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An Examination of State and Trait Anxiety Levels among College Students Based on the Students' Alcohol Usage

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AN EXAMINATION OF STATE AND TRAIT ANXIETY LEVELS AMONG

COLLEGE STUDENTS BASED ON THE STUDENTS' ALCOHOL USAGE

A Dissertation

Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for

the degree of Doctor of Philosophy

By

Richard Kovalesky

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DUQUESNE UNIVERSITY
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AN EXAMINATION OF STATE AND TRAIT ANXIETY LEVELS AMONG
COLLEGE STUDENTS BASED ON THE STUDENTS' ALCOHOL USAGE

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ABSTRACT

AN EXAMINATION OF STATE AND TRAIT ANXIETY LEVELS AMONG

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Richard Kovalesky

August 2010

Dissertation supervised by Joseph Maola

This study examines anxiety and level of alcohol consumption among college freshman and sophomore student's to determine if state and trait anxiety are significant factors in high risk alcohol consumption or binge drinking. The State Trait Personality Inventory (STPI) and the Alcohol Use Disorders Identification Test (AUDIT) were administered to gather data on anxiety and alcohol consumption level. The investigation seeks to identify specific personality factors in college students' that impact high risk alcohol consumption and binge drinking in the undergraduate population. Specifically, state and trait anxiety are examined to determine their effect upon college freshmen and sophomores drinking practices. The study provides an understanding of the effect of anxiety on college students. This information is evaluated so that student affairs department's and counseling centers can work together to identify factors behind high

risk alcohol consumption and develop programming to address wellness and the

prevention of excessive alcohol usage in the undergraduate population. This study

examines the literature regarding the changing mental-health needs of the 21st-century

student and also investigates the drinking practices of first and second year students to

further understand the factors behind excessive alcohol usage and binge drinking.

ACKNOWLEDGEMENTS

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CHAPTER ONE

INTRODUCTION

Introduction

Arthur Chickering is a prominent author noted for his theory of college student

development. He identified seven vectors of student development (Chickering, 2009).

This study applies Chickering's second vector, emotional management, to examine the

relationship between students' emotional disposition of anxiety and alcohol usage.

Chickering (2009) found that undergraduate students experience anger, fear, hurt,

longing, boredom, and tension when beginning or returning to college. Chickering's

findings also indicate that anxiety, anger, depression, desire, guilt, and shame are

prevalent in the freshman and sophomore population. He noted that ineffective emotional

management has the potential to negatively affect the educational process (Chickering,

2009). When students ignore the feelings noted above, their behaviors may become

excessive and leave them with overwhelming feelings of anxiety. Chickering (2009)

states that the task in the second vector of emotional management is not to eliminate

emotions of anxiety but to bring these emotions into awareness, acknowledge them, and

then validate them.

Existing research indicates that excessive alcohol use is a significant problem

impacting the success, health, and development of the undergraduate population

(National Survey on Drug Use and Health, 2006 & Syre, 1999). Ongoing research

addressing alcohol usage remains a significant area of study (Jung, 2003). This

investigation seeks to identify specific personality factors in college students that impact

the undergraduate population in order to identify factors impeding undergraduate students' academic success, health and personal and professional development.

Chickering (2009) also states that normal development proceeds when students learn appropriate coping techniques for releasing irritations and dealing with fears before they effect academic matriculation and personal development. He suggests that students need to develop healthy coping mechanisms to accept tension and determine how to manage anxiety. Chickering, (2009) recommends students learn to exercise self-regulation rather than using repression as a coping mechanism. Chickering (2009) further states that undergraduate students need to learn to develop a balance between self-control and self-expression and develop an awareness and integration of their feelings. He emphasizes the importance of a student's need to identify how complex principles of development support each other and impact the development of the self. Chickering's (2009) theory is centered on identifying or bonding with one another and feeling part of a larger whole. Similarly, Busteed (2008) supports research that provides understanding and affects the attitudes, beliefs, and values of college students.

Statement of the Problem

This study will examine the emotional disposition of college freshmen and sophomores at a university in northeastern Pennsylvania to determine if anxiety is a significant factor in excessive alcohol drinking practices. In an effort to identify and understand underlying factors that may contribute to such behaviors in college freshmen and sophomores, this investigator will examine state and trait anxiety to determine if the emotional disposition of college students is a significant factor in drinking behavior. The university received support in the form of a grant from the Pennsylvania Liquor Control

Board to conduct the study and this investigator was invited to become part of the research team due to the investigators interest and experience in college student development and student affairs programming.

Purpose of the Study

The purpose of this study is to determine if the emotional disposition of anxiety is a significant factor in excessive alcohol usage among students in the undergraduate population. A recent National Survey on Drug Use and Health discovered that 57.8% of full-time college students aged 18 to 20 years had consumed alcohol in the past month and that 40.1% of the students in the survey engaged in binge drinking with 16.6% engaging in heavy drinking (NSDUH, 2006). Reifman and Watson (2003) reported that heavy drinking by college students has been associated with student deaths, injuries, sexual abuse, increased dropout rates, and poor academic performance. They indicate that binge drinking is among the top five challenges in American higher education. Research indicates that college-bound high school students generally drink less than their peers, but their alcohol consumption surpasses that of their non-college peers during the college years; and drinking behavior then decreases after a student finishes college (Jackson, 2009). Chapman (2007) found that students tend to "mature out" of their high-risk drinking behaviors during the first three to four semesters of a college career. These changes may be due to experiences and learned behaviors related to drinking, basic issues of human development, or a combination of the two.

The acting surgeon general recently reported the results from the 2006 NSDUH report that alcohol was found to be the most widely used and abused substance among our nation's youth. The 2006 survey estimated that the rate of alcohol use among youth

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was approximately 17 %, about 11 million persons aged 12 to 20 reported drinking alcohol in the 30 days prior to the survey. Approximately 7 million were binge drinkers and 2 million were heavy drinkers (Galson, 2008).

Utilizing Arthur Chickering's theory of student development, specifically the second vector of emotional management, this investigator examined freshmen and sophomores' emotional disposition of anxiety and drinking practices to determine if state and trait anxiety are significant factors in excessive alcohol usage in the undergraduate population.

Rationale for the Study

The motivation for studying factors that impact alcohol drinking patterns in the undergraduate population is based on current research reported by Acting Surgeon General Steven Galson and on his recommendations presented August 20, 2008 at Montana State University titled "Reducing Underage Drinking on America's Campuses". He encouraged college executives, administrators, and faculty to take seriously their responsibility to ensure that the college experience enables young people to make sound decisions and realize their full potential. Galson (2008) stated that the college experience provides for the development of lifelong skills and that the college experience should provide students academic, social, and emotional resources leading to the greatest chance for professional success. Underscored is the importance of bringing people and resources together in order to influence the culture that ultimately influences the decisions that students make about alcohol and other drug usage (Galson, 2008). Unfortunately, the college environment itself may contribute to college students' risk of excessive alcohol and other related harm (Galson, 2008).

Galson (2008) further reported that the brain continues to develop well beyond childhood, through adolescence and into a person's twenties. NSDUH (2006) findings indicate that development of the brain has significant implications regarding decision-making. This may include decisions about alcohol and other drug usage. During adolescence, hormonal changes influence maturation of various brain functions and mood. Neuroscientists tell us that what we know to be typical teenage behavior actually has its roots in development of the brain (Galson, 2008). Neuroscientists believe that the prefrontal cortex develops gradually during adolescence and since this area of the brain influences self-regulation, planning, and so-called executive functions, there is a temporal gap between the system driving emotions and the not fully mature self-regulatory system (NSDUH, 2006).

Galson (2008) reported that alcohol is a main cause of death and the leading contributor to death from injuries in the under-21 age group. Research also indicates that alcohol is a significant contributor to risky sexual behavior, such as unwanted, unintended, and unprotected sexual activity. Alcohol usage increases the risks of physical and sexual assault. Reports indicate that approximately 600,000 students are unintentionally injured while under the influence of alcohol (Hingson, Heeren, Zakocs, Kopsstein, & Weschler, 2005).

An estimated 700,000 students are assaulted by other students who have been drinking and about 100,000 students are reported to be victims of alcohol-related sexual assault or date rape (Hingson, et al. 2005). Galson (2008) demonstrates the reality that students at every level are being harmed by excessive alcohol usage and the acting

surgeon general has provided a call to action to address excessive alcohol usage at both the state and community level.

In the fall semester of 2008, television show 60 Minutes featured a group of over 100 college presidents who identified concerns about excessive alcohol consumption on college campuses across the United States. Following this report a national debate ensued about alcohol usage on college campuses. John McCardell, former president of Middlebury College in Vermont reports that current efforts such as utilizing and enforcing the legal drinking limit of 21 years, has not reduced or eliminated drinking. He stated it has driven college students underground, behind closed doors, into the most risky and least manageable of settings (McCardell, 2009). He reported that the law has created a dangerous culture of irresponsible and reckless behavior, including unsupervised binge and extreme drinking. Mark Beckner, Boulder Colorado's Chief of Police at the University of Colorado, supports McCardell's position. He reported that he encounters underage drinking every day. In the 60 Minutes interview, Beckner stated "We are not in a situation where we can stop it and suggest that the best we can do is try to contain it". The Boulder Colorado Police Department has tried many different kinds of enforcement techniques over the years and report that they have pushed alcohol and possibly other drug usage problems further underground.

In a recent study published in the Journal of American College Health (Eisen, Kushner, McLeod, Queen, Gordon, & Ford, 2009) the researchers indicate that the problem of alcohol usage continues as a current issue in the undergraduate college population and they recommend an integrated, interdisciplinary approach to addressing alcohol use on college campuses. They indicate that alcohol usage problems are lenses

into the strengths and limitations of student affairs services and programming including counseling services available to students. Current research reports that a significant number of students on U.S. college campuses have an existing diagnosis of depression and/or anxiety and this makes it even more essential for student affairs and researchers to examine alcohol use among the undergraduate population (Ross, 2004).

Arthur Chickering's theoretical model of student development titled the "Seven Vectors" (1993) will be utilized to explore emotional management by focusing on anxiety in order to understand its effects on alcohol usage in the undergraduate student population. Chickering (2009) discovered that when students are new to college or returning to college they experience anger, fear, hurt, longing, boredom, and tension, resulting in high levels of anxiety. Chickering (2009) suggests that by allowing anxiety into awareness and acknowledging anxiety as a signal, students can get in touch with their full range and variety of feelings and learn to exercise self-regulation rather than using repression, which may lead to heavy or binge drinking. As self-control and self-expression come into balance, awareness and integration ideally support each other (Chickering, 2009). Therefore, state and trait anxiety personality attributes are examined in this investigation to determine if those attributes are a significant factor in undergraduate students' alcohol consumption. It is this investigator's opinion that by utilizing Chickering's theory of student development, particularly the second vector of emotional management, undergraduate students could learn to make more responsible decisions about excessive alcohol consumption.

