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STUDENTS WITH MENTAL HEALTH ISSUES IN HIGHER EDUCATION: A SURVEY OF PREVALENCE AND FALL-TO-SPRING PERSISTENCE RATES IN A COMMUNITY COLLEGE ENVIRONMENT

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DISSERTATION

Submitted in partial fulfillment of the requirements
For the degree of Doctor of Philosophy in Education
In the Graduate School of the
University of Missouri-St. Louis, 2011

St. Louis, Missouri

Advisory Committee

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UNIVERSITY OF MISSOURI-ST. LOUIS
GRADUATE SCHOOL

November 8, 2011

We hereby recommend that the dissertation by:

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Entitled:

STUDENTS WITH MENTAL HEALTH ISSUES IN HIGHER EDUCATION: A SURVEY OF PREVALENCE AND FALL-TO-SPRING PERSISTENCE RATES IN A COMMUNITY COLLEGE ENVIRONMENT

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Abstract

Among the multitude of challenges and adversities students face during their first year of higher education, many experience deterioration of their emotional or mental health. Current research focuses on the perceived rise in the breadth and complexity of student mental health concerns at four-year colleges and universities. Even though community college students encompass the majority of individuals enrolled in the United States higher education system, no research specifically examines the mental health prevalence of these students and whether these difficulties negatively impact persistence.

This study explored the relationship between evidence of mental health problems and fall-to-spring persistence for first-year students at a small size Midwestern community college. Quantitative data were collected from a voluntary survey administered to students enrolled in the Fall term freshman orientation courses. The survey identified psychological symptoms and distress as measured by eight distinct Counseling Center Assessment of Psychological Symptoms (CCAPS-62) subscales, prior mental health treatment, gender, age, financial aid status, and employment status as possible predictor variables of student persistence. Persistence was evaluated by successful completion of the fall semester and enrollment in spring semester classes. Descriptive statistics, bivariate correlation data, and logistic regression analysis were used in this study.

The findings provided evidence of the presence of mental health concerns among first-year community college students. Social anxiety and academic distress were the most commonly reported difficulties. Counseling services and the use of psychotropic medication were the most frequently sought after types of mental health

treatment. Students who reported higher levels of academic distress also reported more depression and generalized anxiety symptoms. However, the logistic regression analyses failed to confirm that students' mental health concerns or treatment were predictive of fall semester completion or spring semester reenrollment status.

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Chapter 1

Introduction

"You gain strength, courage and confidence by every experience in which you really stop to look fear in the face...You must do the thing you think you cannot do."

(Eleanor Roosevelt, US diplomat & reformer, n. d.)

Characterizing the attributes that allow individuals the strength to persist to a set of goals is not a new phenomenon. It is investigated in the workplace, home environment, educational system, and even used to persuade voters within the political arena. John F. Kennedy spoke of the value of persistence in his famous 1962 speech regarding the importance of the continuation of the United States Space Program when he said:

> We choose to go to the moon, in this decade, not because it will be easy, but because it will be hard—because that goal will serve to organize and measure the best of our energies and skills—because that challenge is one we are willing to accept, one we are unwilling to postpone, and one that we intend to win. (JFK library, Reading copy of President Kennedy's address at Rice University on the nation's space effort, September 12, 1962, page 8)

While persistence is a valued quality in all aspects of life, it often remains elusive to many struggling to attain their educational goals. Student persistence in higher education has been a topic of research for decades (Cabrera, Castaneda, Nora, & Hengstler, 1992; Pascarella & Terenzini, 2005; Reason, 2009; Sorey & Duggan, 2008; Tinto, 1993). Researchers have identified a list of potential predictors associated with persistence that is both complex and staggering. Variables that impede student persistence in the post-secondary environment include an array of institutional

characteristics such as institutional size, source of support, selectivity in admission, and organizational climate (Pascarella & Terenzini, 2005; Reason, 2009). Individual characteristics have also been investigated including curriculum, classroom experiences, and co-curricular student activities (Reason, 2009; Terenzini & Reason, 2005).

In spite of the preponderance of studies, student persistence remains a significant problem for post-secondary institutions. Over the last twenty years, attrition rates have stayed moderately consistent and in some cases even increased (Grubb, 1999; Napoli & Wortman, 1996; Nora, 2000; Reason, 2009; Sorey & Duggan, 2008). Yet this is happening at a time when prominent national organizations indicate that if the United States is not more successful at raising college completion rates, the nation risks losing economic standing in the world. Furthermore, the nation may relegate today's generation of youth to a lower standard of living than was enjoyed by their parents. A 2010 Lumina Foundation report calls for a 60% college completion rate in the United States by 2025, requiring nearly a doubling of our current success rates over a period of fifteen years. The failure of college students to persist toward their educational goals negatively impacts the individual, institution, and the general public, in both fiscal and social manners. From a public perspective, an uneducated and untrained workforce relates to higher unemployment and a diminished level of global economic competitiveness (American Association of Community Colleges [AACC], 2009; Becker, 2004; Merisotis, 2005; Lumina, 2010). From an individual perspective, higher education student attrition is associated with lower paying jobs and often points toward a life of poverty (Merisotis, 2005; Sorey & Duggan, 2008). Strauss and Volkwein (2004) and Wild and Ebbers (2002) report that high attrition rates "…often impact an institution's ability to plan and

budget, affecting the institution's economic stability (as cited in Sorey & Duggan, 2008, p. 76). Certain institutions, particularly private colleges that depend heavily on tuition revenue and public colleges with full-time equivalent (FTE) driven funding formulas, are particularly vulnerable to the fiscal impact of student attrition. U.S. higher education attainment from a global competitiveness perspective raises some serious concern for the country. While the proportion of adults that hold two- or four-year college degrees in the U.S. has dropped from first to eighth in the world, the following is particularly alarming:

> among young adults — those between the ages of 25 and 34, the U.S. is no better than tied for 10th, and now trails nations in Asia, Europe and the Americas. Each year for at least the past four, the U.S. has fallen in these comparisons. In almost all other developed nations, attainment rates are increasing — in many cases dramatically and to levels significantly above ours. As a result, ours is one of the very few nations in the world in which younger adults are not better educated than older adults (Lumina, 2010, p. 3).

As persistence issues continue to negatively impact higher education, it is important to identify and address the problems students face in order to change this potentially detrimental trend within the United States.

Mental Health and Student Persistence

Adding to the multitude of challenges and adversities students face during their freshman year of coursework, many students experience deterioration of their emotional or mental health during the first year of higher education. The number of students who encounter declining mental health during this time has been increasing both in terms of numbers and complexity of the types of difficulties they encounter (Benton, Benton,

Tsing, Newton, Robertson, & Benton, 2003; Gallagher, 2006; Kadison & DiGeronimo, 2004; Soet & Sevig, 2006). Research shows that many traditional-age students struggle with the transition to higher education from high school (Kadison & DiGeronimo, 2004). The years spent in college mark noteworthy changes in an individual. Not only do students grapple with academic concerns, but many face transformations in identity formation, moral reasoning, interpersonal relationships, cognitive development, and social perspective (Pascarella & Terenzini, 2005). These developmental milestones frequently have a considerable impact on an individual's mental health and may contribute to the development of a mental disorder. According to the American Psychiatric Association (APA), a psychological or mental disorder is described "as a pattern of behavioral and psychological symptoms that causes significant personal distress, impairs the ability to function in one or more important areas of daily life, or both" (Hockenbury, 2008, p. 573). Whether or not students' mental health symptoms rise to the level of the definition put forward by the APA, they can still negatively impact persistence in academic pursuits. Additionally, research shows that certain groups are more vulnerable to mental health concerns than others. For example, females report a higher incidence of anxiety and depressive related disorders and approximately 60% of those enrolled in undergraduate education in the United States are women. Males more frequently exhibit symptoms of substance abuse and hostility (Halgin & Whitbourne, 2010).

In addition to traditional-age students entering the higher education arena, there are many who choose to enter college later in life. In particular, students who attend community colleges are often not of the traditional age when first entering higher

education (Cohen & Brawer, 2003; Pascarella & Terenzini, 2005). As a result, these students often bring a unique dimension to the mental health complexities faced by first year students within community colleges. The National Center for Education Statistics (as cited in Cohen & Brawer, 2003) conducted surveys that found students entering two-year community colleges were on average twenty-nine years of age and many of these students are holding down jobs, supporting dependents, or are returning to college after losing a job.

Regardless of age or reasons students report for entering higher education, campuses across the United States are noting an increase in students with serious mental health problems. Researchers observe that there has been a substantial increase in students seeking campus counseling services for psychological concerns and a growth in the seriousness of the pathology (Benton et al., 2003; Gallagher, 2006, Soet & Sevig, 2006). Counseling center directors are troubled by rises in suicides, self-injury reports, crisis counseling needs, eating disorders, past sexual trauma reports, and sexual assaults (Gallagher, 2006). According to the American College Health Association ([ACHA], 2005), the percentage of college students reporting having been diagnosed with depression increased 56% over a five year period. What little empirical research that has been conducted on the impact of mental health at the collegiate level has primarily focused on depression (Soet & Sevig, 2006). As increasing numbers of students with complex mental health issues enter postsecondary education, it is the responsibility of colleges and universities to understand the unique challenge students face in order to successfully complete their goals related to further education. Individuals with mental health difficulties are often unable to obtain equitable economic or social advantages of

higher education compared to individuals who do not report these types of disorders (Collins & Mowbray, 2005; Jayakody, Danziger, & Kessler, 1998). Adults with psychiatric problems typically experience lower employment rates (11% to 30%) compared to the general adult population (Collins & Mowbray, 2005). Lower levels of education may contribute to these differences in employment rates. Additionally, employment opportunities for people without postsecondary experience continue to diminish as society becomes more technologically advanced. If colleges and universities provide the necessary support for people with psychiatric problems, their successful educational pursuits may lead to improvement in employment prospects and increase in the quality of life.

Directly related to campus operations, mental health difficulties have the potential to disrupt individual student performance, classroom management, student activities, and critical incidents which may impact an entire campus community (Kadison & DiGeronimo, 2004). When violence on college campuses came to the nation's attention through such tragedies as the shootings at Virginia Tech University, Louisiana Technical College, and Northern Illinois University, many colleges and universities responded with the establishment of behavioral intervention processes (National Behavioral Intervention Team Association [NaBITA], 2011). These procedures are usually designed to provide threat assessment and intervention in response to dangerous or violent student behavior with the specific aim on campus safety. With the lack of scholarly research on the effectiveness of these relatively new processes, the possibility of institutions failing to address related and underlying mental health problems associated with the disruptive or erratic behavior may lead to disastrous outcomes.

The issue of threatening student behavior reentered the national spotlight in January, 2011 with the violent shootings of public officials and private citizens in a Tuscan, Arizona grocery store parking lot. It was quickly determined that the alleged gunman exhibited a history of violent tendencies and was suspended the previous semester by a local community college. During that semester, he engaged in erratic and potentially threatening behavior at the Pima Community College campus. Officials took immediate steps that ultimately included suspension with the mandate of reinstatement pending clearance from a mental health professional. Because the institution offered no comprehensive mental health services on campus, they suggested to the student and his parents that he seek external community mental health support. The student failed to follow through with the college's recommendations and did not return to Pima.

