, a sense of the transcendental, an inner awareness of one's belief system, and connection with others" (VonDras, Schmitt, & Marx, 2007). Many students identify with a religion, which may serve as an avenue for spirituality; however, students also practice unconventional methods of spirituality without the presence of religiosity.

Due to its ambiguity and unconventionality, it is challenging to objectively measure an individual's level of spirituality; it typically is measured through positive

character and social traits, purpose in life, and connectedness (Koenig, 2014). While these are all traits that are elements of spirituality, social scientists have developed personality models to track the holistic spiritual sense of a person. One frequently used model includes five key elements of spirituality: cognitive orientation toward spirituality, experiential/phenomenal dimension, existential well-being, paranormal beliefs, and general religiousness (MacDonald, 2000). These five key facets, which have been changed and adapted by other psychologists, serve as an avenue to bring greater understanding to all that spirituality can encompass.

Because spirituality is broad, tending to incorporate the belief in a higher power or something bigger than oneself, there is almost no limit to the way an individual may choose to practice spirituality.

Conclusion

This review of literature addressed how the Ecological Systems Theory is valuable in understanding risk and protective factors pertaining to alcohol use in college students at the micro, mezzo, and macro level. Throughout the previous discussion, several micro and mezzo level factors were identified and discussed; however, the researcher highlighted two macro level issues that are not prevalent in current research. Due to the lack of research, the researcher concludes further analysis of depression and spirituality in college students will provide valuable information on this topic.

Knowing that young adults in the 18-to-25 years of age demographic consume the highest volume of alcohol and that college students drink more than individuals who are not enrolled in higher education (Johnston, O'Malley, Bachman, & Schulenburg, 2004), it appears critical to further understand how spiritual development may inform alcohol

use patterns. Therefore, the purpose of this research is to examine the relationship

between depression, spirituality, and alcohol consumption in the lives of college students.

CHAPTER III

METHODOLOGY

The purpose of this study was to identify the relationship between spirituality, depression, and alcohol use. More specifically, this study addressed the following research question: *what is the relationship among depression, spirituality and/or religiosity, and the frequency of alcohol use among college students at a Christian University*. In order to determine this, a cross-sectional study using a survey method was distributed to examine whether the hypothesized factors explain variance in the use of alcohol.

Variables

The variables that were evaluated in this study were the frequency and quantity of alcohol use in college students, depression level in college students, and students' beliefs and practices regarding spirituality and religiosity. When analyzing these findings, spirituality and religiosity worked as the Independent Variable (IV), and the level of alcohol use functioned as the Dependent Variable (DV). Additionally, the researcher incorporated a depression scale with the intention of better understanding if there is a notable association between alcohol use and depression among college students.

Sample

The sample for this study included all willing undergraduate students attending Abilene Christian University (ACU) at the time the survey was distributed. Participants were chosen on a voluntary basis, and were informed that all results are anonymous

through an informed consent prior to beginning the survey. This consent form outlined the purpose and procedure of the study, made potential participants aware of any possible risks with the study, and communicated with students that there is no penalty for choosing not to participate. The only criterion for participation was that the student was between 18 and 25 years of age and enrolled in classes at the time of completing the survey. Non-traditional students over the age of 25 were excluded from this study.

Procedure

An electronic survey was sent out to all undergraduate students attending Abilene Christian University (ACU). The purpose of this survey was to gather data on students' alcohol use, religiosity and spirituality practices, and depressive symptoms, in order to identify the association among these measures. Permission to complete this research project using human participants was granted by Abilene Christian University's Institutional Review Board. After obtaining this permission, the survey was inputted into a secure online system and electronically distributed to each student's ACU email address. All data gained through the student measurements was then transferred to quantitative measures, analyzed, and interpreted.

Instruments

A total of three instruments were used to gather data for this study. These instruments collected information on a student's depression, spirituality and religiousness, and alcohol use with the purpose of better understanding the level of association among these variables.