Significance of the Study

Ross (2004) reports that anxiety and alcohol use has not been thoroughly studied and that the existing data is contradictory, inconclusive, and sparse. The number of students coming to college with depression and/or anxiety is increasing and these students are more likely than their peers to use alcohol excessively (Ross, 2004). Ross's theory appears to be supported by the World Health Organization (2006) which stated that "normally, emotions such as anxiety, anger … pain or joy interact to motivate a person to a goal-directed action. However, when certain emotions predominate and persist beyond their usefulness in motivating people for their goal-directed behavior, they become morbid or pathological." This may explain why students with extensive anxiety consume alcohol excessively. (p. 1)

Alcohol usage continues to be a serious problem for colleges and universities across the United States (Syre, 1999). Research indicates there is a dominant institutional shift in higher education to address alcohol usage on college campuses in the undergraduate population (Galson, 2008). Alcohol usage is reported to have negative consequences to students' success, health, and development (Hingson, et al. 2005). Understanding significant factors in student development and utilizing student affairs departments to address wellness and the prevention of excessive alcohol usage in the undergraduate population can be an effective intervention (Busteed, 2008).

If colleges and universities can better understand and address students' emotional disposition it may lead to improvements in student health and development. By researching the relationship between anxiety, gender, and excessive alcohol usage in the undergraduate student population, the research may lead to improving and developing

programs so that students will be able to better understand their emotional disposition, validate their emotions, and consequently learn more appropriate coping techniques. In addition, it may reduce the risk of using alcohol as a coping technique and would occur before potential excessive alcohol usage affects students' academic performance and their interpersonal relationships.

Research Question

This study investigated state and trait anxiety, to determine they are significant factors that impact alcohol use in the freshmen and sophomore population at a northeastern Pennsylvania university. This investigation also examined state anxiety and trait anxiety by gender to determine its significance.

Hypotheses

1. There is no significant difference in state anxiety among college students who are differentiated by their level of alcohol consumption.

2. There is no significant difference in trait anxiety among college students who are differentiated by their level of alcohol consumption.

3. There is no significant difference in state anxiety and gender among college students who are differentiated by their level of alcohol consumption.

4. There is no significant difference in trait anxiety and gender among college students who are differentiated by their level of alcohol consumption.

Limitations and Strengths

There were a number of threats to internal validity that applied to the present study. One weakness of this study is the fact that the group of students from this university may not be a representative sample of general university populations as would have been optimal for comparison purposes. A further limitation is that operational definitions of anxiety and alcohol levels used in this study, they may not be adequate to apply to other research. Finally, the instruments utilized in the study were self-report instruments and students may have under reported or over reported anxiety or alcohol usage which may have influenced the results of the study. A potential strength of the study is that the current findings provide opportunities in terms of clear targets for interventions, particularly in the direction of continued efforts to change social norms surrounding alcohol use in general, and high risk patterns of alcohol use.

Definition of terms

To establish a clear understanding of the constructs used in this study several terms need to be defined.

<u>Anxiety</u>

Anxiety is characterized by subjective feelings of tension, apprehension, nervousness, and worry activating and arousing the autonomic nervous system (Spielberger, 1983). Anxiety is classified by various disorders and each disorder has different symptoms, but all the symptoms cluster around excessive, irrational fear and dread (National Institute of Mental Health, 2009).

State Anxiety

State anxiety is defined as a transitory emotional state that varies in intensity and fluctuates over time (Spielberger, 1983). State anxiety also refers to an unpleasant emotional state or condition that is comparable to the conception of fear (Spielberger, et. al. 1995). State anxiety measures the intensity of feelings of anxiety as an emotional state at a particular time (Spielberger & Reheiser 2009). Individuals with high state anxiety experience relatively intense feelings of tension at the time state anxiety occurs. If state anxiety is elevated, feelings are influenced by situational factors that are interpreted as indicating present or anticipated danger, or by thoughts relating to traumatic past events associated with the present situation (Spielberger & Reheiser, 2009).

Trait Anxiety

Trait anxiety is defined as a stable tendency to perceive stressful situations as dangerous or threatening (Spielberger, 1983). Trait anxiety is conceptualized in terms of relatively stable individual differences in proneness to anxiety (Spielberger, et. al. 1995). Trait anxiety measures individual differences in anxiety proneness as a personality trait as indicated by how often feelings of state anxiety are experienced over time (Spielberger & Reheiser, 2009). Persons high in trait anxiety experience more frequent and intense feelings of state anxiety in situations perceived as dangerous or threatening, or when feeling inadequate in interpersonal relationships (Spielberger & Reheiser 2009).

AUDIT Cutoff Scores

The Alcohol Use Disorders Identification Test (AUDIT) contains questions on the amount and frequency of drinking, alcohol dependence, and on problems caused by alcohol to include adverse psychological reactions caused by alcohol consumption.

"Cutoff scores" pertain to categories on the AUDIT including: no alcohol consumption, low-level of alcohol consumption, moderate-level of alcohol consumption, and high-level of alcohol consumption. (WHO/PSA/92.4, AUDIT test manual).

Non-drinking

Non-drinking is measured and identified by a cutoff score of 0-1 as indicated on the AUDIT (Babor, et al., 1992) and further is defined as a student who reported to never or infrequently consume alcohol during a 2-week period immediately before the survey and within the last year.

Low-level drinking

Low-level drinking is identified as obtaining a cutoff score of 2-5 indicated by the AUDIT (Babor, et al., 1992) and further is defined as the consumption of 2 drinks in a row during the 2-week period immediately before the survey (Wechsler & Nelson, 2008).

Moderate-level drinking

Moderate-level drinking is measured by a cutoff score of 6-8 as indicated on the AUDIT (Babor, et al., 1992) and further is defined as the consumption of 3-4 drinks in a row during the 2-week period immediately before the survey (Wechsler & Nelson, 2008).

High-level drinking

High-level drinking is measured by a cutoff score of a score of 9 or more as indicated on the AUDIT (Babor, et al., 1992) and further is defined as the consumption of five or more drinks in a row on one or more occasions during the 2-week period immediately before the survey (1992, WHO/PSA/92.4; Wechsler & Nelson, (2008). Alcohol dependence is a cluster of behavioral, cognitive, and physiological phenomena that may develop after repeated alcohol use. These phenomena include a strong desire to

consume alcohol, impaired control over its use, persistent drinking despite harmful

consequences, a higher priority given to drinking rather than doing other activities and

meeting obligations, increased alcohol tolerance, and a physical withdrawal reaction

when alcohol use is discontinued (WHO/PSA/92.4).

Summary

Alcohol consumption, particularly high-level drinking and binge drinking is a

serious problem for colleges and universities (Galson, 2008; Hingson, et al. 2005). This

investigation examined freshmen and sophomores' drinking behaviors to determine if

state and trait anxiety personality attributes are a significant factor impact alcohol use.

CHAPTER TWO

LITERATURE REVIEW

Introduction

      This review begins by examining current research related to alcohol usage in today's college student population followed by an examination of the literature concerning personality attributes and their relationship to alcohol usage and anxiety during college students' development.

Drinking Behavior among College Students

Misuse of alcohol by our nation's youth has been reported to be a major societal problem for the last 30 years (Core Institute, 2004). Baer (2002) indicates that there is a variation in drinking habits among college students; alcohol consumption is not uniform in the population. Baer (2002) further stated:

> For example, in an analysis by Wechsler et al. (1999), the statistical average for consumption of alcohol in a week by a college student is about five standard drinks. Variability, however, is high. In the Wechsler et al. (1999) report, the top 17% of the sample (those students who drink heavily and frequently) consumed 68% of all alcohol drunk by college students. The 56% of students who do not drink heavily consumed only 9% of the total alcohol consumed. (p. 1)

      The National Survey on Drug Use and Health (2006) reveals that even though that variation in drinking behaviors among college students exists, much attention has

been drawn to alcohol use and binge drinking. To clarify the seriousness of the problem it must be noted that the majority of studies indicate that alcohol use among college students is a significant public health problem (Eshbaugh, 2008).

To understand the nature, scope, and consequences of alcohol use on the college campus, researchers need to understand campus patterns and campus needs (Core Institute, 2004). The Core Institute (1994) reported that alcohol usage in the undergraduate population adversely affects the entire campus community. Solving alcohol use problems on our nation's college campuses therefore requires broad-based and creative efforts from numerous student affairs offices.

The Core Institute examined the social milieu of the college campus by collecting data on students' perceptions of alcohol use and misuse, institutional alcohol policies, students' preference for the availability of alcohol, family histories of substance abuse, alcohol use in residence locations, and policies that impact the college environment. The monograph also provides an analysis of regional institutional differences. This report utilizes the data from 107 institutions throughout the United States. Eighty nine institutions were randomly selected to collect data from 45,632 students attending 17 two-year and 72 four-year institutions.

Information from the monograph is presented and used to examine and determine policy, consequences of alcohol violations, and prevention programming. An overview of key findings demonstrates that both college men and women at small institutions (enrollment under 2,500) consume more alcohol per week than their peers at larger institutions. Analysis of alcohol consumption by region indicated that students in the Northeastern region consumed more alcohol than the South, with 5.9 drinks per week per

student as compared to 3.5 drinks. The North Central region had the second-highest consumption level with 4.6 drinks per week and students in the Western region reportedly consumed 4.1 drinks per week. In addition, students living on campus consumed more alcohol and reported more episodes of binge drinking than students living off campus. In addition, one in six of the students or 17.2% reported that their fathers had a substance abuse problem.

At both two and four-year institutions twice as many men as woman consumed alcohol three or more times per week and males reported higher levels of binge drinking than did females. Overall, results indicate that 16% of students reported three or more binge drinking episodes during a two-week period with males out-drinking females at a ratio of 2:1, 23.6% of males and 9.9% of females.

Students under the legal drinking age consume greater quantities of alcohol, engage in more binge drinking, and report more adverse consequences from their alcohol use than do college students of legal drinking age. In addition, students who self-reported to be heavy drinkers obtained the lowest grades, with men and women performing the same.