After the January 2011 shootings, many citizens launched criticism at campus officials claiming they did not provide enough support that previous year to help the student access mental health treatment or to warn the larger community of the potential danger. In response to public criticism of the college's procedures, the National Behavioral Intervention Team Association for K-12, colleges, and universities (NaBITA) released a position statement that noted most community colleges are not equipped with campus mental health services. While Loughner's behaviors were "erratic, aberrant, and potentially threatening" at the time of his attendance at the college, NaBITA acknowledged that many college students demonstrate similar behaviors "given mental health crisis on college campuses" (2011). As this tragic incident further highlights, investigation is needed to determine the extent of these kinds of issues presented by severely emotionally distressed students within the community college environment.

It is important to note that the majority of students with mental health problems do not exhibit such violent tendencies nor do they end with such tragic personal outcomes. Yet, many of the distressing symptoms these students experience can intensify harmful academic and social interactions within the school environment (Benton et al., 2003; Kadison & DiGeronimo, 2004; Soet & Sevig, 2006). They may contribute to problems with successful course completion or continued enrollment in the higher education environment.

While college students in a variety of institutional settings experience pressures that create psychological distress, community college students face extra pressures which may have an even greater impact on mental health. As noted earlier, many community college students are supporting families, working full-time, managing households, dealing with employment loss, serving as single parents, or returning to college several years after having completed high school. The added pressures may exacerbate mental health difficulties and translate to a greater incidence of attrition directly related to issues with mental health. This study investigates the relationship between these mental health issues and student persistence and retention while in college.

Community Colleges and Student Persistence

With approximately 46% of undergraduates enrolled nationwide in community colleges, research reveals that community colleges are an integral part of the higher education environment (National Center for Education Statistics [NCES], 2003). Moreover, community colleges have a fiscal and social responsibility to ensure that students persist towards their desired goals. In states such as Ohio and Texas, portions of state funding support are being set aside to be awarded based on student success

indicators, including persistence to graduation (Ohio Board of Regents, 2010; Texas Coordinating Board of Higher Education, 2010). With higher education institutions, including community colleges, being evaluated for funding more and more by enrollment, graduation and transfer to four year colleges rates, community colleges must plan ways to ensure that students persist (AACC, 2009; Cohen & Brawer, 2003; Sorey & Duggan, 2008). While community colleges are commended for their open-door admissions policies and universal accessibility, they are often criticized for insufficiently successful outcomes.

One of the challenging aspects of student persistence deals with the varied missions of community colleges. They serve a variety of stakeholders with educational objectives as varied as academic transfer preparation, vocational-technical training, developmental education, or even personal development (Cohen & Brawer, 2003). Furthermore, students' reasons and expectations may fluctuate as they interact within the institutional environment, learning more about course offerings, program availability, and academic expectations within certain programs of study. Strategies for encouraging persistence must consider the various objectives of community college stakeholders.

Statement of the Problem

The majority of data collected on students with mental health issues comes from disability support services offices or university counseling centers at four-year colleges and universities (Soet & Sevig, 2006). There is a noticeable gap in the literature examining how mental health difficulties are impacting community college students. The prevalence and nature of mental health concerns within the community college environment are of particular importance to the understanding of the problem because,

compared to non-disabled students, students with psychiatric disabilities are less likely to attend four-year colleges. Statistics from the U.S. Department of Education suggest that nearly 60 % of students with disabilities, who attend postsecondary institutions, attend those institutions with two-year or shorter programs (Savukinas, 2002). These disability statistics include both physical and mental health disorders. An investigation of the prevalence and persistence rates of mental health issues at community college campuses could provide a broader perspective on the breadth and depth of the types of mental health difficulties within a community college environment. One possible reason for the disparity in data collection efforts may be related to the lack of formal psychological services centers on many community college campuses. As a result, there is no designated mechanism within these institutions to monitor mental health trends. Furthermore, many students who suffer from considerable emotional or mental health difficulties do not seek professional assistance for their problems. These individuals are not adequately represented in the literature because the data collection methods often center on students who choose to seek help at college campus counseling centers (Center for the Study of Collegiate Mental Health [CSCMH], 2009b; Gallagher, 2006).

Within the last decade, there has been more frequent conversation about the perceived rise in the breadth and complexity of student mental health concerns at four-year colleges and universities. Research shows unprecedented increases in prevalence and co-morbidity rates of college student mental health problems including, but not limited to, anxiety, depression, eating disorders, and substance abuse issues (ACHA, 2009; Benton et al., 2003; CSCMH, 2009b; Gallagher, 2006; Kadison & DiGeronimo, 2004; Soet & Sevig, 2006). To date, research on the impact of mental health as it relates

to college achievement or persistence has been conducted with four year college and universities. Many studies lack information about whether mental health problems directly or even indirectly influence college persistence rates in community colleges. This study attempted to fill a gap in the literature through the investigation of prevalence and persistence of first-year students with mental health concerns in a community college setting.

Purpose of the Study

The purpose of this study was to determine if there is a relationship between evidence of mental health problems and persistence for freshmen community college students from fall-to-spring semesters. A range of factors that included psychological symptoms and distress as measured by eight distinct CCAPS subscales, prior mental health treatment, gender, age, financial aid status, and enrollment status were identified as possible contributors to persistence.

Proposed Research Questions and Hypotheses

Using the Counseling Center Assessment of Psychological Symptoms (CCAPS), fall semester completion rates, and spring enrollment figures of the students sampled, the following questions were used to guide this research and test the hypotheses:

Research Question 1: What is the relationship between having mental health problems and first year persistence in the community college?

Research Question 2: Among freshmen community college students with mental health problems, what is the relationship between those who have received clinical treatment in the past or present and those who have never received clinical treatment and first year persistence rates?

Research Question 3: Are any of the mental health sub-scales of depression, generalized anxiety, social anxiety, eating concerns, family distress, hostility, and substance abuse as measured by the CCAPS particularly predictive of fall semester completion or fall to spring persistence rates?

Research Question 4: Do the effects of mental health on persistence differ based on age, gender, enrollment status, or type of financial aid?

I hypothesized that a combination of mental health factors, as measured by the CCAPS subscales (Depression, Generalized Anxiety, Social Anxiety, Academic Distress, Eating Concerns, Family Distress, Hostility, Substance Abuse) and history of mental health treatment (counseling, use of psychotropic medication, psychiatric hospitalization, or substance abuse treatment) relate to completion of the fall semester and re-enrollment in next semester while adjusting for background characteristics of age, gender, number of hours enrolled, financial aid status, and parents' educational background. Previous

studies show that part-time enrollment status, financial concerns, and parents' educational background contributes to a significant amount of variance in student dropout rate (Fike & Fike, 2008; Sorey & Duggan, 2008; Tinto, 1993). Additionally, females and individuals who are in the 18-24 age range report more frequent mental health problems (Halgin & Whitbourne, 2008; Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005). In order to investigate the unique relationship between mental health problems and completion of first semester and re-enrollment to second semester, adjustment for these variables is beneficial.

Theoretical Background and Context

Many factors influence students' decisions to persist toward their educational goals. Vincent Tinto (1975, 1993) developed a theory of student departure that has attracted much attention within higher education. Fundamentally, his longitudinal theory of student departure acknowledges that students enter college with academic, family, and personal traits that impact their degree of commitment to education goals. These predispositions shape the encounters students have with faculty, staff, and peers on campus, impacting how effectively they integrate intellectually and socially. The integrations, whether positive or negative, restructure students' goals and level of commitment to the institution and ultimately influence decisions about whether or not they persist toward their educational goals (Tinto, 1975, 1993). The scholarly research that supports Tinto's original model was conducted with four-year institutions, leaving a gap in the early retention literature about how his persistence model related to community colleges.

Bean and Metzner (1985) add to the literature of student departure by developing a conceptual framework specifically designed for the non-traditional student. The non-traditional student is defined by these researchers as an individual over the age of 24 and not living on campus. Since community colleges have an overwhelming number of students who fall within this demographic, the theory is particularly relevant to the community college population. Bean and Metzner (1985; cited in Sorey & Duggan, 2008) acknowledge the disproportionate weight of background variables when accounting for non-traditional student attrition and emphasize:

> the inclusion of external factors (e.g., influence of family, employment, finances, employers) and psychological outcomes (e.g., utility, stress, goal commitment), and the role that a student's intent to stay or leave has on the attrition process. According to Bean and Metzner, nontraditional students have fewer interactions with faculty and peers and greater interaction with those in the environment external to college than do traditional students. Similar to their traditional-aged counterparts, this model assumes that classroom experiences and activities are important to nontraditional students. (Sorey & Duggan, 2008, p. 80)

This particular theory supports the notion that pre-college individual student traits are important to consider within the context of persistence. While there is a preponderance of research focused on individual student characteristics such as academic abilities, academic preparedness, goals, and level of commitment, there is not as much focus on emotional qualities that could affect persistence. The presence of mental health difficulties related to persistence has not received much attention in the form of empirical study, especially within the community college context.

Another more recently developed model by Terenzini and Reason improves upon previous theories through the creation of a conceptual framework which addresses the need to broadly encompass the various forces affecting college student persistence (Reason, 2009). In their Comprehensive Model of Influences on Student Learning and Persistence, Terenzini and Reason speculate:

> Students come to college with a variety of personal, academic, and social background characteristics and experiences that both prepare and dispose them, to varying degrees, to engage with the formal and informal learning opportunities. These precollege characteristics shape students' subsequent college experiences through their interactions with institutional and peer environments, as well as major socialization agents (e.g., peers and faculty members). The college experience is broadly conceived, consisting of three sets of primary influences: the institution's internal organizational context, the peer environment, and, ultimately, students' individual experiences. (Reason, 2009, p. 662)

Reason (2009) in part concludes that facilitating student persistence needs to be an institution-specific endeavor and that to possess a comprehensive picture, the local organizational context and local student peer environment must be taken into account. "Individual student's decisions about whether to persist are made within, and influenced by, these two proximal contexts. It seems clear that no effective interventions can be devised without consideration of them" (Reason, 2009, p. 678). Using this framework, the need to address individuals' psychological background characteristics, including mental health problems and maladaptive coping behavior, as a function of how students approach interactions within the organizational and student-peer contexts should be

examined. Mental health of college students impacts the educational setting from classroom behavior, student activities, faculty interactions, and even critical incidents on campus (Center for the Study of Collegiate Mental Health [CSCMH], 2009b). Furthermore, the community college environment lends a unique perspective to the importance of the organizational context as a factor of student persistence.

Variations in individual goals and objectives may have a major influence on a person's response to the stress of transition and impact student persistence (Tinto, 1993). Many community college students bring with them a much broader set of life experiences and adversities than the typical four year college or university student who is primarily residential, full-time, traditional age, and non-working (Pascarella & Terenzini, 2005). Aside from the academic challenges, community college students frequently face stressors including complex financial responsibilities, family commitments, and career obligations. The National Center for Education Statistics ([NCES], 2003) associated seven risk factors with student attrition including delayed post-secondary enrollment, high school drop-outs or GED recipients, part-time enrollment status, dependents other than a spouse, single parent status, beginning as a financially independent (self-supporting) student, and full-time employment. While the data from NCES (2003) concludes that in the 1995-96 school year over 70% of community college students possessed at least one of these risk factors and at least 50% had two or more of them, over 72% of students from four-year institutions had none of these risk factors (Sorey & Duggan, 2008). Approximately half of all students who fail to persist leave institutions within the first year. For these reasons, community college students' departure rates are

significantly higher than students at four-year colleges and universities, 42% compared to 16% respectively (Cohen & Brawer, 2003; Sorey & Duggan, 2008).