Depression

  The depression scale used for this study is the PHQ-9 Patient Depression Questionnaire (Appendix B). This questionnaire includes 9 statements on interest level, sleep, hopelessness, energy, appetite, self-worth, concentration, and self-harm. A 10th question further asks how these tendencies have interfered with daily functions in life. This scale served the purpose of discovering if the participant met criteria for a depressive disorder, and the severity of these symptoms. Participants using this scale were instructed to indicate if they had experienced the action described in the statement within the past two weeks by marking a 0 for "not at all", 1 for "several days", 2 for "more than half the days" and 3 for "nearly every day". According to Kroenke and his team of researchers, "major depression is diagnosed if 5 or more of the 9 depressive symptom criteria have been present at least 'more than half the days' in the past 2 weeks" (Kroenk, Spitzer, & Williams, 2001).

  This scale was chosen for this study due to its brevity and thoroughness in identifying depressive symptoms. Additionally, this scale's reliability has been validated through a series of studies since its initial development in 1997 (Kroenke et al., 2001).

Spirituality and Religiosity

  Both spirituality and religiosity for this survey were measured using the Expressions of Spirituality Inventory (ESI) scale, created and developed by Douglas A. MacDonald in 1997, then revised for clarity in 2009 (Appendix C). This 98-item self-reporting scale measures five various dimensions, using a set of subscales within the larger scale. These subscales include cognitive orientation toward spirituality, (b) experiential/phenomenological dimension of spirituality, (c) existential well-being, (d)

paranormal beliefs, and (e) religiousness. In 2009, MacDonald took these five dimensions and organized them into three levels. The most current revised scale is a total of 30 items with 6 items per topic. For this survey, the participants were provided a total of 12 statements. They were instructed to indicated on a 0-4 Likert Scale the extent to which they agree or disagree with each statement (For this scale, 0 = Strongly Disagree and 4 = Strongly Agree). Six of these statements refer specifically to spirituality and the other six statements cover religiosity, which is specifically labeled as the Experiential and Phenomenological Dimension. These 12 statements encompass the entirety of the Religiousness and Spirituality subscales.

Alcohol Use

The instrument used to measure alcohol use for this survey is the Alcohol Use Disorders Identification Test (AUDIT), which was developed in 1982 by the World Health Organization (Appendix D). This is a simple 10-question tool with questions that aim to identify drinking habits, such as frequency and volume of consuming alcoholic beverages. The first question asked the participants how often they "have drinks containing alcohol". The responses for this question consisted of (0) Never, (1) Monthly or less, (2) 2-4 times a month, (3) 2-3 times a week, or (4) 4 or more times a week. Further questions were formatted in a similar order, and participants were asked to circle the appropriate response to each question.

Scoring for this test is conducted by adding the numbers that correspond with each indicated answer. With this test, a total of 8 or more total points for men and 7 or more total points for women indicates a strong possibility of harmful drinking behavior.

Additionally, a total of 20 points for either male or female indicates a strong possibility of alcohol dependent behavior.

Analysis

Following the collection of data, a descriptive analysis was conducted to understand the characteristics of the sample. This included a written analysis of commonly seen patterns and tendencies that show either an association or disassociation between any of the variables. Following this, a hierarchical linear regression analysis and a hierarchical logistic regression analysis were used to examine the effect of each factor, including depression, spirituality, religiosity, and alcohol use. This analysis examined the relationships between these factors.

CHAPTER IV

FINDINGS

Description of Sample

A total of 3,366 surveys were sent out to undergraduate students at Abilene

Christian University eliciting participation in this research study. Of this sample, 712

students responded to the survey. 131 students did not complete the entirety of the

survey, making their results incapable of being analyzed. After dismissing these students

from the results, a total of 581 participants' results were analyzed and used for the

remainder of this study.

Hypotheses/Research Questions

The researcher's aim in the distribution of this survey was to collect data to help

answer the following research question: *what is the relationship among depression,*

spirituality and/or religiosity, and the frequency of alcohol use among college students at

a Christian University? Based on the review of literature, this researcher expected

spirituality and religiosity to function as a protective factor for alcohol use in college

students, and tendencies toward depression to function as a risk factor for alcohol use.