Personality Attributes of Contemporary College Students

In a pilot study conducted by the Center for the Study of Collegiate Mental Health (CSCMH, 2009), data was collected from 28,000 students in 66 institutions throughout the United States during the 2008 fall semester. It was reported that a highly complex and multifaceted phenomenon is occurring in student development centering on the students' ability to cope with stress and their classroom behavior, residential life, and activities. Today's students are diverse in terms of age, ethnicity, socio-economic level, sexual

orientation, enrollment status, and especially in terms of expectations, attitudes, intellectual capabilities, and learning styles (Schroeder, 2003).

American higher education is challenged to identify and deliver what students want, need, and expect from their collegiate experience and to develop practices and design communities that promote learning through enhancing educational experiences. In addition, higher education must respond to the challenging needs of learners by addressing diversity and fostering student development outside of the classroom (Schroeder, 2003). College is a particularly stressful time and students experience stressors that may contribute to the development of problems such as academic difficulty, fatigue, depression, anxiety, eating disorders, psychiatric illnesses, and stress. These problems may disrupt the completion of normal developmental and educational tasks (Burris, Brechting, Salsman, & Carlson, 2009).

Pascarella and Terenzini (1991) identified psychosocial changes that occur during college by focusing on relational systems in six distinct areas: 1) autonomy, independence, and locus of control; 2) authoritarianism, dogmatism, and ethnocentrism; 3) intellectual orientation; 4) interpersonal relations; 5) personal adjustment and psychological well-being; and 6) maturity and general personal development.

In describing these relational systems, Pascarella and Terenzini (1991) note that autonomy and independence area is characterized as a student's first opportunity to be free of the influence of others. Chickering (1969) recognizes this stage as the highest developmental stage in student development, equal to independence. In a longitudinal study conducted between 1972 and 1976 using the Rotter locus of control scale, Wolfe

and Robertshaw (1982) discovered that students shift from an external to an internal locus of control during this period of student development.

Pascarella and Terenzini (1991) examined authoritarianism, dogmatism, and ethnocentrism using the Omnibus Personality Inventory (OPI) to measure autonomy and social maturity of students. Results of their investigation indicated that four-year students during this phase of development move to a state of independence away from authority as imposed by social institutions and employ independent critical thinking skills. Chickering (1974), in a five-year longitudinal study of 13 institutions using the (OPI), similarly found that this development occurs in the first two years of college.

Pascarella and Terenzini (1991) identified that intellectual orientation, defined as general cognitive skills, communication skills, formal reasoning, critical thinking, and post-formal reasoning, characterized students' intellectual development during the four-year experience.

Complex and interconnected, interpersonal relationships change both the individual and their relational system. Pascarella & Terenzini, (1991) state "the self is not defined in isolation but at least partially by one's interactions with others" (p.273). Chickering (1974) also reported evidence related to interpersonal relationships and interactions such as social extroversion and introversion. He found extroverted students indicated a preference for being with people and seeking social activities, deriving satisfaction from others as a positive attribute. However, Chickering (1974) noted that introverted students also tend to draw from social interactions and there was no change between freshman and senior populations regarding interest in being with people or seeking out and deriving pleasure from social activities.

Pascarella & Terenzini (1991) used the OPI to assess personal adjustment and general psychological well-being during the college years. The OPI measure showed an increase in impulse expression, anxiety level, and personal integration to emotional adjustment. This research indicated an increase in students' willingness to express impulses and to seek gratification in thought and action.

Additionally, Pascarella & Terenzini (1991) evaluated maturity and general personal development. Their research indicated that students develop a clearer understanding of self, develop strengthened interpersonal skills, show an increased openness to new ideas, and develop a growing sense of self-reliance, personal discipline, and a clearer idea of abilities and career goals. Pace (1990) conducted a study in 74 colleges and universities between 1983 and 1986 utilizing 25,427 undergraduate responses on the College Student Experience Questionnaire (CSEQ). Like Pascarella and Terenzini he discovered that students indicated making substantial progress in developing their own ethical standards and values in understanding their abilities, interest, and personality.

Chickering's Theory of Student Development

Erik Erikson and Nevitt Sanford were two of the leading developmental theorists preceding Arthur Chickering's work on student development. Both Erikson and Sanford focused on describing the changing patterns of thought, emotion and behavior of college students (Chickering & Reisser, 1993). Sanford inspired others to think about student development by proposing that the role of the college is to foster development by challenging students while providing support. Sanford emphasized the importance of

disequilibrium as an essential catalyst for new learning and recognized that challenge can be overwhelming. He also proposed that too much support creates a comfort zone. He argued that the challenge for colleges is to determine how to provide a balance of challenges and support (Chickering & Reisser, 1993).

Erik Erikson's psychosocial theory published in 1959 viewed development as a series of tasks or stages, identifying qualitative changes in thinking, feeling, behaving, valuing, and relating to others and oneself (Chickering & Reisser, 1993). Erikson viewed development in stages beyond childhood and put more emphasis on social context and strengths built throughout life (Chickering & Reisser, 1993). Erikson's eight stages of psychosocial development explain how human development is accomplished from infancy to late adulthood. In each stage the person confronts and then masters new challenges, building on the successful completion of earlier stages; if not successfully completed, the stage may reappear as a problem in future (Chickering & Reisser, 1993). Erikson's eight stages of psychosocial development are 1) trust vs. mistrust; 2) autonomy vs. shame/doubt; 3) initiative vs. guilt; 4) industry vs. inferiority; 5) identity vs. role confusion; 6) intimacy vs. isolation; 7) generativity vs. stagnation; and 8) integrity vs. despair (Corsini &Wedding, 2007). Since the stabilization of identity is the primary task for adolescents and young adults, it became the anchor point for Chickering's attempt to synthesize data about college students (Chickering & Reisser, 1993).

Working from Erikson's theory of psychosocial development and other existing theories of the time, Arthur Chickering (1969) published the first edition of "Education and Identity" in which he summarized major conceptual psychosocial, cognitive, typology, and person/environment interaction theories. In his work, Chickering presented

Seven Vectors of Development, outlining a theory of college student development (Chickering & Reisser, 1993). Chickering (1969) included typology and person/environment interaction theories recognizing that they are not necessarily developmental theories but including them because they shed light on how personal characteristics effect students' experiences and can assist students in matching preferences to career plans and academic majors (Chickering & Reisser, 1993). Chickering and Reisser (1993) state the following:

> Many of our theories of student development have emerged from a rich psychological tradition that began with Freud. Adler, Jung, and Erikson kept some of his ideas, disputed and modified others, and added new perspectives. Others set off in divergent directions-Rogers and client centered counselors, Skinner and the behaviorists, Berne and the transactional analysis, Perls and the gestalt therapist, Ellis and the rational emotive therapists, and Satir and the family therapists. Personality therapists like Harry Stack Sullivan and Jean Baker Miller added insight based on clinical experiences. Like different facets of a diamond, each theory clarified a different perspective on human development, and in doing so, provided theoretical tools for college counselors and current theorist. All were interested not only in how people thought about themselves and the

world but also in how they felt, behaved, and interpreted

the meaning of experience. (p. 21)

Initially, Chickering followed in Erikson's footsteps by focusing on the interplay between autonomy, interdependence, and intimacy (Chickering & Reisser, 1993). However, as Chickering reviewed these conceptual frameworks in several combinations, he also discovered various factors effecting student development by utilizing the OPI.

Chickering's early work focused on identifying fundamental shifts in students and determining how college influences personality development. He synthesized data and created a general framework that could be used to guide educational practices (Chickering & Reisser, 1993). Chickering (1973) states that students do not come to college "tabula rasa", but bring with them influences from their mothers, fathers, families, friends, and high school peers. Students come to college with strengths, weaknesses, prides, prejudices, and unfinished business. Chickering (1973) suggests that college students develop intellectual and personal competencies by developing autonomy and learning better ways to manage complex impulses and emotions.

Throughout college, personality development proceeds along vectors of change set by the general culture of the institution and generic forces operating in society; throughout this time students work on their areas of unfinished business (Chickering, 1973). Chickering (1973) suggests the college influence acts as a womb providing a safe haven for appropriate nourishment characterized within a pluralistic society where students become more autonomous, flexible, complex and aware of their emotions and gain the ability to express their emotions through thought and action (Chickering, 1973).

The goal of development during college is to develop sharper purposes and greater integrity of the self (Chickering, 1973).

Chickering and Reisser (1993) do not portray their theory of student development as a series of predominant challenges or crisis resolutions one after another like Erickson's theory and do not ascribe to the belief that development is invariably linked to specific ages. They assert that development for college students includes virtually all ages in a process of infinite complexity but that the seven vectors theory of student development acts as a map to determine where students are and which way they are heading. The vectors describe major highways for journeying toward individualization, a unique way of being, and toward interactions with other individuals and groups to include the larger national and global society (Chickering & Reisser, 1993). Movement along any one particular vector can occur at different rates and can interact with movement along other vectors, bringing more awareness, skill, confidence, complexity, stability, and integration; and students may return to ground already traversed (Chickering & Reisser, 1993).

Chickering and Reisser (1993) define the seven vectors of student development as: 1) Developing competence; the movement from a low level of competence in one's own ability to a strong sense of competence, 2) Managing emotions; the movement from having little control over disruptive emotions such as fear, anxiety, depression, anger, and aggression to possessing flexible control and appropriate expression of emotions, 3) Moving through autonomy towards interdependence; the movement from emotional dependence, poor self-direction, and independence to a freedom from the need of continual reassurance, development of inner direction, and recognition of the importance

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of interdependence, 4) Developing mature interpersonal relationships; the movement from nonexistent, short term or unhealthy intimate relations to a tolerance and appreciation of differences, and the capacity for intimacy which is enduring and nurturing, 5) Establishing identity; the movement from discomfort with the body, gender, and sexual orientation, lack of clarity about social/cultural identity, and dissatisfaction with self to comfort with the body, gender, sexual orientation, development of self and social/cultural identity, and overall satisfaction with self, 6) Developing purpose; the movement from unclear vocational goals, scattered personal interest, few meaningful interpersonal commitments to clear vocational goals, sustained rewarding activities, and strong interpersonal family commitments, 7) Developing integrity; the movement from dualistic thinking and ridged beliefs, unclear personal values, and self-interest to humanizing and personalizing values, and social responsibility. As a humanistic model, Chickering's model of student development possesses an optimistic view of human development, assuming that a nurturing, challenging college environment will help students grow in stature and substance (Chickering & Reisser, 1993).