For those individuals who set academic transfer as their primary educational goal, Pascarella and Terenzini (2005) summarize the evidence on persistence of the two-year student by saying "…the evidence leads us to conclude that students seeking a bachelor's degree who begin their college careers in a two-year public institution continue to be at a disadvantage in reaching their education goals compared with similar students entering a four-year college or university" (p. 381). While the previous research on 2-year and 4-year institutional persistence among student populations has focused on broad differences in institutional characteristics, Pascarella and Terenzini (2005) advocate that future research should investigate more specific and subtle qualities of the college student experience.

Overall student departure from the community college points toward the fact that, on average, these students demonstrate less ability and preparation to handle the academic challenges of college-level coursework (Tinto, 1993). Students at community colleges are prone to have external time pressures such as work and family commitments that may prevent them from accessing assistance when needed for academic or counseling concerns. The presence and types of mental health problems as well as the kinds of support accessed by students may also be mitigating factors in how well students persist in these post-secondary institutions and will be examined in this study.

Delimitations

One rural community college in the Midwest was sampled in this study, and the sample was limited to first-year students. The student ethnic/racial and socioeconomic

demographic information was relatively homogeneous at this particular college. While the findings are specific to the institution being sampled, many of the demographic characteristics of this study's participants are similar to many students enrolling and attending at the community college level. Therefore, findings may be applicable to students enrolled in similar community college contexts. There may be reason to believe that students in urban settings and those from various ethnic groups have differing stress factors. Further study will be needed to evaluate these populations. It may further be argued that some social and cultural trends that may affect adolescent and post-adolescent attitudes and accompanying disorders come late to the Midwest, and may show earlier in other areas of the country. For this reason, replicating this study in other parts of the United States would be advised.

Definition of Terms

For clarity in understanding the discussion in this study, the following definitions may be helpful:

Clinical Individual: A person who self-reports having received treatment for mental health difficulties in the past or currently.

Community College: An educational institution that confers a two-year degree or certificate after the successful completion of specified number of credit hours (American Association of Community Colleges, 2009).

Counseling Center Assessment of Psychological Symptoms (CCAPS): The survey instrument that will be used to collect information from community college students about the various mental health problems faced. Originally developed by the University of Michigan, it is designed to objectively measure specific elements of mental health which significantly impact the college student population (CSCMH, 2009a).

Mental Health: "A state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (World Health Organization, 2010).

Student Persistence: For the purpose of this study, persistence is understood as the progressive reenrollment of college from the fall semester to the spring semester as measured by enrollment reports from the Registrar.

Traditional Age College Student: College student who is eighteen to twenty-four years old (NCES, 2003).

Mental Health Treatment: Involvement, past or present, in counseling or psychological services or use of psychotropic medication as self-reported by participants.

Significance of the Study

This study may make important contributions to the previous research on college students with mental health problems in several manners. First, a large portion of the existing literature on prevalence and types of mental health difficulties in higher education has been within four-year college and university settings and often times within the context of students who visit the college campus mental health clinics. The current research may build upon previous findings by diversifying the sampling to include community college students, both students who would be considered clinical (receiving treatment) and non-clinical (not receiving treatment for mental health problems). Secondly, this study builds upon research that reveals there are a variety of mental health concerns that students face in addition to depression (Gallagher, 2006; Soet & Sevig, 2005). The study uses quantitative measures to determine the prevalence of different types of emotional distress and allows for an examination into the similarities and differences among individuals who exhibit these different kinds of difficulties, particularly as they may influence persistence from semester to semester.

This study may expand the understanding of the prevalence of various mental health difficulties within the context of freshmen community college population. An examination of the breadth and depth of current distress, help-seeking behavior patterns, and persistence from fall-to-spring enrollment could help to develop an understanding of ways in which mental health problems are negatively impacting first-year community college students. The research may identify some aspects of mental health that should be

added to the personal characteristics included in the models of student persistence. If a relationship exists between mental health issues and persistence, it suggests that community colleges could improve persistence rates by providing more support for students with mental health concerns.

Qualifications of the Researcher

Since this research requires both administration and interpretation of an established instrument to assess psychological symptoms, it will be helpful in this case to describe the qualifications of the individual conducting the research. The researcher's education background includes attainment of an Associate of Arts Degree in Psychology from a community college similar to the one included in this study, a Bachelor of Science Degree in Psychology, and a Master of Science Degree in Clinical Psychology. The researcher holds a current state license in Professional Counseling and has over seventeen years of experience working with individuals with mental health problems. She has been employed in a community college setting for eight years and has held a variety of positions including coordination of disability services, directing counseling and advisement services, and psychology faculty member.

Organization of the Study

This research work is presented in five chapters. Chapter 1 provides an introduction to the study that includes the background, context, and importance of the research study. The second chapter presents a review of literature describing college student mental health, community college student persistence, and theoretical models of higher education attrition/retention. Additionally, Chapter 2 highlights that the research questions presented in this study demand further investigation. Chapter 3 describes how

the study is designed, the methodology that will be used to obtain and analyze data, and the sample that will be tested to obtain data for the research. Chapter 4 will provide a description of findings from the survey and from compare survey results to completion of fall semester and persistence to the following semester. In Chapter 5, the researcher will examine the meaning and implications of these findings, will develop a set of recommendations based on the research, and suggest further areas of study related to these findings and analysis.

Chapter 2

Literature Review

Students frequently encounter challenges, especially during the first-year of college. However, a growing number of college students are reporting decline in their mental health and well-being that can threaten coping abilities and overall college persistence. Mental health distress is often associated with academic failure, isolation and disrupted interpersonal relationships, and withdrawal from college. The focus of this literature review is to explore the research concerning the complexity of college student mental health. In an effort to further understand the unique challenges community college students encounter, this chapter provides a review of empirical studies related to community college students and persistence. Additionally, an overview of several theoretical higher education attrition/retention models is presented. The links between mental health and persistence is discussed, as well as the gap in existing mental health research as it relates to the community college population and student persistence.

College Student Mental Health

General Background of the Issue

The nature of student mental health has been a growing topic of concern on college and university campuses throughout the country. A rise in the frequency and complexity of student psychological difficulties has been reported in a number of studies in the four-year college environment (Benton et al., 2003; Collins & Mowbray, 2005; Gallagher, 2006; Soet & Sevig, 2006; Zivin, Eisenberg, Gollust, & Goberstein, 2009). The majority of data to support these findings are acquired through campus counseling centers. According to the National Survey of Counseling Center Directors, over 92% of

the participating institutions reported an increase in the number of students on campus with severe psychological problems in recent years (Gallagher, 2006). According to Soet and Sevig (2006), the number of university students seeking counseling services has risen between 40-55% within the past decade. Students who experience emotional distress often experience disruption in the ability to successfully navigate their college coursework. In particular, students in their first year of college encounter a number of transitions in their environment, identity formation, financial situation, and support system. Mental health difficulties can negatively impact factors essential for success in higher education including motivation, concentration, interpersonal relationships, and task completion (Collins & Mowbray, 2005; Kadison & DiGeronimo, 2004). Emotional distress can therefore negatively impact academic performance and jeopardize persistence.

A study done by Zivin, Eisenberg, Gollust, and Golberstein (2009) examined the prevalence and duration of mental health problems in a large public university from fall 2005 to fall 2007. This research focused on gathering data on college student mental health problems, student use of mental health services, and perceived need for treatment within the university context. A survey and several brief screening instruments were used to measure symptoms of mental disorders including depression, anxiety, and eating disorders. Of the 5021 students who were originally selected, 2843 completed the initial survey in fall 2005. All students who completed the original survey and were still enrolled at the university in 2007 were contacted again to complete a follow-up survey. Of those individuals who were re-contacted, 763 students completed the second survey. Since one of the purposes of the study was to examine changes over time, the study

examines the data of the 763 students who completed both surveys. Researchers found that over one-third of the student population had a mental health problem and that over 60% of the students who reported mental health problems in the 2005 survey also displayed problems in the follow-up survey in 2007. They also determined that there was a high level of persistence in the lack of perceived need for support and in untreated student problems over time (2009). While the findings provide some new longitudinal information on the nature of college student mental health, there are some limitations. The study failed to measure the negative impact psychological problems had on academic performance and persistence. Although the study was conducted at a large public university with demographics similar to the national population of students at four-year institutions, they may not be representative of all college students. It is quite possible that students within different types of institutional environments, such as community colleges, may experience mental health issues differently. Furthermore, community college students may have even more limited access to traditional campus counseling center supports than even students at these institutions. Given the growing number of mental health problems and demand for supportive services, improvement in knowledge and understanding of the college student mental health phenomenon is vital within the context of shrinking resources in the higher education world.

Depression data. One category of college student mental health that has a body of scholarly research and evaluation is depression and suicidal behavior. According to the National College Health Assessment (NCHA), students reported depression as the fourth ranked health concern experienced following allergy, sinus, and back problems (ACHA, 2008). The survey was administered in the Spring of 2008 to 80,121 college students

nationwide. Of the 106 colleges and universities that participated, 101 were four-year institutions. Among the 17% of college students that reported a diagnosis of depression, over 32% received the diagnosis within the past year, 24.5% stated they were in treatment for depression, and 35.6% were receiving medication for depression (ACHA, 2008). Benton et al. (2003) found that at one large Midwestern university counseling services found that over a 13 year period ending in 2001, the prevalence of depression tripled to over 40.67% of student receiving assistance for these symptoms. Additionally, serious suicidal ideation and intent tripled during that time as well.

Soet and Sevig (2006) conducted an exploratory study to describe the mental health history and current distress and coping patterns of a diverse group of college students at a large Midwestern public university. The focus of this research was on the general college population and not limited to students seeking assistance in the campus counseling center. Nine hundred thirty-nine students completed the on-line CCAPS survey over a 3 month period. The researchers found that approximately 15% of the students surveyed scored high on the depression scale of the CCAPS (Soet & Sevig, 2006). While the data collected included information about other mental health problems such as anxiety, substance abuse, and eating disorders, depression was the most common problem identified. Over 75% of the students who identified mental health problems also voiced concerns about whether or not they would succeed academically. This data corresponds to the national data on prevalence of depression among college students that is measured through the NCHA.

Furr, Westefeld, McConnell, and Jenkins (2001) surveyed 1455 college students at four different colleges and universities and found that 53% of the sample stated that

they suffered depression since beginning college. Because help-seeking behavior is usually based on self-assessment, the researchers of this study chose to leave the definition of depression open to participants' self-definition. Students who self-identified as depressed cited contributing factors to the depression as including grade problems, financial struggles, loneliness, interpersonal relationship difficulties, and feelings of hopelessness. Of the 53% of the respondents in this study who reported difficulties with depression since beginning college, over 9% stated that they had considered suicide during that time.