Review of Findings

Of the students who completed the survey, 169 (29.1 %) identified as male, and

412 (70.9%) identified as female. The respondents were broken up relatively evenly by

classification, with freshman responding at the highest rate of 185 (31.8%). Additionally,

118 (20.3%) sophomores responded, 135 (23.2 %) juniors responded, and 140 (24.1)

seniors responded. Three students did not share their classification, which is less than .5% of the respondents. For living situations, 332 (57.1%) students reported living on campus in a dorm. 190 students (32.7%) indicated living off campus with a friend, 39 students (6.7%) indicated living off campus with a spouse or partner, and the smallest group of only 12 students (2.1%) were those who live off campus with parents. 177 students (30.5 %) reported being involved in a social club on campus, while 400 students (68.8%) reported no social club involvement. 3 students (.5%) indicated that they preferred not to answer the question, and 1 student (.2%) did not answer the question. Finally, the frequencies from this data showed that 14.6% of the students sampled presented an AUDIT score over 8, putting them in the high risk-drinking category.

      As seen in Table 1, significantly more males were at high risk for developing alcohol use disorder or drinking-related problems than were females. More than 1 out of 4 males, in this sample were at high risk while approximately 1 out of 10 females was classified as being at high risk. As Table 2 shows, there was also a larger than expected (i.e., by chance) proportion of respondents at high risk for alcohol-related problems who were involved with social clubs.

Table 1

Risk for Alcohol Use Disorder by Gender

Gender	Low Risk	High Risk
Male	126 (74.56%)	43 (25.44%)
Female	370 (89.81%)	42(10.19%)

Chi Sq. (1) = 22.31, p = .000

Table 2

Risk for Alcohol Use Disorder by Social Club Involvement

Involved in Social Club	Low Risk	High Risk
Yes	142 (80.23%)	35 (19.77%)
No	352 (88.00%)	48 (12.00%)

Chi Sq. (1) = 6.02, *p* = .011

As Table 3 indicates, several of the variables tested were significantly correlated. The correlations revealed that there was a significant connection between total AUDIT scores and both a gender selection of males and living off campus. Additionally, there was an inverse relationship between depression and religiosity, as well as between AUDIT scores and religiosity. Meaning, from this sample size, higher levels of depression were connected with lower levels of religiosity, and vice versa. Similarly, higher levels of drinking, as determined through AUDIT scoring, showed lower levels of religiosity. Additionally, religiosity and spirituality were found to be significantly associated.

Table 3

Zero-Order Correlation Matrix

	Gender	Live Off Campus	AUDIT	Depression	Spirituality	Religiosity
A: Gender, Male(1)	1					
B: Live Off Campus with Friends (Yes=1)	0.014	1				
C: AUDIT	.159**	.144**	1			
D: Depression	-0.064	-.098*	.155**	1		
E: Spirituality	0.043	0.061	0.039	-0.037	1	
F: Religiosity	-.114**	0.031	-.200**	-.230**	.256**	1

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

A hierarchical linear regression showed that each level significantly improved upon the previous level. Interactive levels in Model 4 explained 11.1% of the variation in AUDIT scores and was significantly better fitting model than Model 3. For this reason, the regression results from Model 4 are presented (see Table 4). This model includes the following variables: classification; gender (Male =1); AUDIT total score; living off campus; spirituality total score; religiosity total score; interaction between depression total score and spirituality total score; interaction between depression total score and religiosity total score.