This investigation focuses primarily on Chickering's second vector of development, managing emotions. Chickering and Reisser (1993) state that whether a student is new to college or returning after some time they would inescapably experience feelings of anger, fear, hurt, longing, boredom, and tension. Anxiety, anger, depression, desire, guilt, and shame are very negative emotions and have the power to derail the educational process when they become excessive or overwhelming (Chickering & Reisser, 1993). Emotions experienced by new or returning college students need to be recognized to be managed. Chickering and Reisser (1993) suggest that for successful

student development to occur the key is to bring emotions into awareness and acknowledge them. Students need to learn appropriate channels for releasing irritations to deal with their emotions before they infect other relationships (Chickering & Reisser, 1993). Chickering and Reisser (1993) state that:

> Students must learn to balance self-assertive tendencies, which involve some form of aggressiveness or defensiveness, with participatory tendencies, which involve transcending the boundaries of the individual self, identifying or bonding with another, or feeling part of a larger whole. (p. 47)

Chickering and Reisser (1993) emphasize that students come to college with "emotional baggage" including repressed anger, unhealed wounds, distorted ideas about sex, festering self-doubts, old resentments, and unmet needs in varying degrees. Each semester students face anxieties related to new instructors, new subjects, and new challenges. Some students struggle with frustration, fear, boredom, or desire and never explore these feelings or learn how to shift them only focusing on what others want and not on how they feel (Chickering & Reisser, 1993). Therefore, Chickering's theoretical model of student development particularly his second vector, managing emotions, is used to examine the differences in levels of anxiety among college freshman and sophomores who report being nonusers and low, moderate, or heavy users of alcohol.

Anxiety Studies among College Students

Theoretical frameworks of student development have been around since the late 1960s and are becoming more conceptually complex yet more parsimonious (Pascarella

& Terenzini, 1991). These studies provide a framework for understanding the complex longitudinal process of the impact of college on personal development. The creation and development of analytical tools help answer empirical questions about the impact of college on students' well-being. For example, Charles Spielberger (1983) used a normative sample of over 6,000 college students in the United States to develop an inventory called the State-Trait Anxiety Inventory (STAI). The STAI measures anxiety in student populations. Spielberger (1983) defines anxiety as states that are characterized by subjective feelings of tension, apprehension, nervousness, and worry activated and aroused through the autonomic nervous system.

Spielberger (1983) identifies trait anxiety as the tendency to process stressful situations as dangerous or threatening. State anxiety is a reaction or process taking place at a given time and level of intensity. Spielberger's anxiety scale is found to be a valid and reliable instrument to assess stressful procedures and real-life stressors such as the college experience.

Brennan, Walfish, and Aubuchon (1986) reviewed the relationship between the drinking patterns of college students and anxiety and other indicators of emotional distress. They found a positive but weak relationship between emotional distress and frequency of drinking. Earleywine, Finn, and Martin (1990) examined correlations between personality measures and alcohol consumption and noted that anxiety and alcohol consumption are strongly correlated. Similarly, Pullen (1994) reported state anxiety is a predictor of drinking problems.

Brennan, Walfish, and Aubuchon (1986) reviewed drinking motives and report there are two general types. They found students drink for social purposes and for

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emotional escape or relief. Chickering and Reisser (1993) support these findings in their vector development theory, stating that during their second vector of development, managing emotions, some students have little control over emotions such as fear and anxiety leading to aggression, depression, guilt, and shame.

Summary

Drinking behavior among college students is reported to be a major societal problem (Galson, 2008; Hingson, Heeren, Zakocs, Kopsstein, & Weschler, 2005; Jung, 2003; Reifman & Watson, 2003; Syre, 1999). Alcohol consumption is not uniform in the population and attention typically focuses on alcohol misuse and binge drinking (Baer, 2002). The majority of studies indicate that alcohol use is associated with student deaths, injuries, sexual abuse, increased school dropout rates, and poor academic performance (Core Institute, 2004; Galson, 2008; Hingson, et al. 2005; NSDUH, 2006; Jung, 2003; Reifman & Watson, 2003). In addition, binge drinking is among the top five challenges in American higher education (Syre, 1999).

Personality attributes of contemporary college students demonstrate that changes occur during college and focus on relational systems in six areas (Pascarella & Terenzini, 1991). The areas identified are 1) autonomy and independence, 2) authoritarianism, dogmatism, and ethnocentrism, 3) intellectual orientation or general cognitive skills, 4) interpersonal relationships, 5) personal adjustment and psychological well-being, and 6) maturity and general personal development. Anxiety studies among college students provide a framework for understanding the complex longitudinal process of the impact of college. Some researchers have reviewed the relationship between drinking patterns of college students and anxiety (Brennan, et al., 1986). Anxiety levels are predictors of

drinking problems; students drink for social purpose and for emotional escape or relief. In addition to anxiety, students also suffer from depression. Ross (2004) reported that significant numbers of students on college campuses suffer from depression and use alcohol. The number of students in college with depression is increasing and they are more likely than peers to use alcohol increasing the likelihood of injury, sexual abuse, dropping out, poor academic performance, death, and suicide (Ross, 2004; Reifman & Watson, 2003). Therefore, it is imperative to continue to investigate the factors which impact alcohol drinking behavior among college students. Results from this study can be utilized to develop programs on college campuses to both assist students in coping with excessive anxiety and to help students learn alternative coping strategies.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this study, procedures for data collection, demographic

information, and a description of the research design employed are included in this

chapter. Also identified are the instruments utilized, with subsequent reviews of those

instruments, along with the methods and statistical procedures used to analyze the data.

Finally, a general discussion of the threats to internal and external validity of research

procedures is provided.

This study investigates if anxiety, a personality characteristic of college freshmen

and sophomores (Chickering 1969, 1993, 2009 & Spielberger 1970, 1983, 1995, 2003,

2009), is a significant factor in those students' drinking practices. The methodology used

examines four primary hypotheses: 1) There is no significant difference in state anxiety

among college students who are differentiated by their level of alcohol consumption. 2)

There is no significant difference in trait anxiety among college students who are

differentiated by their level of alcohol consumption. 3) There is no significant difference

in state anxiety and gender among college students who are differentiated by their level

of alcohol consumption; and 4) There is no significant difference in trait anxiety and

gender among college students who are differentiated by their level of alcohol

consumption.

Based on Reifman and Watson's (2003) findings that heavy drinking by college

students is associated with student deaths, injuries, sexual abuse, increased school

dropout rates, and poor academic performance, this study will investigate if state and trait

anxiety is a significant factor in alcohol usage among students in the freshmen and sophomore population.

Utilizing Arthur Chickering's theory of student development's second vector, emotional management, this investigation focuses on freshmen and sophomores' state and trait anxiety created by the emotions of anger, fear, hurt, longing, boredom, and tension during the adjustment to college and inherent in college development (Chickering, 1984). The study examines transitory and dispositional anxiety (Spielberger, 1983), characteristics of college freshmen and sophomores, and their alcohol consumption practices in an effort to determine if anxiety is a significant factor in the population's drinking practices.

Sample

The data for this study was collected through a grant from the Pennsylvania Liquor Control Board. During the 2007-08 semesters at a northeastern Pennsylvania university, students' emotional dispositions and alcohol consumption were examined. The target population for this study was freshmen and sophomores. Four hundred and twenty five students enrolled in general psychology courses were selected for the study. Three hundred and thirty five students participated. Of these, the average age was 19.5 years. Respondents were 35% male, 54% female with 11% not indicating their gender. The participants were predominantly Caucasian.

The principle research team administered the following instruments to 335 undergraduate students enrolled in introduction to psychology classes. Instruments administered to the population sample included The State Trait Personality Inventory (STPI), the Alcohol Use Disorders Identification Test (AUDIT), the Core Alcohol and

Drug Survey (CORE), the Beck Depression Inventory (BDI), the Beck Anxiety Inventory (BAI), the Conners' Adult ADHD Rating Scales–Self Report: Short Version (CAARS–S:S), and the Clinical Assessment of Attention Deficit (CAT-A™) to consenting students who were over the age of 18. All participants were provided a document to be submitted to their professor to receive extra credit for their participation in the research project. Informed consent paperwork and completed surveys were returned to the Department of Educational Studies and Secondary Education. Students were directed to submit their informed consent form in one box and their completed survey in a different box so data would be completely stripped of any identifying information.

Instruments

This study exclusively examines the data from the AUDIT and STPI, to determine if state and trait anxiety personality characteristics in freshmen and sophomores are a significant factor in the population's alcohol usage.

The STPI is a self-administered questionnaire designed to measure transitory and dispositional anger, anxiety, curiosity, and depression in adults (Spielberger, 1983). The construction of the STPI was guided by Cattell's (1961)conceptual distinction between state and trait anxiety (Spielberger & Reheiser, 2009). Separate state and trait instructions were developed to assess the intensity of anxiety as an emotional state and individual differences in anxiety proneness as a personality trait (Spielberger & Reheiser, 2009). Item selection indicated that different state and trait instructions could not overcome the strong linguistic connotations of key words in several items (Spielberger, et al., 1970). Spielberger then developed the revised STAI (Form Y), replacing items with content that

was clearly related to anxiety to improve scale psychometric properties (Spielberger & Reheiser 2009).

The STPI contains the original state and trait anxiety scales items from the STAI and was developed to include additional items for measuring state and trait anger, state and trait depression, and state and trait curiosity, reflecting different levels of the intensity of these emotional states (Spielberger & Reheiser, 2009). The STPI inventory has excellent psychometric properties and yields results that can contribute to diagnosis, treatment planning, and outcome assessment (Spielberger & Reheiser, 2009).

The STPI (Form Y) (Appendix 1) provides 80 items, comprised of eight 10-item scales for assessing anxiety, anger, depression, and curiosity as emotional states and personality traits (Spielberger, 1983). Those are defined as: state and trait anxiety, state and trait anger, state and trait curiosity, and state and trait depression (Spielberger, 1983). The state items aim to assess a subject's current emotional state and are rated on a four-point intensity scale (Spielberger, 1983). The trait items aim to assess the subject's emotional disposition and are also rated on a four-point frequency scale (Spielberger, 1983).

The STPI has provided reliable, relatively brief self-report scales for assessing both state and trait anxiety for over 40 years (Spielberger, Spielberger, Ritterband, Reheiser, & Brunner, 1995). Working from the STAI, Spielberger refined and elaborated the conceptual framework that guided the STPI test construction process. The state-trait distinction in anxiety research has been subsequently validated in numerous studies (Spielberger, et. al., 1995).