Suicide data. According to the Centers for Disease Control ([CDC] 2005), the second leading cause of death among college students is suicide. Furthermore, the National Institute of Mental Health ([NIMH], 2004) reported that there were eight to 25 suicide attempts for every actual suicide death or, in other words, 96 to 300 attempts per 100,000 individuals in the 20-24 age range. These statistics would suggest that even small college campuses are likely to experience one to three student suicide attempts on an annual basis if attempts are even by distributed among institutional types. The ACHA-NCHA (2009) reported that 1.3% or 1,004 college students who took the national survey reported at least one suicide attempt within the 2007-2008 academic year. Additionally, over 9% or 7,141 stated that they seriously contemplated suicide within the same year.

There have been several risk factors associated with suicidal behaviors. Depression is considered a major risk factor for suicidal ideations and attempts, along with other psychological disorders such as post traumatic stress disorder, bipolar disorder, and schizophrenia (American Foundation for Suicide Prevention; Furr et al.,

2001; NIMH, 2004; Soet & Sevig, 2006). Benton et al. (2003) found that the numbers of college students reporting suicidal ideation and intention tripled over a 13 year period from 1989 to 2002. These numbers corresponded with similar increases in reported symptoms of depression. Many students feel overwhelmed by the myriad of demands placed on them in the college environment. These feelings can sometimes lead to a sense of hopelessness that has also been associated with suicidal ideations and attempts (American Psychiatric Association, 2001; Furr et al., 2001; Eisenberg, Gollust, Golberstein, & Hefner, 2007). Furr et al. (2001) surveyed 1455 students across four university campuses and found that 53% of the students who had considered suicide pointed to hopelessness as the most frequent cause for suicidal thoughts along with feelings of loneliness and helplessness. A history of past and current substance abuse is also associated with an increased risk for suicidal behaviors. The Center for the Study of Collegiate Mental Health ([CSCMH], 2009b) conducted a pilot study during the fall of 2008 with over 28,000 students receiving mental health services at 66 four-year colleges and universities. One of their findings showed that approximately 50% of the students who reported multiple binge-drinking episodes within a two-week period also stated that they had seriously considered suicide in the past.

There is a definitive behavioral threshold between having suicidal thoughts and engaging in suicidal threats or attempts. Meilman and Pattis (1994) conducted a study at a private four-year university counseling center to examine risk factors associated with suicidal threats and attempts. Sixty students were identified over a one year period, and the study determined that the most prevalent risk factors found in suicide attempters was work or school failure. For college students who threatened suicidal behavior but did not

attempt, the major problem cited was difficulties with an interpersonal relationship. The most useful intervention in this particular study was counseling/therapy and the use of an emergency on-call system on campus for students who may feel suicidal.

Substance Abuse data. Heavy episodic alcohol consumption, otherwise known as binge drinking, is a serious public health problem within the higher education community (Caldeira, Kasperski, Sharma, Vincent, O'Grady, Wish, & Arria, 2009; CSCMH, 2009; Wechsler, Lee, Kuo, Seibring, Nelson, & Lee, 2002). A number of important research studies highlight many of the findings in the literature concerning college student substance use and abuse.

Wechsler et al. (2002) examined the findings from four of the Harvard School of Public Health College Alcohol Study (CAS) surveys conducted between 1993 and 2001. The CAS is one of the largest surveys conducted on college student alcohol consumption in the United States. The survey is administered to four-year universities, and this particular study focused on 119 of the institutions that participated throughout the 1993-2001 time period. Researchers compared data from the 1993, 1997, and 1999 studies to examine trends in alcohol usage and problems on the campuses. Results showed that over 44% of college students admit to binge drinking and that percentage was consistent throughout the eight year period, in spite of increased prevention efforts at these institutions. Binge drinking was defined by the survey, similar to most research in the field of substance abuse, as the consumption of 5 or more drinks in a row for men and 4 for women. While students who reported binging 3 or more times within a two week period were considered *frequent* binge drinkers, individuals who had binged 1 to 2 times were categorized as *occasional* binge drinkers. The results of the analysis indicated that

the rates for frequent binge drinking rose from 1993 (20%) to 2001 (23%). Researchers note that heavy drinking behaviors vary according to many different personal and environmental characteristics. For instance, they closely examined the traditional college students within this sample, as defined by those who were 18 to 23 years old, never married, and living independently of their parents. Within this sub-set, researchers found that over 60% of white men and 54% of white women were binge drinkers. Over 75% of fraternity members, 65% of sorority members, 63% of male athletes, and 52.5% of female athletes engaged in binge drinking. The results of the study suggest that it is important to examine the specific characteristics of the student population in order to better tailor efforts for successful education and prevention. Because community college students are not represented in this research or in most other scholarly research on the substance abuse topic, little is known about the population's unique substance use/abuse patterns.

The CSCMH pilot report (2009b) confirms a negative relationship between reported frequency of binge drinking and difficulties with academic performance. Over 41% of the students surveyed reported binge drinking behavior a minimum of three times within the past two weeks before the survey was administered. Binge drinking had a consistently negative relationship with self-reported GPA and scores on the academic distress scale of the CCAPS scale.

Anxiety. Symptoms including excessive worry about a number of events, difficulty controlling worry, restlessness, fatigue, problems with concentration, irritability, muscle tension and sleep disturbances are associated with anxiety disorders (American Psychiatric Association, 2000). When these symptoms occur in combination

and persist over time, they can significantly impair academic and social functioning. Many college students are trying to balance family and work responsibilities along with college coursework. As life demands become more complex college students may find it difficult to cope with the multitude of stressors. In fact, Benton et al. (2005) found a significant increase in the category of stress/anxiety reported by college students in the study of a thirteen year period in one four-year university counseling center. The incidence of stress/anxiety reported by the 13,257 college students who visited the counseling center during the study increased from 36.36% during 1988-1992 to 62.87% in 1996-2001.

A review of the literature indicates that anxiety disorders are currently the most prevalent category of mental health diagnoses reported among the general population (Kessler et al., 2005; Ries Merikangas, 2005). Kessler et al. (2005) conducted the National Comorbidity Survey Replication (NCS-R) and found a lifetime prevalence rate of 28.8% for anxiety disorders among the general population with a much younger median age of onset (11 years) than mood disorders (30 years) or substance abuse (20 years). While anxiety disorders are the most prevalent category of mental health diagnoses in the general population, the incidence and nature of anxiety among college students is not studied as well as is depression. The survey of college counseling center directors conducted regularly by Gallagher (2006) fails to gather data on prevalence of anxiety difficulties among college students. However, they do ask whether the participating institutions hold an anxiety screening day on campus. Only 61 of the 362 schools surveyed actually conducted an anxiety screening day. Among the institutions who conducted a screening day, 3280 students were screened for anxiety difficulties and

19% were referred for counseling as an outcome of the screening. The National College Health Assessment asks participants whether or not they had anxiety within the last year and if they ever had been diagnosed with an anxiety disorder (ACHA, 2009). While 13.2% reported having an anxiety disorder diagnosed within the past year, the survey does not include questions pertinent to the positive symptomology of anxiety problems.

One study conducted by Schwartz (2006) looked at the prevalence of psychopathology in students seen at a college counseling center in a medium-sized, private university located in the northeastern United States. Archived documentation was reviewed from the academic years 1992-1993 through 2001-2002. Anxiety disorders were the fourth most prevalent category of mental health problems diagnosed by clinicians with an 8% prevalence rate during this time period. Limitations to this study included the different methods clinicians used to arrive at diagnostic conclusions within the counseling center and the different ways data were acquired throughout the length of the research study. Additionally, the data only represents college students who accessed counseling services and do not provide information on the prevalence of mental health problems within the general student population nor does it indicate whether these students had higher attrition rates than other students.

Impact of Mental Health Problems on Persistence

College students who experience mental health difficulties face challenges that have the potential to negatively impact persistence toward educational attainment. A review of the literature shows a relationship between academic performance and mental health. A study conducted by Pritchard and Wilson (2003) found that students who reported high levels of stress were more likely to earn a lower GPA and report intention

to drop out of college than students who were not experiencing high stress levels. Students who revealed intent to depart from college also reported lower self-esteem and higher levels of fatigue than their counterparts. Pritchard and Wilson (2003) concluded that the capacity to cope with a multitude of stressors had a positive influence on student retention. The data from the National College Health Assessment (ACHA, 2006) revealed that 15.7% of the participants indicated that mental health problems of depression or anxiety negatively impacted their academic performance within the past year. First-year college freshmen are particularly vulnerable to these emotional concerns and are the least likely group to utilize campus counseling services (Benton et al., 2003; Kadison & DiGeronimo, 2004).

College students who require hospitalization because of their mental health problems face problems with academic performance which may jeopardize retention as well. The Gallagher (2006) study of college counseling centers reported that 327 of the participating institutions initiated psychiatric hospitalizations in the 2006 year for 2368 college students. Hospitalizations result in class absences and further challenge students' academic performance during the semester. Among the centers who ask students whether or not the counseling center services helps them with the decision to remain enrolled in college, 53.6% responded in a positive fashion. However, the concern continues to exist with college students who attend institutions, such as many community colleges, where there are limited resources available for personal counseling needs.

Virtually all of the research reported on college student mental health has been conducted at four-year colleges and universities leaving a large percentage of college

student mental health behavior underrepresented. To date, a primary focus has been to collect data concerning students who chose to seek help at the college campus mental health centers (Benton et al., 2001; Gallagher, 2006; Soet & Sevig, 2006). Not as much information is known concerning the broad range of mental health concerns among the general student population, particularly students who do not seek counseling for their psychological problems. Additionally, the literature reported on college mental health has been from four-year colleges and universities and not on two-year institutions. Over 46% of the U.S. college student population is attending community colleges. Thus, it is vital to determine the nature and possible unique mental health concerns these students face to gather a more complete picture of college student mental health. While the vast majority of modern day four year institutions embrace campus mental health centers and services as integral in the overall campus student support system (Alipiria, 2007), many two-year institutions do not share that same perspective. Because many community college campuses have significantly restricted counseling services available, data collection efforts concerning college student mental health issues are underreported. Community colleges that do have counseling centers available for students often focus their support resources primarily around academic and career counseling which results in limited resources for personal counseling needs (Cvancara, 1997; Durodye, Harris, & Bolden, 2000). Alternative ways to collect data on community college student mental health and its impact on persistence need to be considered.

Community Colleges and Persistence

Much research has been conducted to identify factors that contribute to the likelihood of student persistence in higher education. The reasons for student attrition are

complex, involve numerous variables, and are much more difficult to completely depict than is commonly recognized (Pascarella & Terenzini, 2005; Tinto, 1993). The NCES (2003) conducted a longitudinal study and pinpointed seven factors that put students at high risk for departure from post-secondary education. They included delayed entry to higher education by more than one year post-high school graduation, not having a regular high school diploma, full-time employment during college, part-time enrollment status, having children who are dependents, single parenthood, and beginning college as a financially independent (self-supporting) student. The results also concluded that in the 1995-96 school year over 70% of community college students possessed at least one of these risk factors and at least 50% had two or more. However, 72% of students from four-year institutions possessed none of these risk factors (Sorey & Duggan, 2008). Attrition data indicate that approximately 41% of college students fail to persist from first year fall semester to second year fall semester and only 34% of students persist to degree attainment within a six year period (ACT, 2007). Historically, college student retention research focused primarily on traditional students in residential four-year college settings. Though some of this retention research may be relevant for all postsecondary students, it is important to acknowledge, as the preceding data indicate that community college students present with a different set of characteristics than the traditional university student. The following is an overview of some of the empirical studies of the factors related to retention in community colleges.