Table 4

Model Summary for Hierarchical Linear Regression

Model	Variables Added	Adj. R^2	SE	ΔR^2	ΔF	df
1	Classification, Gender	0.04	4.85	0.04	12.53**	2, 575
2	Depression, Live Off Campus	0.08	4.76	0.04	12.36**	2, 573
3	Spirituality, Religiosity	0.10	4.70	0.03	8.35**	2, 571
4	Depression X Spirituality Depression X Religiosity	0.11	4.66	0.02	5.19*	2, 569

*$p < .01$, **$p < .001$

Table 5 presents the standardized coefficients for each of the four models evaluated in the hierarchical linear regression. These results indicated that, although small, there are some indirect moderating relationships present in the data. The most notable moderating relationship is with the introduction of the depression and spirituality interaction term. With this interaction in effect, the direct relationship between depression and AUDIT scores is no longer statistically significant. Rather, there is a moderate relationship (Beta =.026) between the interaction term and AUDIT scores. Additionally, being of the male gender, living off campus, and religiosity were all significant predictors

of AUDIT scores. The inverse standardized coefficient (Beta = -.21) for religiosity

indicates that increasing religiosity values are associated with decreasing AUDIT scores.

Table 5

Test Statistics for All Four Models Used in Hierarchical Linear Regression Analysis

Model		SE	Beta	*t*	Sig.
1	(Constant)	0.48		3.34	.001
	Male	0.44	0.16	3.92	.000
	Classification	0.17	0.13	3.10	.002
2	(Constant)	0.56		1.26	.209
	Male	0.44	0.17	4.22	.000
	Classification	0.22	0.03	1.40	.162
	Live off Campus	0.55	0.11	2.13	.034
	Depression Total	0.03	0.18	4.57	.000
3	(Constant)	0.97		3.54	.000
	Gender (Male = 1)	0.44	0.14	3.60	.000
	Classification	0.22	0.06	1.18	.239
	Live off Campus	0.54	0.12	2.26	.024
	Depression Total	0.03	0.14	3.54	.000
	Spirituality Total	0.04	0.07	1.68	.093
	Religiosity Total	0.04	-0.17	-4.04	.000
4	(Constant)	1.27		4.10	.000
	Male	0.43	0.14*	3.50	.000
	Classification	0.22	0.07	1.37	.17
	Live off Campus s	0.55	0.11*	2.04	.042
	Depression Total	0.10	-0.15	-1.13	.26
	Spirituality Total	0.05	-0.06	-1.02	.31
	Religiosity Total	0.06	-0.21**	-3.35	.001
	Interaction Depression X Religiosity	0.01	0.10	0.81	.418
	Interaction Depression X Spirituality	0.01	0.26**	2.89	.004

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

A hierarchical logistic regression was conducted (shown in Table 6) and results

indicated that the best fitting model was model 2. This model used the following

variables: living off campus with friends and gender. The total AUDIT scores were then

used to predict classification into a low-risk or high-risk drinking group. As seen in Table

6 block 2 was a significant improvement over block 1 in this area. However, the block 3 addition of religiosity and spirituality total scores did not significantly improve the ability to classify participants as low or high risk drinkers.

Table 6

Model Summary for Hierarchical Logistic Regression

Model	Variables Added	χ^2	*df*	sig.
Block 1	Live off campus, gender (male = 1)	26.774	2	0
Block 2	Depression Total Score	7.665	1	0.006
Block 3	Spirituality Total, Religiosity Total	3.443	2	0.179

Table 7 indicates that the strongest prediction of classification as a high-risk drinker was being of the male gender. As seen in this logistic regression, males are more than 3 times as likely as females to be classified as either high risk for drinking-related problems or alcohol dependence. Additionally, living off campus with friends was also a strong predictor for being classified in the high-risk drinking group. Depression was statistically associated with classification in the high-risk group, but the odds ratio (1.05) suggests that the effect of depression on classification as a high-risk drinker is small.