Test construction began in 1964 with the goal of developing an inventory consisting of a single set of items that could be administered to assess both state and trait anxiety (Spielberger, et al., 1970). Construct validity was developed using a large sample of college students and measuring means between anxiety levels during examinations compared to non-stressful class periods (Spielberger, 1983). Gaudry, Spielberger, and Vagg (1975) reported that the STPI has a high degree of internal consistency. To meet stringent validity criteria, Spielberger utilized Taylor's Manifest Anxiety Scale and Cattell (1961) and Scheies' Anxiety Scale Questionnaire to develop concurrent validity reporting correlations between .73 and .85. The State-Trait Personality Inventory Research Manual reports T-Anxiety coefficients from .88 to .92 and S-Anxiety coefficients from .91 to .93. Test-retest stability coefficients ranged from .73 to .86. Alpha reliability coefficients for S-Anxiety computed by formula KR-20 as modified by Cronbach were .86 for large independent samples of college students. Alpha coefficients for T-Anxiety were .90.

Gros, Antony, Simms, and McCabe (2007) discussed the validity and reliability of the STAI which is the basis for the measurement of the anxiety section of the STPI:

> The STAI has appeared in over 3,000 studies and has been translated into over 30 languages (Spielberger, 1989). In fact, a recent PsycINFO search for the STAI revealed over 400 journal articles since the Spielberger (1989) review, which suggests that the measure continues to be very popular in psychological research. In an investigation of the

reliability generalization of the STAI, the measures

demonstrated excellent internal consistency (average

_s _ .89), and the STAI Trait has evidenced excellent

test–retest reliability (average r _ .88) at multiple

time intervals (Barnes, Harp, & Jung, 2002). Also, as

would be expected given the nature of the construct,

Barnes, et al. (2002) reported lower temporal stability

for the State version of the STAI (average r _.70).

The measures have evidenced adequate convergent

and discriminant validity with other measures of state

and trait anxiety and have been shown to differentiate

patient from control samples on the STAI Trait and

participants in highly stressful situations (e.g.,

military recruits) from control samples (e.g., student

samples) on the STAI State (Spielberger, 1983).

(p. 370).

The AUDIT (Appendix 2) is the second instrument employed in this study. It is a

screening instrument used to identify persons with mild, moderate, hazardous and

harmful patterns of alcohol consumption (Saunders, et al., 1993). The AUDIT was

developed by the World Health Organization (WHO) as a simple method for screening

for drinking in brief assessment (Babor, Ramon de la Fuente, Saunders, & Grant, 1992).

The instrument identifies various levels of drinking behavior and provides a framework

to identify hazardous and harmful drinking.

The AUDIT has been tested and validated extensively (Babor, Ramon de la Fuente, Saunders, & Grant, 1992). Saunders, et al., (1993) states the AUDIT was developed in consideration of the leading screening tools of the time including The Michigan Alcohol Screening Test (MAST), McAndrew Alcoholism Scale (MAS), and Munich Alcoholism Test (MAT). In the development of the AUDIT, Babor, et al., (1992) reported that the MAST, MAS, and MAT only screened for the detection of alcoholism and not less severe drinking problems. Fleming, Barry, and MacDonald (1991) report that the AUDIT was tested for reliability and validity in an extensive six-nation validation trial and additional research was conducted to evaluate its accuracy and utility in different settings, populations, and cultural groups.

The AUDIT contains three questions on the amount and frequency of drinking, three questions on alcohol dependence and four on problems caused by alcohol, including adverse psychological reactions; all domains showed high intra-scale reliability and correlated highly with alcohol consumption (Babor, et.al.,1992). Saunders, et al., (1993) also reported the alpha coefficients of the AUDIT had high intrascale reliability, with mean values of 0.93 and 0.81. There was a moderately strong correlation between alcohol dependence and mean daily alcohol consumption (r=0.53) and between adverse psychological reactions, alcohol problems in the previous year and alcohol problems at any time, r= 0.50, 0.50 and 0.51 (Saunders, et al., 1993).

Concurrent validity correlates with external sources of information about hazardous use, harmful use and alcohol dependence, and external sources of information in relation to the clinical versions of AUDIT which included self report measures of alcohol consumption, dependence symptoms and alcohol-related problems; biochemical

tests known to be sensitive to alcohol consumption, markers of damage resulting from chronic drinking; observational evaluations of alcohol consumption, dependence symptoms, and alcohol-related problems provided by family members, friends or other observers; public records of alcohol-related problems and medical records (Fleming, Barry, & MacDonald, 1991).

Discriminant validity was evaluated by comparing AUDIT scores obtained from known groups such as abstainers, infrequent drinkers, formerly alcohol-dependent persons, as well as current drinkers who meet ICD-10 criteria for hazardous use, harmful use, and alcohol dependence syndrome (Fleming, Barry, & MacDonald, 1991). Methodologically sound validation required the use of independent diagnostic criteria, which themselves have been validated utilizing Composite International Diagnostic Interview (CIDI) and the Structured Clinical Assessment for Neuropsychiatry (SCAN) to provide independent verification of a variety of alcohol use disorders according to ICD-10 and other diagnostic systems (Fleming, Barry, & MacDonald, 1991).

Design

Using data from the AUDIT and the STPI collected from the sample of 335 freshman and sophomore psychology students, this investigator examined the results of the instruments to determine if state and trait anxiety in the target student population is a significant factor in the population's drinking behaviors.

The investigator examined the data from the STPI and AUDIT using applicable factorial ANOVA's to determine if state and trait anxieties have a significant effect upon alcohol consumption behaviors by examining alcohol consumption at the following four

levels: nonusers of alcohol, low users of alcohol, moderate users of alcohol, and heavy users.

Procedure

This investigator was invited to become part of a multidisciplinary research team at a northeastern Pennsylvania university by the principal researcher to examine the personality construct of anxiety in college freshmen and sophomores to determine if anxiety is a significant factor in binge or heavy drinking. Utilizing data collected from the study, this investigator's goal was to determine if state and trait anxiety is a significant factor in excessive alcohol usage. This investigator used the preliminary data in an existing data base that was completely stripped of any identifying information and had no interaction with any human participants.

The principle research team was working with the university community to raise awareness of problem drinking. The team recruited subjects for the study at the university utilizing the psychology department and athletic department. A battery of surveys was administered to a sample of varsity athletes and a sample undergraduate psychology students.

Data was collected by the multidisciplinary research team who selected a variety of personality constructs to be measured by standardized instruments and surveys which included The State Trait Personality Inventory (STPI), the Alcohol Use Disorders Identification Test (AUDIT), the Core Alcohol and Drug Survey (CORE), the Beck Depression Inventory (BDI), the Beck Anxiety Inventory (BAI), the Conners' Adult ADHD Rating Scales–Self Report: Short Version (CAARS–S:S), and the Clinical Assessment of Attention Deficit (CAT-A™) to investigate if personality constructs are

indicators of alcohol and other substance use at the university. Data collected from the instruments administered to the sample was then entered into a database for further study. Utilizing the data collected from the study, this investigation examined students' drinking behaviors and personality attributes.

For the scope of this study the investigator examined only the data from the STPI, and the AUDIT, to determine if state and trait anxiety personality characteristics are a significant factor in alcohol usage among the freshman and sophomore college population in the sample population as determined by this investigator and the principal research team.

Data Analysis

Data collected from the AUDIT (1997) was used to identify patterns of alcohol consumption and drinking practices of students to provide a framework for this investigation. Also, data collected from the STPI (1995) was used to examine transitory and dispositional anxiety to investigate and identify the effect of state and trait anxiety, and its relationship to alcohol consumption practices. Copies of these measures are attached to this document in the appendices.

Using between-subjects factorial ANOVA the investigator examined students' self-reported levels of state and trait anxiety by gender to determine if there is a significant difference in self-reported alcohol consumption by low, moderate, heavy and nonusers of alcohol in the undergraduate freshman and sophomore populations at the university.

Limitations and Strengths

A weakness of this study is the fact that the comparison group of general psychology students is not as representative of the general university population as would have been optimal for comparison purposes. A strength of this study is that if anxiety is found to be a significant factor in alcohol usage, programming can be developed to address students' state and trait anxiety and hopefully make a positive impact on negative alcohol usage. The current findings provide opportunities for defining better interventions to reduce high risk patterns of alcohol use.

Summary

This chapter presented the methodology used in this study to investigate four primary research hypotheses: 1) There is no significant difference in state anxiety among college students who are differentiated by their level of alcohol consumption. 2) There is no significant difference in trait anxiety among college students who are differentiated by their level of alcohol consumption. 3) There is no significant difference in state anxiety and gender among college students who are differentiated by their level of alcohol consumption; and 4) There is no significant difference in trait anxiety and gender among college students who are differentiated by their level of alcohol consumption.

This chapter included the purpose, procedures for data collection, and demographic information describing the general population for the study. This chapter also included a description of research design for the study, identification and reviews of the instruments that were employed in the study. The methods used to analyze the data utilizing ANOVA statistical procedures. Finally, a general discussion of threats to internal and external validity of research procedures was provided.

CHAPTER FOUR

RESULTS

Introduction

The purpose of this study was to investigate if anxiety, a personality characteristic of college freshmen and sophomores, (Chickering 1969,1993, 2009 & Spielberger 1970, 1983, 1995, 2003, 2009) is a significant factor in their drinking practices. The study provided an opportunity to assess students' state trait anxiety levels and alcohol consumption levels to determine if anxiety is a significant factor in drinking practices of freshmen and sophomores at a Northeastern University. Data collected included scores from the State Trait Personality Inventory (STPI) and the Alcohol Use Disorders Identification Test (AUDIT).

The study employed a quantitative design that provided an opportunity to analyze data that generated descriptive information about students' state and trait anxiety levels and levels of drinking behaviors. This chapter describes the results of the data analyses conducted in order to test various null hypotheses. Using an Analysis of Variance (ANOVA) the investigator examined state anxiety and trait anxiety and alcohol consumption by level in the freshman and sophomore population. The data was analyzed using the Statistical Packages for the Social Sciences (SPSS) software. This program was used to compare data and report descriptive statistical information related to state anxiety, trait anxiety, alcohol consumption by level, and gender. The sample consisted of 335 undergraduate students from a rural Pennsylvania public college.