Variables Related to Persistence in Community Colleges

Age. Community college students are generally older than the average traditional university student. According to Aslanian , approximately 60% of adults (25 years and

older) who attend post secondary education enroll in community colleges (as cited in Fike & Fike, 2008). Kasworm (2003) conducted a study that revealed over 69% of non-traditional students, as defined by 25 years of age or older, are enrolled in part-time course work as compared with 27% of younger students. In the study it was noted that non-traditional students were time-focused on adult life obligations and had a more limited time commitment to collegiate involvement beyond the classroom. Although non-traditional students encounter multi-faceted life obligations, the impact of family and employment is not the same for all students (Smith, 2005). Houser (2005) identified life obligations of non-traditional students to include employment, spouses, dependents, and other extended family members such as parents or grandparents. Because of the varied non-academic related obligations, non-traditional students frequently struggle with meeting the demands of college. Summers (2003) explored attrition issues at the community college level and found that non-traditional students who exhibited previous unsuccessful educational experiences or disruptive personal, family, and social dynamics possessed higher attrition rates than the average community college student. In many cases, poor coping strategies placed the academic success of the non-traditional students at risk contributing to patterns of poor attendance, lower academic performance, and higher attrition rates. Obstacles encountered by these high-risk, adult students included the need for reliable childcare and transportation as well as limited support from family, peers, or employers. Additionally, non-traditional students reported an awareness of the need for academic remediation at higher rates than traditional-age students reported (Summers, 2003). Many were academically underprepared, as evidenced by entrance placement test scores, and required remediation in one or more subject areas. Factors

such as those mentioned above frequently impact student persistence and educational attainment among non-traditional students.

College Readiness. Older adult students are not the only enrollees at community colleges who are likely to be underprepared for post-secondary education at higher rates than are students at four-year colleges and universities (Bragg, 2001; Fike & Fike, 2008; Summers, 2003). McCabe (2000) reported that nationwide as many as 41% of students who enter community colleges are under prepared in at least one or more of the basic areas of reading, writing, or arithmetic. Open admission policies adopted by community colleges allow a diverse student population access to post-secondary education. In many instances, community college students enter the world of higher education without the necessary academic skill set required for retention and persistence. Grimes (1997) examined the characteristics of academically underprepared students at the community college level to determine the relationship to persistence and academic success. The study concluded underprepared students demonstrated a lower course completion rate, greater attrition, and more test anxiety than college-ready students. The study also found that "underprepared students demonstrated a more external locus of control, indicating a perception of less control over their environment and less responsibility for taking action" (p. 47). The conclusions of the study also suggested that institutions take a greater role in the development of an individual's sense of ownership and personal responsibility for academic achievement in order to increase persistence with students who may have more of an external locus of control.

The open-door policies held by most community colleges rarely exclude anyone from accessing course work on some level. Cohen and Brawer (2003) note that

community colleges "have always tended to let everyone in but have then guided students to programs that fit their aspirations and in which they have some chance to succeed" (p. 260). Since the late 1980's and early 1990's, most community colleges began implementation of placement testing processes designed to determine college readiness as well as offer developmental education coursework for those students who are underprepared for college level programs (Bragg, 2001; Byrd & MacDonald, 2005; McCabe, 2000). For students who are not academically prepared, developmental coursework is essential to bridge the gap between high school and college, coupled with support services including advisement, tutoring, counseling, and learning centers (Bragg, 2001; Shaw, 1997). Among four-year institutions, ACT (2004) identified academic advisement, first-year orientation courses, and learning centers as three main programmatic supports that provide the greatest contributions to student retention. Programs and services such as those mentioned above, help to decrease attrition with academically underprepared students.

Socioeconomic Status. The relationship between financial variables and higher education persistence has also been studied at some length by researchers. Although the matter of increased student access has been underscored in higher education public policy since the 1960's, individuals who are first in their families to attend college as well as those who come from low income backgrounds continue to confront obstacles on their way to degree attainment. Low-income students with financial challenges must rely on financial aid subsidies to attend college and are viewed as high risk for departure from higher education (Corrigan, 2003).

Corrigan (2003) examined the retention challenges of college students with low income levels. Students who had a family income of 150 percent of the poverty threshold or less (as determined by the federal government guidelines) were designated in the low-income bracket. These students were compared to students from middle and upper income families whose income was at or above 300 percent of the poverty threshold. The study further analyzed differences between independent and dependent students because low-income independent students are frequently supporting families. Corrigan (2003) felt the financial challenges faced by this sub-group warranted special analysis. Data from several studies administered by the National Center for Education Statistics was compiled for the project. Corrigan found that low-income undergraduates were less likely to persist to attain a degree than students from the higher income group. Several persistence risk factors were found to interact with low-income status including institutional choice, academic background, as well as family and personal circumstances. Low-income independent students with families overwhelmingly chose 2-year institutions, such as community colleges, over four-year colleges and universities. According to Corrigan, less than 10 % of the low-income independents in the sample chose to attend baccalaureate-granting universities. Low-income dependents students were also more likely to attend community colleges than middle or upper income students (45% versus 38 %).

In addition to financial disadvantages, Corrigan (2003) found low-income students were less likely to have pursued rigorous high school coursework and also delayed entry to higher education by more than a year than were middle and upper income students (90 % versus 24%). Low income students were more likely to have

earned an alternative high school credential rather than a traditional diploma, particularly the sub-group of independent students with families (22% independent students with dependent children versus 3.3% of middle and upper income students). In fact, over 34% of low-income students were considered independent and supporting a family as compared to only 4% of middle to upper income students. Students from the low-income dependent were more likely to come from family backgrounds where neither parent had higher education experience (67% low-income dependent versus 28% middle to upper income).

First-generation college students from low income backgrounds have the added disadvantage of being unable to rely on family for resources and knowledge concerning the academic and social stressors encountered in college. They are more likely to begin college academically underprepared with limited access to information about financial aid, time management skills, campus operations, or how to adapt to an unfamiliar social environment (Fike & Fike, 2008; Thayer, 2000). First-generation students often struggle with both academic and social integration during their higher education experiences. As a result, both low-income and first-generation college students are among the highest risk for attrition before degree completion (Thayer, 2000).

Because many college campuses place a strong emphasis on retention, it is necessary to understand the complexity of the contributing and preventative aspects of the problem. From a review of the literature it is apparent that community college students possess a different set of characteristics from university students, often placing them at higher risk for early departure. These specific characteristics create additional challenges for student retention efforts and may put students at higher risk for mental

health problems such as depression and anxiety, further compounding the likelihood of departure. For these reasons, they are particularly applicable to this study.

Theory

Departure/Retention Models

In order to understand the factors involved in persistence, I examined the theoretical models available that attempt to predict and explain the common variables associated with higher education persistence. The work of Tinto, Bean, Austin, Terenzini and Pascarella are particularly applicable to an examination of how mental health issues may affect student persistence.

Tinto

Vincent Tinto offers one of the early and most widely recognized theories on student departure (Napoli & Wortman, 1998; Pascarella & Terenzini, 2005; Reason, 2009). First published in a literature review (Tinto, 1975) with a later more comprehensive book titled *Leaving College: Rethinking the Causes and Cures of Student Attrition*, Tinto (1993) identified a multivariate model for student departure which included intention, commitment, adjustment, academic difficulty, congruence, isolation, obligations, and personal finances. Tinto's student integration model (1993) hypothesized that as students enter the college community they do so with unique backgrounds, personal characteristics, particular aims and intentions. At the same time, they are impacted by the separation from their previous environment. Individual predispositions and background experiences interact with the personal aims, intentions, and commitments to the new environment causing the possibility of disruption in the college experience which may lead to student departure. Student characteristics, academic and social interactions in the collegiate environment combine to impact the likelihood of persistence in college.

Briefly, his model was built upon by the work of Spady (1970) who initially suggested the application of sociologist Emile Durkheim's analysis of social influences involved in suicide to student departure in higher education. Generally speaking, Durkheim posited that the greater the congruence between the individual and societal values, the more solid the relationships with other people, the more assimilated an individual is within a society. The more assimilated an individual is within the society the less the likelihood of suicidal behavior. Spady (1970) applied Durkheim's classic analysis to higher education retention, and Tinto (1975; 1987; 1993) then expanded and refined the application to his theory of student departure. He suggested that persistence to educational attainment is directly impacted by two types of commitment; specifically institutional and goal commitment. Institutional commitment is defined by the degree that a student is motivated to persist at a specific college or university. Goal commitment is better defined as the degree to which a student is committed to earn a college degree in general.

According to Tinto (1993), both institutional and goal commitments are directly impacted by external demands and the amount of academic and social integration. Integration has been conceptualized in many ways, but Tinto defines it as the extent that a student identifies with and shares attitudes or values of the instructors and classmates, thereby becoming a member of the college community. Specifically, social integration refers to the social ties that result from daily interactions within the environment while the outcome of academic integration involves the degree to which students share information, perspectives, and values common to other members of the collegiate world. Positive interactions with either formal or informal academic and social systems of the

college lead to higher levels of integration. The positive interactions increase the likelihood of persistence toward educational attainment. Likewise, negative or minimal interactions decrease the amount of student integration and jeopardize persistence. Research supports Tinto's theory that academic and social integration are influenced by a number of factors including but not limited to, age, socio-economic status, personality factors, and precollege educational experiences (Pascarella & Terenzini, 2005). Tinto's model of student departure (1975; 1993) has been widely researched and offers a viable theoretical frame for understanding college student persistence to educational goals.

Bean

John Bean's (1980) early model of retention proposed that student departure was similar to employee turnover and that individuals depart from college for the same sorts of reasons that employees quit their jobs. In his model, he identified four types of variables which included leavers (dependent variable), student satisfaction and institutional commitment (intervening variables), institutional factors, and background characteristics (socioeconomic status, family and friend support, past high school academic performance). In a similar way to Tinto's model, Bean (1980) theorized the level of interaction between students and the institution will impact persistence. Institutional dynamics including communication, commitment to goals, institutional quality, and organizational procedures will impact student satisfaction levels in a similar way that employees experience the workplace. The interaction between variables affects retention rates of students just as it would turnover rates of employees in the workplace.

Bean and Metzner (1985) expand on Bean's earlier model to conceptualize a framework specifically designed with the non-traditional student in mind. In their

psychological outcomes attrition model, they recognize that earlier theories of student departure, such as Spady or Tinto, focus a great deal on socialization. Because non-traditional students frequently do not have opportunities to become socially integrated into the campus environment in similar ways to traditional students, a distinctive model of attrition could help to better explain the retention process for the non-traditional population. Bean and Metzner (1985) theorize that a student's departure decision is based on four categories of variables that include academic performance (grade point average), intent to leave (influenced by academic variables and psychological outcomes), background variables (high school performance and identified higher educational goals), and environmental factors (influence of family, friends, employers, finances). Bean and Metzner theorize that non-traditional students frequently have fewer contacts with college classmates or faculty and much more interaction with the environment outside the college than do traditional students (Sorey, 2008). The model does acknowledge that classroom interactions are equally important to both traditional and non-traditional students. Bean and Metzer believe that each of the four categories of variables have the potential to directly impact student departure decisions.