Table 7

Model 2 Logistic Regression Results

Variable	B	SE	Wald	*df*	Sig.	Odds R.	95% C.I.for EXP(B)	
							Lower	Upper
Live off campus	0.70	0.25	7.84	1	0.005	2.01	1.23	3.27
Gender: male(1)	1.18	0.25	22.75	1	0.000	3.24	2.00	5.25
Depression	0.05	0.02	7.95	1	0.005	1.05	1.02	1.09
Constant	-2.86	0.26	115.92	1	0.000	0.06		

CHAPTER V

DISCUSSION

A large proportion of male participants (25.4%) were coded as being at high risk for having alcohol-related problems or developing an alcohol use disorder. Because the sample was self-selected there is now way of knowing how well this number reflects the overall male undergraduate population. However, the number is very similar to the 24% Slutske (2005), in a nationally representative sample of U.S. college males, identified as having significant alcohol-related problems. In addition, the proportion of females who had AUDIT scores identifying them as high risk for alcohol-related problems (10.2%) is similar to the 13% Slutske reported. The most straightforward interpretation, therefore, is that the proportion of students with significant drinking-related problems, at this university, is very similar to that found in the general population of college and university students.

The higher than chance proportion of students who participate in social clubs and who were categorized as being at high-risk for developing drinking-related problems is subject to multiple interpretations. One such interpretation is that social clubs encourage risky drinking. Caution is needed, however, in interpreting these results that way because the research design cannot control for time-order or the effects of extraneous variables. Of equal plausibility are explanations such as:

1. Extraneous variables might predispose some to join social clubs and to develop risky drinking patterns.

2. Those who are already engaged in risky drinking might be more inclined to join social clubs.

3. Social clubs might be biased toward selecting persons with risky drinking behaviors.

Results indicated that depression has an indirect effect on drinking behavior that is moderated by spirituality. As indicated by the positive beta coefficient, the linear combination of depression and spirituality is positively associated with drinking. In other words, the study indicated that as students' spirituality increased the effect that depression had on their AUDIT scores also increased. A possible interpretation of this interaction is that the effect depression exerts on drinking patterns, in persons with lower spirituality scores, is weak to nonexistent. However, in contrast, the combined effect of increased spirituality and increased depression appears to predict higher drinking scores.

At the low end, when spirituality was minimal, the effect of depression on drinking was also minimal. However, at the upper end, when spirituality levels were high, depression had a larger effect on drinking patterns. Ultimately, the magnitude of the effect of the independent variable (i.e., depression) on the dependent variable (i.e., AUDIT scores) changes depending on a change in the level of the moderating variable (i.e., spirituality). Again, multiple interpretations are possible.

Because this data is cross-sectional, the independent, dependent, and moderating variables were chosen somewhat arbitrarily. Therefore, caution must be used in interpreting this interaction; it is just as plausible that spirituality moderates a relationship between drinking (i.e., as the independent variable) and depression (i.e., as the dependent variable). Equally plausible is the possibility that spirituality could also serve as an

independent variable. In other words, when persons with higher spirituality scores drink (i.e.,), they experience increased depression. Further research is required to establish the nature of these relationships.

Limitations

Several limitations need to be taken into account when reviewing the findings of this study. Due to the survey method used for data collection, the researchers had no control over who responded to this study. Students were provided with an electronic link to the survey, which gave free range for students to distribute the link to external sources should they desire to do so. Not having a truly randomized sample is a limitation to the overall validity of this study. Additionally, as with any self-reporting tool, the accuracy of the information reported is unable to be confirmed. While it is hoped that students answered the survey questions truthfully and precisely, the combination of the sensitive and personal nature of the questions, the stigma attached to consuming alcohol while at a Christian university, and time restraints are plausible reasons that the data from the research may have been compromised.

A further limitation to this study is the lack of an "other" option, for gender selection, for participants who do not identify independently as either male or female. Although it is suspected that the percentage of students who may not be identify as male or female is relatively small at Abilene Christian University, this lack of data prevented researchers from determining how students who identify as transgender, specifically, interact with the variables studied.

An additional significant limitation to this study is the arbitrary nature of the independent and dependent variables. As discussed previously, the researchers had no

way to determine, for instance, if alcohol use, depression, or spirituality came first in students' time order. This means it is impossible to know if a student's depression level impacts drinking patterns, or if drinking patterns cause depressive tendencies. If the true time order of the variables had been able to be determined, the researchers would have been able to assign the dependent and independent variables more certainly, giving greater reliability to the strength of the moderating variable.