The study examines the following four hypotheses to investigate if state anxiety and trait anxiety is a significant factor in level of alcohol consumption within the

freshmen and sophomore population. The investigation also examines state anxiety and trait anxiety by gender to determine if gender is a significant factor in alcohol usage. The four hypotheses are 1) There is no significant difference in state anxiety among college students who are differentiated by their level of alcohol consumption; 2) There is no significant difference in trait anxiety among college students who are differentiated by their level of alcohol consumption; 3) There is no significant difference in state anxiety and gender among college students who are differentiated by their level of alcohol consumption; and 4) There is no significant difference in trait anxiety and gender among college students who are differentiated by their level of alcohol consumption. Each hypothesis and the analyses of variance for each of the dependent variables are presented separately. Each analysis is followed by a summary of results.

Statistics

A group of ANOVA's were performed to examine the main effect and interactional effect of each hypothesis. First, the main effect of state anxiety and level alcohol consumption was examined. Then the main effect of trait anxiety and level alcohol consumption was examined. Next, the interaction effect of state anxiety, alcohol consumption level, and gender was examined. Finally, the interaction effect of trait anxiety, alcohol consumption level, and gender was examined. The results of the hypotheses follow.

Results of hypotheses:

Hypothesis 1: There is no significant difference in state anxiety among college students who are differentiated by their level of alcohol consumption.

The main effect of state anxiety upon level of alcohol usage was examined by comparing the state anxiety means obtained from the STPI and the alcohol level means from the AUDIT inventory. Utilizing an ANOVA the scores from 335 students were examined to determine if state anxiety is a significant factor in reported levels of alcohol consumption. The means for level of alcohol consumption were non-level drinkers (m=1.9271, sd=.61220, N=48) low-level drinkers (m=1.8275, sd= .57263, N=69) moderate-level drinkers (m=1.8361, sd= .54135, N=64) and high-level drinkers (m=1.9209, sd=.50850, N=155). An ANOVA was calculated comparing state anxiety and alcohol consumption by level. The F-ratio was calculated to be 0.462 for degrees of freedom (df) 3,332 (see Table 1); this was not significant at the 0.05 level. The hypothesis is accepted, there is no significant difference (see Table 1).

Table 1: ANOVA results of state anxiety by level of alcohol consumption.

Source	SS	df	MS	F	p
Between Groups	4.10	3	.137	.462	<.05
Within Groups	98.196	332	.296		
Total	98.605	335			

* Non Significant at the .05 alpha level

Hypothesis 2: There is no significant difference in trait anxiety among college students who are differentiated by their level of alcohol consumption.

The main effect of trait anxiety upon level of alcohol usage was examined by comparing trait anxiety means obtained from the STPI and means for level of alcohol consumption from the AUDIT inventory. A one way ANOVA was utilized to examine trait anxieties effect upon alcohol consumption by level of non-consumption, low

consumption, medium consumption, and heavy consumption. The scores from 335

students were examined. The means for alcohol consumption level from the AUDIT

were; non-level drinkers (*m*=2.0525, *sd*=.53727) low-level drinkers (*m*=1.9812, *sd*=

.54213) moderate-level drinkers (*m*=1.8255, *sd*= .51925) and high-level drinkers

(*m*=1.9655, *sd*=.55236). The F-ratio was calculated to be 1.809 for (df) 3,331 with a

probability level = .145. The hypothesis is accepted, there is no significant difference

(see Table 2).

Table 2: ANOVA results of trait anxiety by level of alcohol consumption.

Source	SS	df	MS	F	p
Between Groups	1.594	3	.531	1.809	.145
Within Groups	97.219	331	.294		
Total	98.813	334			

* Non Significant at the .05 alpha level

Hypothesis 3: There is no significant difference in state anxiety and gender among

college students who are differentiated by their level of alcohol consumption.

The interaction of gender was examined using the state anxiety means, the alcohol

level means to determine if state anxiety and alcohol consumption level was influenced

by gender. A between-subjects factorial ANOVA was calculated comparing state anxiety

level and alcohol consumption levels by gender. No significant main effect for state

anxiety and alcohol level was found. The F ratio was calculated to be 1.207 for (df) 7,328

with a probability level = .298. The hypothesis is accepted, there is no significant

difference (see Table 3).

Table 3: State anxiety means, level of alcohol consumption, by gender.

Source	SS	df	MS	F	p
Gender	.047	7	.354	1.207	.298
Auditgroup	.721	3	.240		
Gender * Auditgroup	2.031	327	.677		
Total	1306.041	336			

* Non Significant at the .05 alpha level

Hypothesis 4: There is no significant difference in trait anxiety and gender among college students who are differentiated by their level of alcohol consumption.

The interaction effect of gender was examined using the trait anxiety means from the STPI, the alcohol level means from the AUDIT inventory, to determine if trait anxiety and alcohol consumption level was influenced by gender. A between-subjects factorial ANOVA was calculated comparing gender, trait anxiety, and level of alcohol consumption to determine if there is a significant difference in trait anxiety and level of alcohol consumption as a result of gender.

A significant interaction effect for trait anxiety and alcohol level with gender was found. The F-ratio was calculated to be 2.649 for (df) 7,337 with probability = .011. The hypothesis is rejected. There is a significant difference (see Table 4).

The interaction effect for trait anxiety, level of alcohol consumption, and gender was significant (F(3,332) = 2.65, p > .05). The interaction between state anxiety, alcohol consumption level and gender was influenced (see Table 4).

Table 4: Trait anxiety means, level of alcohol consumption, by gender.

Source	SS	df	MS	F	Sig.
Gender	.010	7	.757	2.649*	.011
Auditgroup	1.974	3	.658		
Gender * Auditgroup	2.837	327	.946		
Total	1378.464	335			

* Significant at the .05 alpha level

Results of the Post Hoc Analysis

Due to finding a statistically significant difference of mean scores in Hypothesis #4, Bonferroni post hoc analyses were conducted to determine where the differences existed. The results indicated a significant statistical difference exists between the males who reported being nonusers of alcohol to males who reported being low users of alcohol according to means and trait anxiety scores (t=2.042, (df) 35, p= 0.025). The results indicated a significant statistical difference exists between the males who reported being nonusers of alcohol to males who reported being moderate users of alcohol according to alcohol level means and trait anxiety scores (t=2.65, (df) 36, p= 0.011). Results indicated a significant statistical difference exists between the males who reported being nonusers of alcohol to males who reported being heavy users of alcohol according to a comparison of alcohol level means and trait anxiety scores (t=2.95, (df) 83, p= 0.008). Results indicated a significant statistical difference exists between males who reported being nonusers of alcohol with females who reported being low users of alcohol by comparison of alcohol level means and trait anxiety scores (t=2.70, (df) 53, p= 0.009).

In conclusion, the males who did not consume alcohol scored significantly higher in trait anxiety in comparison to males in the other three groups determined by level of alcohol consumption. Also, the males who do not use alcohol scored significantly higher in trait anxiety than the females in the medium group determined by level of alcohol consumption. There were no other significant comparisons.

Summary

This chapter presented a summary of the analysis of the data derived from the two instruments employed in the study: the STPI and the AUDIT.

The study determined that the main effective of state and trait anxiety was not a significant factor in alcohol consumption practices of freshmen and sophomores. For the state and trait anxiety means there was a non significant F ratio among the means for the levels of alcohol consumption among freshmen and sophomores.

In addition, the study determined that the interactional effect of gender and state anxiety was not a significant statistical factor in alcohol practices of freshmen and sophomores. There was no a significant F ratio among the means for state anxiety and alcohol consumption among freshmen and sophomores.

Finally, the study determined that the interactional effect for gender and trait anxiety was a significant statistical factor in alcohol practices of freshmen and sophomores. There was a significant F ratio among the means for trait anxiety, gender, and alcohol consumption among freshmen and sophomores. Post hoc analysis indicated that the difference was significant when compared to each level of alcohol consumption, gender, and trait anxiety in three groups. The key findings of the study, discussion of the results, and recommendations for future research are presented in the final chapter.

CHAPTER FIVE

DISCUSSION

The chapter is divided into four parts: a summary of this study's key findings, a discussion of the results, the implications and limitations of the study, and recommendations for future research.

Introduction

The reality of college students' drinking and mental health issues on campus cannot be denied (Ross, 2004). The Center for the Study of Collegiate Mental Health (CSCMH, 2009) reports that the mental health of today's college students not only impacts the students' ability to cope, the educational environment, and the entire college community. Through examinations of mental health outcomes, the CSCMH found that the college counseling center plays an important role in health and safety of the student body (CSCMH, 2009). Kitzrow (2003) discovered that the current generation of college students has changed considerably from the past, particularly in the area of students' mental health needs. Students present with a broad range of severe mental health concerns including suicidal tendencies, substance abuse, depression and anxiety, and histories of psychiatric treatment or hospitalization (Pledge, et al., 1998).

Further, the CSCMH Pilot Study examined the relationship between alcohol use and mental health symptoms utilizing responses from over 15,000 students and found that binge drinking is a serious health concern. A significant percentage of college student's abuse alcohol and this abuse is associated with a variety of negative mental health outcomes including an increased risk of suicide, depression, violent behavior, and poor academic performance (CSCMH, 2009).

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Acting Surgeon General Galson (2008) called universities to action to address alcohol and other drug usage on campus. Chapman (2007) writes that student affairs professionals as well as college administrators and legislative bodies have done an excellent job of shifting from a reactive approach to college drinking and have moved toward a proactive response. However, the paradigm shift relating to college drinking and the mental health needs of students remains a significant challenge within today's universities (Ross, 2004).

Damon and Fountaine (2009) encourage partnerships of colleges and universities across the nation to raise the visibility of this very serious problem of underage and excessive drinking and encourage the university community to search for ways to curb this dangerous behavior. They suggest that pointing fingers or oversimplifying this endlessly vexing problem does not produce the outcomes needed to address the problem and that the university community must join together with all its resources for the single purpose of finding more reasonable solutions to curbing excessive and problematic alcohol usage behaviors among students (Damon & Fountaine, 2009).

While there is an abundance of literature on alcohol usage among students and the mental health needs of students, few studies focus on the combination of both. Research on the mental health needs of students in conjunction with binge drinking and excessive alcohol usage has not been thoroughly studied and data that exists is contradictory and sparse at best (Ross, 2004).