Summers (2003) explains the interactive effects between variables in the Bean and Metzner model as they relate to community college students. Summers notes that the model provides for two interaction effects that potentially influence student departure. Academic and environmental variables can interact in a number of ways to potentially influence student retention. External influences may prove to be important enough to sway a student with low interest in academic variables to remain in college if the significance of the external influences is in a positive direction (Summers, 2003). In

instances where students have very high values for academic variables but negative external influences, there is an increased negative impact on student retention. Summers (2003) also describes how the academic outcomes variable and the psychological outcomes variable may interact to affect student retention. Bean and Metzner hypothesize that psychological outcomes are significant enough to influence a student who has poor academic outcomes to stay in school if the psychological outcomes are positive. Likewise, positive academic outcomes but negative psychological outcomes may negatively impact student retention.

To summarize, the psychological student attrition model proposed by Bean and Metzner focuses on the role that factors outside of the college environment play in influencing thought processes and decisions regarding student departure from higher education. External factors such as support from family and friends, finances, and cooperation from employers influence student attitudes and intent to persist. The model also acknowledges college performance is an outcome of both the social and psychological dynamics of the student.

Astin

Theory developed by Alexander Astin attempts to explain how students evolve during the college years. His theory of student involvement primarily resulted from his own research (1975, 1977, 1984, 1993) that suggests a student's level of involvement contributes to the likelihood of persistence or departure from higher education. He defines student involvement as the degree of physical and psychological energy expended in the college experience and directly results in student learning. Similar to the work of Pace (1988) that focuses on the quality of student effort, Astin's theory proposes that

student learning will occur only to the extent the student takes advantage of opportunities and resources provided by the institution. The likelihood of persistence to educational attainment is more than the result of the institution's influence on the student but relates more to the quality of student effort and participation with the resources supplied by the university (Astin, 1984; Pascarella & Terenzini, 2005). In contrast to the theoretical frameworks of Tinto (1993) or Bean and Metzner (1985), the theory of student involvement focuses more on the behavioral aspects of involvement and asserts "It is not so much what the individual thinks or feels, but what the individual does, how he or she behaves, that defines involvement" (Astin, 1984, p. 519). While Tinto emphasizes isolation and incongruence as aspects contributing to attrition, Astin centers the attention toward student lack of involvement.

A study conducted by Milem and Berger (1997) examines the relationship between Tinto's (1993) Integration Model and Astin's (1984) Theory of Student Involvement. Their results support an integrated model where student behaviors and perceptions interact to influence the development of academic and social integration. Milem and Berger (1997) incorporate the longitudinal model of Tinto (1975) with Astin's behavioral measures of involvement to propose their own integrated model of retention. They propose that an individual's level of behavior contributes to certain attitudes and beliefs about peer and institution support which then influences future actions. The study focuses on first-year freshmen students attending a private university. Results show that early involvement is the major factor in retention, especially involvement with faculty within the first eight weeks. According to the findings, involvement behaviors significantly influence academic and social integration to the campus environment.

Pascarella

Pascarella (1985) developed a general causal model for student learning and change that adds a focus on institutional structural and environmental characteristics to many of the previous variables seen in the works of Tinto, Astin, and Bean. Although Pascarella's model was originally designed to assess cognitive growth and learning, it has been equally useful in the study of other student outcomes, such as persistence (Pascarella & Terenzini, 2005). Briefly, Pascarella (1985) identifies five categories of variables that impact student change and persistence. The first two categories are student background/precollege traits and structural/organizational characteristics of the institution. These categories influence the third category of variables which is the institutional environment. The fourth category of variables, interactions with agents of socialization at the institution (faculty and peers), is impacted by the first three categories mentioned above. Quality of student effort, the fifth category of variables, is influenced by student background/precollege traits, interactions with faculty/peers, and the institutional environment. The structural/organizational characteristics of institutions are thought to have an indirect impact on student growth and persistence to educational attainment.

Terenzini and Reason (2005) expands the work of Astin (1985, 1993), Tinto (1975, 1993), and Pascarella (1985) and derives a conceptual model that specifically includes an emphasis on an organization's structure on student outcomes. They incorporate characteristics such as institutional policies affecting course sizes, promotion and tenure, as well as budget and staffing structure. The framework of Terenzini and Reason broadly encompasses four categories of influences on student persistence to

include precollege characteristics and experiences, the organizational context, student peer environment, and the individual student experiences (Terenzini & Reason, 2005; Reason, 2009). The model suggests:

> "…students come to college with a variety of personal, academic, and social background characteristics and experiences that both prepare and dispose them, to varying degrees, to engage with the formal and informal learning opportunities. These precollege characteristics shape students' subsequent college experiences through their interactions with institutional and peer environments, as well as major socialization agents (e.g., peers and faculty members).The college experience is broadly conceived, consisting of three sets of primary influences: the institution's internal organizational context, the peer environment, and, ultimately, students' individual experiences" (Reason, 2009, p. 662).

The conceptual framework of Terenzini and Reason includes informal student-faculty interactions and also examines how student and institutional characteristics explicitly interplay to impact persistence. Because the mission, policy and procedures of community colleges are vastly different from many four year colleges and universities, the lens of Terenzini and Reason's framework is particularly useful when considering how the community college environment may impact student persistence differently from the four-year setting.

Summary

In spite of decades of research, student persistence remains a major concern in the United States higher education system. Community college students, in particular are among the most likely to have risk factors associated with early departure. The retention

theories of Tinto (1993), Bean and Metzner (1985), Astin (1984), Pascarella (1980), and Terenzini and Reason (2005) supply understanding for some of the reasons for student departure. The literature reveals that community college students, in particular are likely to possess multiple risk factors associated with early departure including academic under-preparedness, multiple external commitments (family responsibilities, employment), lower socio-economic status, and first in their family to attend college.

While evidence exists about college student mental health problems at the four year institution level, little is known about the mental health problems among community college students. This study seeks to examine the relationship between community college students' mental health difficulties and the likelihood of within-year persistence during the first year of college. Increased knowledge of these variables will contribute to better student development policies and services designed to address college student mental health needs. The following chapter describes how the study is designed, the methodology that will be used to obtain and analyze data, and the sample that will be tested to obtain data for the research.

CHAPTER 3

METHODOLOGY

The purpose of this study was to investigate the specific types of mental health problems reported by first-year students in a community college environment, both clinical individuals (students who are reportedly receiving treatment for mental health difficulties) and non-clinical individuals (students who have not received treatment for mental health difficulties in the past or currently). Additionally, this study attempted to determine the relationship between evidence of mental health problems and persistence for first year community college students as from fall to the spring semesters. Persistence was evaluated in two ways: successful completion of the fall semester and enrollment in spring semester classes. Successful completion of the fall semester was defined as completion of a total of 67% of all coursework attempted, including degree and remedial coursework. A grade of "F" (Failure), W" (Withdrawal), "H" (Audit), or "I" (Incomplete) was considered unsatisfactory. Enrollment in spring semester was defined as enrollment status on the first day of the spring term.

Research Questions and Hypotheses

Using the Counseling Center Assessment of Psychological Symptoms (CCAPS) and fall-to-spring enrollment persistence figures of the students sampled, the following questions were used to guide this research and test the hypotheses:

Research Question 1: What is the relationship between having mental health problems and first year persistence in the community college?

Research Question 2: Among freshmen community college students with mental health problems, what is the relationship on fall to spring persistence between those who have received clinical treatment in the past or present and those who have never received clinical treatment?

Research Question 3: How does each of the mental health categories of depression, generalized anxiety, social anxiety, eating concerns, family distress, hostility, and substance abuse as measured by the CCAPS influence fall-to-spring persistence differently?

Research Question 4: Do the effects of mental health on persistence differ based on age, gender, enrollment status, or type of financial aid?

The methodological framework for investigating the answer to these questions is organized in this chapter as follows: (1) research sample, (2) instrumentation, (3) data collection process, and (4) data analysis techniques.

Research Sample

Participants were recruited from a small-size rural Midwestern public community college. The township in which the college is located has approximately 5,000 residents, and the nearest urban area is approximately 50 miles from the campus. Total enrollment was reportedly 3,591 students for the 2007-08 academic year, with 45.5% attending full-time. The population is classified as 60.5% female and 39.5% male, 92.1% Caucasian, 1.2% Hispanic, 1.4% African American, and remaining students' race was unreported (fact sheet, published by college, 2008). While the total enrollment numbers were expected to be slightly higher for the 2010-2011 school year, other general demographic data was anticipated to be similar to that shown above. To gain a better understanding

about first-year students' mental health concerns, individuals enrolled in the Foundation Seminar class (FS 1001) were asked to participate in the study. Because all first-year students are expected to enroll in this orientation to college course, approximately 1200 students were anticipated for the Fall 2010 semester. After this study obtained IRB approval, students enrolled in the FS 1001 were offered the volunteer opportunity to participate in the study. In addition to enrollment in FS 1001, another criterion for student selection into this study was that they must be at least age 18 years or older. Only surveys completed by students who are age 18 or older were included in the analysis of data. The goal of a 70% response rate was set for this study. Because students participate in several surveys as a part of this course, a high rate of return was anticipated.

Instrumentation

Survey research using questionnaires is implemented when investigators want to describe the behaviors or characteristics of a sample within a population (Creswell, 2008). The Counseling Center Assessment for Psychological Symptoms-62 (CCAPS-62) was selected for this study because it was specifically designed to survey mental health concerns within a college student population. Permission for use of the CCAPS-62 in this study was obtained from the Center for the Study of Collegiate Mental Health (CSMHS) at Penn State University. The CCAPS-62 has been used by universities across the United States for the purposes of both research and for practical use in campus counseling centers (CSMHS, 2009). The 62-item instrument includes eight subscales that measure depression, eating concerns, substance use, generalized anxiety, hostility, social anxiety, family distress, and academic distress. Each item is rated on a 5-point Likert scale from 0 "Not at all like me" to 4 "Extremely like me". Participants were

asked to indicate how well each statement described them during the past two weeks (Sevig & Soet, 2006, p. 416). Items for each sub-scale were summed and then divided by the number of items in that subscale to determine the mean subscale scores. One of the advantages to the use of this instrument is that the researcher will be able to compare "…an individual's subscale scores to those of a large normative sample – effectively comparing an individual's level of distress, across eight subscales, to that of other students seeking services at college counseling centers (CCAPS , 2009). The normative sample for the CCAPS-62 was developed from the responses of over 22,060 college students seeking counseling services at 52 institutions across the United States (CSMHS, 2009).

Reliability and Validity

For the past five years, the Center for the Study of Collegiate Mental Health (CSCMH) has been using the CCAPS-62 to gather mental health information from college students nationwide. Statistical analysis was used on the pilot results to further refine the survey tool for future use. The following excerpt describes the statistic process implemented:

> After cleaning the data, a factor analysis was conducted via two randomized, independent exploratory factor analyses (initial and replication) of 11,106 and 10,954 cases each. A rational/empirical approach was used to eliminate some empirically weak or unstable items, a small number of items shifted to different subscales, and the spirituality subscale was removed pending future development of a more comprehensive resilience subscale. The eight remaining subscales

demonstrated internal consistencies ranging between .82 and .92 (CCAPS users manual, 2009, p. 3).