Implications for Social Work Practice

As presented in the Review of Literature, drinking is a prevalent occurrence for college students in a university setting. It is imperative for social workers whose clients are either in the college age demographic or are in different demographics but may struggle with alcohol abuse to understand how the variables of spirituality and mental illness are associated with drinking. Knowing that clients' levels of spirituality is an interchanging variable with drinking patterns may impact intervention method that the social worker chooses to use in working with clients who are at risk for alcohol dependence.

Additionally, as was reported in Tables 1 and 2, males at Abilene Christian University are statistically more at-risk to develop a drinking problem than are females, as are those who are involved in a social club on campus. It is important to recognize that drinking is a significant concern on college campuses and that Abilene Christian University is not exempt from the need for prevention and intervention programs.

Implications for Further Research

As mentioned in the discussion, the variables for this research were chosen rather arbitrarily, because it was impossible with the instruments used to determine the timeline

of spirituality, religiosity, depression, and alcohol use in relation to each other. Meaning, there is no way to know whether depression is a cause of alcohol use, or vice versa. There appears to be interacting variables that could be better understood with further research identifying a time order for these variables.

Conclusion

This quantitative cross-sectional research study served to better understand the association between alcohol use, spirituality and religiosity, and depression in college students at a Christian university. Through a survey method, the researcher gathered data from 581 undergraduate college students on their drinking patterns, spirituality and religiosity practices, and depression tendencies. The frequencies from this data showed that 14.6% of the students sampled presented an AUDIT score over 8, putting them in the high risk-drinking category. Variables that influenced a higher AUDIT score included being of the male gender, living off campus, and participating in a social club. A higher depression score was also a factor in predicting at-risk drinking, though its effect was minimal.

A hierarchical logistic regression was used to determine the association between the dependent, independent, and moderating variables. This regression concluded that depression is a moderating variable between alcohol use and spirituality, dependent on the level of spirituality. Meaning, as both spirituality and depression levels rise, so do AUDIT (drinking) scores. However, when spirituality is low, the effect of depression as a moderator on drinking is minimal.

The results from this research further confirm that drinking is a prevalent issue on Abilene Christian University's campus. Recommendations have been made that this

University take into account the role that student's mental health and spiritual practices may have on their drinking pattern when implementing intervention programs. Additionally, the researcher concludes that implementing helpful prevention programs for students who are moving off campus or who are participating in a social club may be helpful in lowering the rate of at-risk drinking.

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APPENDIX A

IRB APPROVAL LETTER

Institutional Review Board Approval Letter

ABILENE CHRISTIAN UNIVERSITY
Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9105
325-634-2885

2/26/2016

Kylee Craggett
Department of Social Work
ACU Box 27866
Abilene Christian University

Dear Ms. Craggett:

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled **The Association Between Spirituality, Depression, and Drinking Patterns in College Students at a Christian University**

was approved by expedited review (46.110(b)(1) category 7) on 2/22/2016 for a period of **one year** (IRB # 16-016). The expiration date for this study is 2/22/2017 . If you intend to continue the study beyond this date, please submit the Continuing Review Form at least 30 days, but no more than 45 days, prior to the expiration date. Upon completion of this study, please submit the Inactivation Request Form within 30 days of study completion.

If you wish to make **any** changes to this study, including but not limited to changes in study personnel, number of participants recruited, changes to the consent form or process, and/or changes in overall methodology, please complete the Study Amendment Request Form.