This investigation is part of the empirical thrust toward obtaining a more complete understanding of problematic alcohol usage and binge drinking among college students by examining the personality characteristics of students, particularly investigating how

anxiety affects and impacts student development by examining the effect of state and trait anxiety on alcohol usage in the freshman and sophomore population. Alcohol usage remains a significant problem in the undergraduate population impacting the success, health, and development of students (National Survey on Drug Use and Health, 2006 & Syre, 1999). Therefore, this investigation examined the personality factor of state and trait anxiety in college students to determine if state and trait anxiety is a significant factor in undergraduate students' alcohol practices.

Summary of the Study

The methodology for this study was quantitative. Utilizing the Statistical Packages for the Social Sciences (SPSS) software, a series of ANOVA's were conducted to examine if there was a significant statistical difference between state anxiety and trait anxiety and freshmen and sophomores' alcohol consumption.

Data was collected from 335 freshman and sophomore psychology students from a university in northeastern Pennsylvania utilizing the STPI and the AUDIT. The STPI, a self-report instrument, was utilized to gather data about state and trait anxiety within the population. Then, data was gathered on the drinking practices of the research participants utilizing the AUDIT to determine and report research participants' level of alcohol usage and issues pertaining to that use. The AUDIT scores were used to identify nonusers of alcohol, low users of alcohol, moderate users of alcohol, and heavy users of alcohol.

Next, utilizing the data obtained from these instruments, the investigation tested the four null hypotheses: 1) There is no significant difference in state anxiety among college students who are differentiated by their level of alcohol consumption. 2) There is no significant difference in trait anxiety among college students who are differentiated by

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their level of alcohol consumption. 3) There is no significant difference in state anxiety and gender among college students who are differentiated by their level of alcohol consumption; and 4) There is no significant difference in trait anxiety and gender among college students who are differentiated by their level of alcohol consumption.

An ANOVA was performed on each hypothesis. The null hypothesis was accepted in the first three hypotheses. However, after an examination of the fourth hypothesis, the null hypothesis was rejected because there was a significant statistical difference in trait anxiety and gender among college students who were differentiated by their level of alcohol consumption.

Because an interactional effect between trait anxiety, gender, and alcohol consumption level did occur Bonferroni post hoc analyses were conducted. The Bonferroni post hoc analysis determined that the difference was significant when compared to level of alcohol consumption according to gender and trait anxiety. The significant statistical differences existed between the males who reported being nonusers of alcohol to males who reported being low users of alcohol, between the males who reported being nonusers of alcohol to males who reported being moderate users of alcohol, between the males who reported being nonusers of alcohol to males who reported being heavy users of alcohol, and between males who reported being nonusers of alcohol with females who reported being low users of alcohol. There were no other significant comparisons.

In conclusion, the males who did not use alcohol were found to have significantly higher trait anxiety than the males in the other three group's mild, moderate, and heavy level of alcohol consumption. Also, males who did not use alcohol scored significantly

higher in trait anxiety than the females in the medium level alcohol consumption group. Trait anxiety was found to be a significant factor among the males who reported being nonusers of alcohol in the freshmen and sophomore population.

Discussion

The investigation determined that main effect of state and trait anxiety in college students was not a statistically significant factor in the alcohol consumption practices of freshmen and sophomores. This does not diminish the reality that anxiety is a significant factor in the population. Read, Kahler, Maddock, and Palfai (2003) found that social anxiety may be a factor for alcohol consumption in adolescents who drink to enhance or stimulate positive emotion, but not necessarily to cope with negative emotion.

The interactional effect between state anxiety, gender, and level of alcohol consumption was not a statistically significant factor in the alcohol consumption practices of freshmen and sophomores. However, the interactional effect of trait anxiety was a statistically significant factor in the alcohol consumption practices of freshmen and sophomores in the males who reported being nonusers of alcohol compared to males who reported being low, moderate or heavy users of alcohol. These findings are supported by Spielberger's (1970) findings that males identified with a disposition of trait anxiety traditionally have a stable tendency to perceive stressful situations such as the transition to college as dangerous or threatening and may be at-risk of not successfully making the transition to college because of problematic behaviors during this phase of development; but not necessarily related to alcohol practices.

Brennan, Walfish and Aubuchon (1986) research support these findings having found a positive but weak relationship between emotional distress and frequency of

drinking. The findings may also be related to Read, Wood, Kahler, Maddock, and Palfai (2003) research findings indicating that alcohol consumption is presumed to operate on the principle of negative reinforcement. Students may drink to ameliorate negative emotions or to make such emotions more tolerable (Read, Kahler, Maddock, and Palfai, 2003). Some evidence suggests that these negative reinforcement coping mechanisms may affect alcohol usage less strongly in college students (Bradizza, et al., 1999; Perkins, 1999).

Because the study determined that the interactional effect for gender and trait anxiety was a significant statistical factor indicating that males who do not use alcohol scored significantly higher in trait anxiety in comparison to males who drink at the mild, moderate, and heavy level as to the females who consume alcohol moderately the emotional disposition of trait anxiety in males will be examined in more detail.

Misra and McKean (2000) found that there is currently a nationwide trend in student stress which is affecting student health and development. Misra and McKean (2000) discovered stressors include increased academic demands and self-imposed stressors. They state that when students perceive stress negatively and if stress becomes excessive, students experience physical and psychological impairment. Misra and McKean (2000) examined trait anxiety by gender and the interrelationship of college students' anxiety and academic stress in conjunction with time management, and leisure satisfaction and found that there were significant gender differences among trait anxiety between male and female students. In general, male students' experienced higher stress due to academic pressures and self-imposed stress.

Furthermore, Misra and McKean (2000) discovered that academic stress was a significant predictor of trait anxiety. They also found that male students can reduce their academic stress when they perceived themselves to be in control of their time, are able to set goals, and remain organized (Misra and McKean, 2000). Females were found to manage their time more efficiently than males showing that female college students' perceived to have better control of their time, set and prioritized goals, planned, and have an organized approach to tasks and workspace (Misra and McKean, 2000). Improved study skills significantly reduce academic stressors and cognitive behavioral reactions to stress demonstrating that trait anxiety is significantly correlated with academic stressors (Misra and McKean, 2000).

Ceyhan (2006) identified that the quality of the relationship between parents and a child during infancy and throughout childhood are very important and propose that an individual's first attachment relationship with his/her parents/or caregivers has a great significance in determining his/her interpersonal relationships and future psychological adjustment. Silva, Dorso, Azhar and Renk (2008) suggest that the parenting styles experienced by students during their childhoods impact their anxiety, motivation, and are significantly related to the academic success experienced by students.

Various studies have reported that there is a relationship between early separation anxiety and anxiety in adulthood (Ceyhan, 2006). Separation anxiety experienced in the past is found to be significant predictor of trait anxiety levels (Ceyhan, 2006). The DSM-IV TR (2000) points out that separation anxiety disorder can lead to excessive anxiety, panic attacks, and may lead to other types of anxiety disorders and/or depression in adulthood and may affect development.

McCarthy, Fouladi, Juncker, & Matheny (2006) found that anxiety and depression were reported to be the most prevalent problem on college campuses, academic and work-related concerns were ranked second. Anxiety and depression share many cognitive components that can interfere with college students' academic pursuits and decision-making capacities and psychological resources that protect college students from anxiety and depression are lacking (McCarthy, et. al., 2006).

McCarthy, et. al., (2006) reported that gender is a significant factor in both depression and anxiety and a range of personality factors including self-mastery, dispositional optimism, self-efficacy, and the Adlerian construct of social interest may protect against the experience of anxiety and depression. Social factors are known to be important in psychological well-being and individuals who perceive themselves as having adequate levels of coping resources are less likely to become overwhelmed by life demands and events because they will tend to view demands as healthy challenges rather than unpleasant stressors (McCarthy, et. al., 2006). Cognitively based interventions can help students' self-efficacy beliefs and augment positive thinking which in turn could reduce the incidence of anxiety and the importance of social interest as a predictor of anxiety should not be discounted (McCarthy, et. al., 2006).

Culture is also found to have a significant role in how individuals experience and how individuals are affected by trait anxiety (Abbassi & Stacks 2007). Studies on emotion and research on cross-cultural settings have found that anxiety and anxiety disorders are universal (Good & Kleinman 1985). Dong, Frederick, and Shoudong (2008) found that socially prescribed perfectionism is a significant predictor of trait anxiety and the greater the tendency that one believes others expect perfectionism from him or her,

the greater trait anxiety he or she may experience. This finding provides evidence of the interaction between anxiety and culture. In an individualistic western culture like the United States high expectations concerning personal achievement may have a significant impact on trait anxiety (Dong, Frederick, & Shoudong, 2008).

On the other hand the relationship between collective self-esteem and mental health are one of the many resources to counteract psychological distress such as trait anxiety, particularly for those with a collective or pluralistic cultural background (Dong, Frederick, & Shoudong, 2008). Various cultures prescribe different social and interpersonal expectations related to different types of anxieties, thus it is important to conceptualize students' anxiety accurately from a multicultural perspective (Dong, Frederick, & Shoudong, 2008).

When examining college drinking and mental health issues on campus we need to differentiate between two continuums: "problem – solution" and "dilemma – resolution" (Chapman, 2007). Some studies define problem drinking based on rates and levels of consumptions, while other studies focus on negative consequences of alcohol usage to identify which students have problematic drinking habits (Eshbaugh, 2008). This study focused on the "dilemma – resolution" continuum of alcohol consumption practices in freshmen and sophomores to examine the student personality characteristic of anxiety in relation to the phenomenon of excessive drinking practices. Chapman (2007) acknowledges that there are significant issues related to collegiate drinking, but the dilemma is recognizing the part or parts of the student population who consume alcohol and experience untoward consequences (Chapman, 2007).

For more than a decade, researchers have worked to develop new resources and insights in search of initiatives aimed at mitigating dangerous drinking. Higher education has yet to succeed in eradicating dangerous drinking practices; however a collective effort to stem the tide of alcohol misuse has developed around this national problem (Damon & Fountaine, 2009). Large schools such as The Pennsylvania State University, Indiana State University, and the University of Nebraska have all been named by The Princeton Review as "Party Schools of the Year." Therefore, even with all the collective resources of these major universities, there is little empirical evidence that the decades-long efforts to minimize alcohol abuse among college students is working despite spending millions of dollars on numerous initiatives (Damon & Fountaine, 2009).

Implications of the Study

Spielberger, Gorsuch, Lushene, and Reheiser (1970, 1995, 2009) report that trait anxiety is a notable personality attribute in the sophomore and freshman population and state and trait anxiety warrants further research in examining students personality constructs within the system of higher education. Although state and trait anxiety among college students is found to be a significant factor in student development (Chickering & Reisser, 1993) this study found that it did not have a statistically significant impact upon level of alcohol consumption.