Coefficients of reliability are reported in Table 1 for each subscale of the CCAPS-62. The factor analysis findings suggest that each remaining CCAPS subscale is measuring a separate mental health construct with a high degree of internal consistency.

Table 1

Counseling Center for Assessment of Psychological Symptoms Subscales: Estimates of Reliability:

Scale	Alpha
Depression	.915
Generalized Anxiety	.848
Social Anxiety	.839
Substance Abuse	.843
Eating Concerns	.898
Academic Distress	.822
Family Distress	.828
Hostility	.857

Note. From Counseling Center Assessment of Psychological Symptoms-62Users Manual (p. 4), 2009, The Pennsylvania State University: Center for the Study of Collegiate Mental Health. Copyright 2009 by The Pennsylvania State University.

CCAPS Subscales

Each of the CCAPS subscales is accompanied by a definition that clarifies symptoms to illustrate the nature of each construct:

Depression: Feelings of low mood, loss of interest in previously enjoyed activities, feelings of worthlessness and hopelessness, suicidal ideation

Generalized Anxiety: Racing thoughts, feelings of being overwhelmed, tense, or a sense of dread across most situations

Social Anxiety: Self-conscious around others, difficulties making friends, shy or withdrawn in social situations

Substance Abuse: Consumption of alcohol or drugs in excess, engaging in activities that are regretted because of drinking, memory loss while drinking.

Eating Concerns: Binge eating or purging, poor body image, feelings of being out of control when eating, frequent dieting

Academic Distress: Difficulties with completing school work, feelings of inadequacy about academic competence, problems with maintaining motivation with coursework

Family Distress: History of emotional or physical abuse in the family, feelings of sadness, tension, or hostility toward family members

Hostility: Thoughts of hurting others, engaging in frequent arguments or fights, fear of losing control and acting violently toward others

These definitions are reviewed again in the analysis section of Chapter 4, when specific observations are made about how the categories were evidenced, and how they affected student persistence.

Student Demographic Characteristics

Questions concerning demographic characteristics were included at the end of the survey. Obtaining specific information about student characteristics (i.e. age, gender, marital status, number of credit hours taken during current semester) helped to gain an understanding of the possible interactive effects on the factors that may contribute to persistence as it relates to mental health. Students were provided with a series of questions and asked to choose responses to each one.

Student Mental Health Treatment

This section featured the nature of mental health treatment sought by college student survey participants. Students were asked to choose a response to a series of four questions concerning prior mental health treatment (i.e. never, prior to college, after starting college, both). Items that address clinical treatment included:

- I have attended counseling for mental health concerns
- I have taken a prescribed medication for mental health concerns
- I have been hospitalized for mental health concerns
- I have received treatment for drug or alcohol concerns

Data Collection

The Researcher made verbal announcements in all 48 sections of FS 1001 explaining the survey, purpose and value of the study, confidentiality, and voluntary nature of the research. Instructors provided follow-up reminders as the survey was administered online and remained open for 6 weeks. The survey was embedded in the campus course tool software (Moodle) that students accessed with a PIN and password. Only students enrolled in FS 1001 had access to take the survey. Students read through an informed consent sheet and were asked to agree to participate before continuing with the survey. Participants were asked to complete the 62-item Counseling Center Assessment for Psychological Symptoms (CCAPS-62), designed to objectively screen for specific symptoms of mental health among college students (CSCMH, 2009a), and to the questions about demographic information and current or past mental health treatment. A final reminder email was sent to all students at the end of week five. Data was collected and stored by a code assigned to each student that did not correspond to the student's

college identification number, but later allowed the researcher to compare survey results with persistence measures at the end of the term. A separate spreadsheet was stored in another location and available only to the researcher which included each participant's code number and corresponding student identification number. The Office of Institutional Research provided a list of all students who enrolled as of the first day of the Spring semester. Additionally, they provided data on participants' completion of the Fall 2010 term using a formula similar to financial aid policy of minimum standards of academic progress. Each participant's hours attempted vs. hours earned for the Fall 2010 semester were calculated. In order to consider having successfully completed the semester, students must have completed a total of 67% of all coursework attempted, including degree and remedial coursework. The researcher matched participant information to their completion status of the Fall term and Spring enrollment status, providing data that could be analyzed to address the research questions of the study.

Data Analysis

The goal of this quantitative study was to determine the relationships between persistence and the presence of various mental health issues among first-year community college students. In order to answer the research questions presented in this study, a variety of statistical tools were used to analyze the data collected. This analysis employed descriptive statistics such as frequencies, means, and standard deviations to explain the sample of participants. Logistic regression analysis was utilized in order to determine the relationship between fall-to spring persistence rates and mental health problems. Regression analysis is used in quantitative research when determining the relationship between the outcome variable and the predictor variables. For a model

where the outcome variable is dichotomous, such as persistence, logistic regression analysis is the most appropriate method for determination of the best fitting model (Meyers, Gamst, & Guarino, 2006). The CCAPS scores, student demographics, and mental health treatment information were used as predictor variables in the model. With logistic regression analysis, either continuous or dichotomous variables may be used as predictor variables making this particular type of regression analysis the most appropriate statistical technique to address the research questions.

Based upon the data, the researcher determined whether there was a correlation between mental disorders and semester-to-semester persistence and which, if any, categories of disorder have a more dramatic effect on retention. Sub-variables were also examined to see if they have any significant effect on both manifestations of mental health issues, and on persistence. This study may expand upon the understanding of the prevalence of various mental health difficulties within the context of freshmen community college population. An examination of the breadth and depth of current distress and persistence from fall-to-spring enrollment may help to develop an understanding of ways in which mental health problems are negatively impacting first-year community college students. If a relationship exists between mental health issues and persistence, it suggests that community colleges could improve persistence rates by providing additional support for students with specific mental health concerns.

Concern for Subjects

In the interest of protecting subjects from any potential harm that may come from a revelation that they are experiencing any of the disorders identified by the survey, the researcher provided contact and community resource information for students who

voluntarily sought counseling services throughout the academic semester. The researcher informed all participants about the exception to confidentiality in situations where there may be evidence of intent to harm self or others. The following course of action occurred if a participant indicated intent to harm self or others: Any participant that responded with a 3 or 4 on CCAPS questionnaire numbers 46, 52, or 60 were referred to the Behavioral Intervention Team (BIT) on campus. A licensed professional counselor serving as a member of the BIT contacted the participant to conduct a mental health status assessment and followed the BIT protocol to ensure proper mental health treatment was provided.

Summary

This chapter outlined the proposed research questions, research sample, instrumentation, data collection procedures, and data analysis plan. The selection of a sample of first-year community college students provided the opportunity to examine the relationships between their mental health and subsequent decisions to remain enrolled to the spring term. Predictor variables assessed included student demographic information, mental health treatment data, and scores on the CCAPS-62 survey. The outcome variable will be persistence from fall-to-spring semester as measured by enrollment reports of students who participated in the survey and fall semester completion status. Chapter 4 provides a description of findings from the survey and from comparing survey results to student persistence into the following semester. In Chapter 5, the researcher examines the meaning and implications of these findings, develops a set of recommendations based on the research, and suggests further areas of study related to these findings and analysis.

Chapter 4

Results

The purpose of this study was to determine the nature and prevalence of mental health problems in a freshmen community college population. The study also focused on the predictive relationship between mental health issues and persistence from fall-to-spring semesters. Persistence was evaluated in two ways: successful completion of the fall semester and enrollment in spring semester classes. Successful completion of the fall semester was defined as completion of a total of 67% of all coursework attempted, including degree and remedial coursework. A grade of "F" (Failure), W" (Withdrawal), "H" (Audit), or "I" (Incomplete) was considered unsatisfactory. Enrollment in spring semester was defined as enrollment status on the first day of the spring term.

This chapter begins with an overview of the research design utilized in the study. Included within this section is a review of the research questions, data collection and instrumentation methods, as well as a general outline of the data analysis that was employed. The chapter is also comprised of the demographics and descriptive statistics of the study's participants, followed by a presentation of the results of the data analysis techniques conducted. A brief summary of the results obtained concludes the chapter.

Overview of Research Design

The following four research questions were used to guide the study's methodology and data analysis:

Research Question 1: What is the relationship between having mental health problems and first-year persistence in the community college?

Research Question 2: Among freshmen community college students with mental health problems, what is the relationship between those who have received clinical treatment in the past or present and those who have never received clinical treatment and first-year persistence rates?

Research Question 3: Are any of the mental health sub-scales of depression, generalized anxiety, social anxiety, eating concerns, family distress, hostility, and substance abuse as measured by the CCAPS-62 particularly predictive of fall to spring persistence rates?

Research Question 4: Do the effects of mental health on persistence differ based on age, gender, enrollment status, or type of financial aid?

Data Collection and Instrumentation

Quantitative data were collected from a voluntary survey administered to students enrolled in the Fall 2010 freshman orientation courses at a small, rural Midwestern community college. This course is required of all first-time freshmen and produced a potential sample size of 994 students. The on-line survey was embedded in the campus course tool software (Moodle) that students access with a PIN and password. Only students enrolled in the freshman orientation course had access to the survey. Verbal and email announcements explained the survey procedures, purpose and value of the study, confidentiality, and voluntary nature of the research. An audio version of this announcement was available on-line for students as well. Instructors provided regular follow-up reminders to their classes as the survey remained open for six weeks. A final reminder email was sent to all students prior to the end of the survey. Students interested in participation were required to read through an informed consent sheet and asked to agree to participate before continuing with the survey.

The survey consisted of 62 items from the Counseling Center Assessment of Psychological Symptoms (CCAPS-62), four questions about previous mental health treatment, and several demographic items (See Appendices A and B). Information about participants' fall semester completion rates and enrollment status were provided in the Spring 2011 semester by the college's Office of Institutional Research. The CCAPS-62 items were used to identify potential mental health problems including depression, generalized anxiety, social anxiety, hostility, eating concerns, family distress, academic concerns, and substance abuse issues. The mental health questions were answered using a Likert scale which ranged from "extremely unlike me" to "extremely like me" on a 0 to 4 point scale. The remaining items were a combination of multiple choice and yes/no questions.

The CCAPS-62 is a screening tool designed to identify certain mental health indicators within a college student population. The instrument is currently used by college campus counseling centers across the United States for initial assessments, but also is designed to gather important research information concerning college student mental health. The data collected from the CCAPS-62 administration frequently is reported by individual item responses or by subscale mean scores. Each subscale mean score may theoretically range from 0 to 4 with lower numbers showing minimal distress and higher numbers reflecting elevated levels of psychological distress. While the instrument is not a diagnostic tool, it does screen for symptoms commonly associated with mental health problems.

The Statistical Package for the Social Sciences (SPSS, version 19) computer program was used to generate descriptive statistics, bivariate correlation data, and logistic

regression analysis on the variables under study. The following sections detail descriptive statistics of the sample demographics, presentation of the data analysis results, and a summary of the findings.

Data Analysis

The goal of this quantitative study was to determine the relationship between college persistence and the presence of various mental health issues among first-year community college students. In order to answer the research questions presented in this study, several statistical tools were used to analyze the data collected. This analysis employed descriptive statistics such as frequencies, means, standard deviations, as well as applicable crosstabs and correlations. These calculations allow for evaluation of participant sample characteristics in relationship to the variables of interest and to address any co-linearity among independent variables.