If any problems develop with the study, including any unanticipated events that may change the risk profile of your study or if there were any unapproved changes in your protocol, please inform the Office of Research and Sponsored Programs and the IRB promptly using the Unanticipated Events/Noncompliance Form.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

APPENDIX B

DEPRESSION INSTRUMENT

Patient Health Questionnaire (PHQ- 9)

Patient Name		Date		
Over the last 2 weeks, how often have you been bothered by any of the following problems? Read each item carefully, and circle your response.				
	Not at all	**Several days**	**More than half the days**	**Nearly every day**
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling asleep, staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself, feeling that you are a failure, or feeling that you have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thinking that you would be better off dead or that you want to hurt yourself in some way	0	1	2	3
Totals (add columns)				

If you checked off any problem on this questionnaire so far, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?			
Not Difficult At All	**Somewhat Difficult**	**Very Difficult**	**Extremely Difficult**
0	**1**	**2**	**3**

Total Score	**Depression Severity**
1-4	Minimal Depression
5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression
20-27	Severe depression

APPENDIX C

RELIGIOUSNESS AND SPIRITUALITY INSTRUMENT

Expressions of Spirituality Inventory

Douglas A. MacDonald 1997

This is a questionnaire which concerns your experiences, attitudes, beliefs, and lifestyle practices pertaining to spirituality. Below are several statements. Read each statement carefully. Using the five point scale described below, rate the extent to which you agree with each statement as it applies to you and put your response in the space provided. There are no right or wrong answers. Please respond to every statement as honestly as possible.

0----------------------1----------------------2----------------------3------------------4

| Strongly | Disagree | Neutral | Agree | Strongly |
| Disagree | | | | Agree |

Spirituality (Experimental/Phenomenological Dimension) Subscale

_____ 2. I have had an experience in which I seemed to be deeply connected to everything.
_____ 7. I have had an experience in which I seemed to transcend space and time.
_____12. I have had a mystical experience.
_____17. I have had an experience in which I seemed to merge with a power or force greater than myself.
_____22. I have had an experience in which all things seemed divine.
_____27. I have had an experience in which I seemed to go beyond my normal everyday sense of self.

Religiousness Subscale

_____5. I believe that going to religious services is important.

_____10. I feel a sense of closeness to a higher power.
_____15. I see myself as a religiously oriented person.
_____20. I see God or a higher power present in all things I do.
_____25. I practice some form of prayer.
_____30. I believe that God or a higher power is responsible for my existence.

APPENDIX D

ALCOHOL USE INSTRUMENT

Alcohol Use Disorders Identification Test (AUDIT)

1. How often do you have a drink containing alcohol?
   a. Never (Skip to Questions 9-10)
   b. Monthly or less
   c. 2 to 4 times a month
   d. 2 to 3 times a week
   e. 4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?
   a. 1 or 2
   b. 3 or 4
   c. 5 or 6
   d. 7, 8, or 9
   e. 10 or more
3. How often do you have six or more drinks on one occasion?
   a. Never
   b. Less than monthly
   c. Monthly
   d. Weekly
   e. Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?
   a. Never
   b. Less than monthly
   c. Monthly
   d. Weekly
   e. Daily or almost daily
5. How often during the last year have you failed to do what was normally expected from you because of drinking?
   a. Never
   b. Less than monthly
   c. Monthly
   d. Weekly
   e. Daily or almost daily

6. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
   a. Never
   b. Less than monthly
   c. Monthly
   d. Weekly
   e. Daily or almost daily
7. How often during the last year have you needed an alcoholic drink first thing in the morning to get yourself going after a night of heavy drinking?
   a. Never
   b. Less than monthly
   c. Monthly
   d. Weekly
   e. Daily or almost daily
8. How often during the last year have you had a feeling of guilt or remorse after drinking?
   a. Never
   b. Less than monthly
   c. Monthly
   d. Weekly
   e. Daily or almost daily
9. Have you or someone else been injured as a result of your drinking?
   a. No
   b. Yes, but not in the last year
   c. Yes, during the last year
10. Has a relative, friend, doctor, or another health professional expressed concern about your drinking or suggested you cut down?
    a. No
    b. (2) Yes, but not in the last year
    c. (4) Yes, during the last year

Add up the points associated with answers. A total score of 8 or more indicates harmful behavior.