Laws, policies, and enforcement may be part of the answer in addressing high risk alcohol consumption and binge drinking. However, student's personality attributes and counseling resources play a critical role in addressing the problem of college development. Resources limit and challenge our ability to provide interventions to large populations of student's. However, working to promote new attitudes and understanding

may be an important component in addressing personal, social, and cultural change within the population.

Organizing and maintaining an active campus community coalition to create an environment that benefits students and reduces harm is an essential element for addressing high risk alcohol practices, binge drinking, and healthy student development. Utilizing a campus coalition in addressing alcohol practices and successful student development of first and second year students is directly in line with the universities' mission, vision, and responsibility to act in place of the parent, in loco parentis.

The first thing we must do is to ask what success would look like in addressing alcohol consumption practices and healthy student development in the freshman and sophomore population (Damon & Fountaine, 2009). We must then adopt good ideas where we find them, utilizing faculty and staff, parents, athletic administrators, the media, and the entire community for the common purpose of accomplishing our goals. Damon and Fountaine, (2009) point out that patience and mutual support is a necessary component of cultural and institutional change.

Limitations of the Study

There were a number of threats to internal validity that applied to the present study. One weakness of this study is the fact that the comparison groups of students from this university may not be a representative sample of the general university population as would have been optimal for comparison purposes. The convenience sample was limited to volunteering undergraduate students at a small northeastern university; samples from other regions might yield different results on the variables used in this study. Sole reliance on student self-reporting was also a limitation in that student responses may be

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fairly accurate or students may have under reported or over reported anxiety or alcohol usage which may have influenced the results of the study. Further, this study's sample was predominantly Caucasian, middle-class with little ethnic variation, which does not allow for generalization beyond the sample. Another limitation was that the study design could not identify nor separate the specific influences beyond state and trait anxiety.

A potential strength of the study is that the current findings provide opportunities in terms of clear targets for interventions, particularly in the direction of continued efforts to change social norms surrounding alcohol use in general and high risk patterns of alcohol use in particular.

Recommendations for Further Study

It is this investigator's recommendation that counseling centers' staff should be included as a part of any campus community coalition addressing high risk alcohol consumption and binge drinking. These individuals have direct knowledge of and experience with first and second-year students' personality characteristics. They would be a valuable asset in investigating and creating social initiatives to help understand students' personality constructs and their relationship to high-risk and dangerous drinking. Earleywine, Finn, and Martin (1990) examined correlations between personality measures and alcohol consumption and found that anxiety and alcohol consumption are strongly correlated. Similarly, Pullen (1994) found that state anxiety is a predictor of drinking problems.

Mental health professionals from counseling centers as well as campus faculty have extensive knowledge and skill in assessing students' personality characteristics, beliefs, attitudes, and alcohol practices within and beyond the campus community.

Trained psychologists, counselors, and mental health workers also have the ability to ascertain information from focus groups and larger groups to be the impetus for the creation of campus initiatives which could positively affect the campus culture. Results of this study could be shared with campus faculty to conduct other research within the student body to make institutional and cultural changes addressing high risk drinking and healthy student development.

Mental health professionals, as illustrated through this study, can employ standardized instruments, surveys and other tools such as the STPI and the AUDIT as well as other instruments to assess the characteristics of the twenty-first century student. The Core Alcohol and Drug Survey, the BDI, the BAI, the Conners' Adult ADHD Rating Scales–Self Report, and the CAT-A™ all provide strong examples of applicable instruments and lend themselves to research designs for investigating students alcohol consumption practices and their development.

Through the literature used as a basis for this study, this investigator discovered that alcohol practices of undergraduate students as well as the mental health needs of these students are two of the contemporary subjects of research related to higher education. It is this investigator's opinion that other research should be conducted to further the examination of the mental health needs of student's, their alcohol consumption practices, and development. Upon the completion of this study, several other investigators on the principal research team began to investigate additional personality characteristics of undergraduate students and their relationship to alcohol consumption practices.

Since the 1960s, Charles Spielberger (1970, 1983, 1995, 2003, 2009) has investigated anxiety, anger, depression, and curiosity, which are the emotional states and personality traits or psychological vital signs of students. Utilizing standardized instruments to investigate those vital signs is, in this investigator's opinion, is very important work that should be continued.

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APPENDIX A

AUDIT QUESTIONNAIRE

Questions	0	1	2	3	4	Enter Score
1. How often do you have a drink containing alcohol	Never	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week	
If score to I'' question is zero, stop screening here.						
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have five or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
If the total score for Questions 1-3 is 5 points or higher for Men or 4 points of higher for Women, then continue						
4. How often during the last year have you found that you were not able to stop drinking once you had 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 going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
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 you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
10. Has a relative, friend, doctor, or other healthcare worker been concerned about your drinking or suggested you cut down?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
					TOTAL SCORE	

The Alcohol Use Disorders Identification Test (AUDIT) IS used by permission from the World Health Organization.

Scores of 8 or more for men or 4 or more for women, adolescents, and men over the age of 60 are considered positive results.

THE STATE-TRAIT PERSONALITY INVENTORY (FORM Y)

DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you *generally* feel.

1 Almost Never 2 Sometimes 3 Often 4 Almost Always

1. I feel calm **1 2 3 4**
2. I am in a questioning mood **1 2 3 4**
3. I am furious **1 2 3 4**
4. I feel strong **1 2 3 4**
5. I am tense **1 2 3 4**
6. I feel curious **1 2 3 4**
7. I feel like banging on the table **1 2 3 4**
8. I feel blue **1 2 3 4**
9. I feel at ease **1 2 3 4**
10. I feel interested **1 2 3 4**
11. I feel angry **1 2 3 4**
12. I feel miserable **1 2 3 4**
13. I am presently worrying over possible misfortunes **1 2 3 4**
14. I feel inquisitive **1 2 3 4**
15. I feel like kicking somebody **1 2 3 4**
16. I feel downhearted **1 2 3 4**
17. I feel nervous **1 2 3 4**
18. I feel like exploring my environment **1 2 3 4**
19. I feel like breaking things **1 2 3 4**
20. I feel alive **1 2 3 4**
21. I am jittery **1 2 3 4**
22. I feel stimulated **1 2 3 4**
23. I am mad **1 2 3 4**
24. I feel sad **1 2 3 4**
25. I am relaxed **1 2 3 4**
26. I feel mentally active **1 2 3 4**
27. I feel irritated **1 2 3 4**
28. I feel safe **1 2 3 4**
29. I am worried **1 2 3 4**
30. I feel bored **1 2 3 4**
31. I feel like hitting someone **1 2 3 4**
32. I feel gloomy **1 2 3 4**
33. I feel steady **1 2 3 4**
34. I feel eager **1 2 3 4**
35. I feel annoyed **1 2 3 4**
36. I feel healthy **1 2 3 4**
37. I feel frightened **1 2 3 4**

38. I feel disinterested.. **1 2 3 4**
39. I feel like swearing **1 2 3 4**
40. I feel hopeful about the future **1 2 3 4**
41. I am a steady person... **1 2 3 4**
42. I feel like exploring my environment **1 2 3 4**
43. I am quick tempered **1 2 3 4**
44. I feel gloomy **1 2 3 4**
45. I feel satisfied with myself **1 2 3 4**
46. I am curious **1 2 3 4**
47. I have a fiery temper **1 2 3 4**
48. I feel happy **1 2 3 4**
49. I get in a state of tension or turmoil as
I think over my recent concerns & interests... **1 2 3 4**
50. I feel interested **1 2 3 4**
51. I am a hot-headed person **1 2 3 4**
52. I feel depressed **1 2 3 4**
53. I wish I could be as happy as others seem to be................................. **1 2 3 4**
54. I feel inquisitive **1 2 3 4**
55. I get angry when I'm slowed down by others mistakes **1 2 3 4**
56. I feel sad **1 2 3 4**
57. I feel like a failure.. **1 2 3 4**
58. I feel eager.. **1 2 3 4**
59. I feel annoyed when I am not given recognition for doing good work **1 2 3 4**
60. I feel hopeless... **1 2 3 4**
61. I feel nervous and restless **1 2 3 4**
62. I am in a questioning mood **1 2 3 4**
63. I fly off the handle.. **1 2 3 4**
64. I feel low.. **1 2 3 4**
65. I feel secure **1 2 3 4**
66. I feel stimulated... **1 2 3 4**
67. When I get mad I say nasty things **1 2 3 4**
68. I feel whole.. **1 2 3 4**
69. I lack self-confidence **1 2 3 4**
70. I feel disinterested... **1 2 3 4**
71. It makes me furious when I am criticized in front of others................. **1 2 3 4**
72. I feel safe **1 2 3 4**
73. I feel inadequate **1 2 3 4**
74. I feel mentally active.. **1 2 3 4**
75. When I get frustrated, I feel like hitting someone **1 2 3 4**
76. I feel peaceful **1 2 3 4**
77. I worry too much over something that really does not matter **1 2 3 4**
78. I feel bored.. **1 2 3 4**
79. I feel infuriated when I do a good job and get a poor evaluation **1 2 3 4**
80. I enjoy life.. **1 2 3 4**

TABLES

Table 1: ANOVA results of state anxiety by level of alcohol consumption.

Source	SS	df	MS	F	p
Between Groups	4.10	3	.137	.462	<.05
Within Groups	98.196	332	.296		
Total	98.605	335			

* Non Significant at the .05 alpha level

Table 2: ANOVA results of trait anxiety by level of alcohol consumption.

Source	SS	df	MS	F	p
Between Groups	1.594	3	.531	1.809	.145
Within Groups	97.219	331	.294		
Total	98.813	334			

* Non Significant at the .05 alpha level

Table 3: State anxiety means, level of alcohol consumption, by gender.

Source	SS	df	MS	F	p
Gender	.047	7	.354	1.207	.298
Auditgroup	.721	3	.240		
Gender * Auditgroup	2.031	327	.677		
Total	1306.041	336			

* Non Significant at the .05 alpha level

Table 4: Trait anxiety means, level of alcohol consumption, by gender.

Source	SS	df	MS	F	Sig.
Gender	.010	7	.757	2.649*	.011
Auditgroup	1.974	3	.658		
Gender * Auditgroup	2.837	327	.946		
Total	1378.464	335			

* Significant at the .05 alpha level