Logistic regression analysis was used to determine the predictive relationship between persistence to spring semester and the independent or predictor variables listed in the previous section. A second analysis to determine the predictive relationship between successful completion of the fall semester and mental health problems was also analyzed. Regression analysis is used in quantitative research when determining the relationship between the outcome variable and the predictor variables. General linear regression requires a continuous outcome (dependent) variable. One of the limitations of the general linear regression model is that it is not designed for dichotomous or categorical dependent variables. For a model where the outcome variable is dichotomous, such as persistence to spring semester (yes or no) or successful completion of the fall semester (yes or no), logistic regression analysis is the more appropriate method for determination of the best fitting model (Meyers, Gamst, & Guarino, 2006). With logistic regression analysis, either continuous or dichotomous independent (predictor) variables may be used in the model. The current study examined a

combination of continuous and dichotomous predictor variables and therefore utilized a logistic regression analysis. An additional benefit of logistic regression analysis is that it does not require normally distributed variables or homoscedasticity as opposed to general linear regression analysis (Menard, 2010). With a dichotomous dependent variable, the resulting relationship to the predictor variables is not a linear one, but rather an S-shaped curved line bounded by 0 and 1.

According to Menard (2010), logistic regression utilizes a mathematical transformation, the natural logarithm, to transform the data to fit the S-curve with the objective of prediction of group membership to the dependent variable (0 or 1). The basic logistic regression equation is:

$$P = E(y|x) = \frac{e^{B_0 + B_1 X_1 + \ldots + B_p X_p}}{1 + e^{B_0 + B_1 X_1 + \ldots + B_p X_p}}$$

The value of P represents the probability that the variable of interest (Y) will occur given the predictor variables (X_p) in the model and will always range somewhere between 0 and 1. To make best use of the value of P = E(y|x), logistic regression analysis uses the log-likelihood, or maximum likelihood function (Kleinbaum & Klein, 2002). In the most general terms, the log-likelihood measures the probability a certain value of (Y) can be predicted by the observed values of the independent variables in the regression model. The researcher used SPSS 19 to calculate regression analyses.

Based upon the data, the researcher determined whether there was a relationship between mental disorders and semester completion or persistence to next semester and analyzed which independent variables have a more dramatic effect on retention. This study also expands the understanding of the prevalence of various mental health

difficulties within the context of freshmen community college population. An examination of the breadth and depth of current distress and persistence from fall-to-spring enrollment will help to develop an understanding of ways in which mental health problems are negatively impacting first-year community college students. If a relationship exists between mental health issues and persistence, it suggests that community colleges could improve persistence rates by providing additional support for students with specific mental health concerns.

Analysis of Sample Demographics

The population for this study was students who enrolled in the required first-year orientation to college course at a small, rural two-year community college in the Midwest. The final sample consisted of a total of 509 out of 994 students (N = 509; response rate = 51%) who volunteered to complete the on-line survey. Students provided consent for participation and completed the password protected on-line survey. Because the survey was designed to require completion of all survey answers before submission, there were no missing data out of the 509 responses received. To better understand the characteristics of the sample, frequency distributions and percentages of the social demographics were calculated (Table 2).

Of the total survey respondents, 338 (66.4%) were female, 168 (33%) were male, and 3 (.6%) classified themselves as transgender. The students sampled were predominantly Caucasian (N = 474, 93.1%), while African American was the second highest race or ethnicity at (N = 10, 2%). The majority of students sampled were 18-23 years of age (N = 388, 76.2%), enrolled full-time (N = 447, 87.8%), employed (N = 333, 65.4%), single (N = 412, 80.9%), and receiving financial aid (N = 444, 87.2%). The age

and ethnicity characteristics of the sample are similar to the overall student body demographics of the college selected for the study, but the enrollment status and gender characteristics differ. Almost 88% of the sample reported full-time enrollment status, but the institutional enrollment figures show only 46% of the total student body is enrolled full-time. These figures are not surprising because full-time students are more likely to enroll in the freshman orientation course. Students must take this course if they are seeking a degree or certificate and before they can have access to on-line registration, so full-time students typically want to complete the course as soon as possible. On the other hand many part-time students are still unsure about their educational goals, even whether they plan to pursue a certificate or degree at the college. As a result, many part-time students defer enrollment in the freshman orientation course until they have more definitive educational objectives.

Additionally it was noted that over 66% of survey participants were female, but the institution total enrollment for females is approximately 61%. The gender differences for the freshman orientation course total enrollment figures were 60% female and 40% male. The higher number of female participants in the survey may be attributed to more willingness for females to communicate their feelings and admit to emotional distress, or may be an indication that women are more likely to comply with an optional assignment request than are men. The data on parents' educational background revealed that over 57% of the participants' fathers had no college experience, with 17.1% of that group having even less than a high school diploma. On the other hand, it is interesting to note that over 55% of the participants' mothers have at least some college experience. The

frequency differences between parents education level could be explained in part by the higher rates of females now attending college.

Table 2

Demographic Variables Frequency Counts and Percentages for the Total Sample

Variable	*f*	*P*
Age		
18-23	388	76.2
24-29	45	8.8
30-35	25	4.9
36-41	22	4.3
42-47	12	2.4
48-52	5	1.0
Over 52	12	2.4
Ethnicity		
Caucasian	474	93.1
African American	10	2.0
American Indian	9	1.8
Hispanic	9	1.8
Pacific Islander	2	.4
Race/Ethnicity Unknown	5	.9
Gender		
Female	338	66.4
Male	168	33.0
Transgender	3	.6
Credit Hours		
Full-Time (12≥)	447	87.8
Part-Time (<12)	62	12.2
Employment Status		
Yes	333	65.4
No	176	34.6

Table 2 (continued).

Item	*f*	*P*
Marital Status		
Single	412	80.9
Married	71	13.9
Divorced or Separated	26	5.1
Financial Aid		
Yes	444	87.2
No	65	12.8
Educational Background (Father)		
Less than HS diploma	87	17.1
HS diploma	203	39.9
Some college experience	109	21.4
Associates Degree	46	9.0
Bachelors Degree	50	9.8
Graduate Degree	14	2.8
Educational Background (Mother)		
Less than HS diploma	65	12.8
HS diploma	162	31.8
Some college experience	121	23.8
Associates degree	73	14.3
Bachelors degree	66	13.0
Graduate degree	22	4.3

Descriptive Statistical Analysis for Variables in the Study

The first general research question for the study was, "What is the relationship between having mental health problems and first-year persistence in the community college?" To better understand the prevalence of mental health issues of students in the sample, frequency counts and percentages for each of the CCAPS-62 questions are detailed in Tables 3 through 11 which follow. Students were asked different questions about a range of psychological issues including depression, generalized anxiety, eating

concerns, social anxiety, substance abuse, academic distress, hostility, and family problems. The responses to the questions in the CCAPS-62 survey are scored on a 5-pt scale, 0 "Not at all like me" to 4 "Extremely like me". The questions that were reverse scored are noted within each table. In addition to frequencies and percentages for individual questions, the researcher used the SPSS scoring syntax provided in the CCAPS-62 user's manual to reverse score the appropriate items, sum the items for each sub-scale, and calculate mean subscale scores for each participant profile. Table 12 shows each CCAPS-62 subscale mean and standard deviation for the total sample in the study. Information on completion rates and spring enrollment figures were obtained from the college's institutional research department and are summarized in Table 13.

Analysis of Depression Subscale Items

In a portion of the CAAPS-62, students responded to questions about symptoms generally associated with depression. While the literature suggests that depression is the most common mental health disorder diagnosed among all ages, many people will meet some but not all of the clinical symptoms associated with a major depressive disorder. According to the American Psychiatric Association (2000), individuals who experience a major depressive disorder may experience "…depressed mood, most of the day, nearly every day; diminished interest or pleasure in most or all activities; significant weight loss or gain; insomnia or hypersomnia; psychomotor agitation or retardation; fatigue or loss of energy; feelings of worthlessness or guilt; difficulty concentrating; recurrent thoughts of death;…" (p. 349). For a diagnosis of major depression, at least five of the symptoms listed above must be reported for at least two weeks in lieu of the individual's normal functioning level. Even if fewer than five depressive symptoms are present, an

individual's diagnosis may still classify as a subthreshold mood disorder and could certainly benefit from action. In fact, research supports that treatment of individuals with subthreshold mood disorders is key in the prevention of progression to clinical levels of the disorder or even the development of life-threatening complications such as suicide or less grave, but still serious, substance abuse disorders (Rihmer & Angst, 2005). Within the current study, results from the CCAPS-62 depression subscale were used to detect the presence of many of the symptoms related to depression.

Although the CCAPS-62 is not considered a diagnostic tool nor does it address all of the clinical symptoms of major depressive disorder, several of these indicators are included within the depression subscale. Table 3 details frequencies and percentages for each of the depression subscale items for the total sample. When participants responded to an item with a 3 or 4 "extremely like me", there was indication of the presence of that particular symptom. The four most commonly reported symptoms were "I don't enjoy being around people as much as before (19.1%)", "I cry frequently (16.1%)", "I feel like no one understands me (15.7%)", and "I feel disconnected from self (15.7%)". One of the most life-threatening indicators associated with clinical depression is suicidal behavior. Suicidal risk can manifest as thoughts about death, suicide or even as suicide attempts. The CCAPS-62 depression subscale item "I have thoughts about ending my life" was answered with a response of 3 or 4 "extremely like me" by 15 students (3%). Each of these participants was contacted and required to meet with a counselor on campus for further suicide risk assessment. Students were aware that their responses were not necessarily anonymous and that a positive answer to any items related to intent to harm self or others would result in a counseling referral. Individuals of all ages are

frequently unwilling to admit to suicidal behavior for fear of the stigma associated with psychological problems. Thus, it is likely that some students underreported their feelings related to suicidal thoughts.

The individual item results were totaled and averaged for each participant to reveal the depression subscale mean score of .85 for the total sample with a range of 0.00 to 3.85 (see Table 11). For the sample under investigation, this was the second least prevalent mental health issue reported. The current study's results are surprising in that depression has been cited within the literature as one of the two most common mental health problems among college students, along with generalized anxiety. Furthermore, according to the American Foundation for Suicide Prevention (2010), suicide is the second leading cause of death among college students. Since only 3% of the sample in this study admitted to feelings associated with wanting to end one's life, the findings suggest that it is possible that participants may have underreported feelings, thoughts, or actions associated with depression or more specifically, suicidal behavior. It is also important to recognize that most of the research focused on college student mental health is conducted with students who seek counseling services at campus mental health centers. The data collection methods of the current study focused on all first-year students who were enrolled in the freshman orientation course and not just students who visit a campus counseling center. This may, in part, explain the differences in reported mental health levels among participants.

Contextual variables, not directly measured within this study, may also have played a role in the lower levels of reported depression. Sometimes characterized within the literature as sociocultural influences, these variables have been found to mitigate the

effects of mental health concerns. They include, but are not limited to, economic climate, demographics, geographical location, peer relationships, and culture. One important contextual variable that may have a bearing on the results of this study is the correlation between mental health and social support. The association between social support networks and positive mental health outcomes is a well researched topic within the counseling field. Because the study was conducted at a small, rural community college that emphasizes personal connections among students, faculty, and staff, the lower levels of reported depression may have been impacted by this sociocultural influence. Many of the students who participated in the study presumably still reside at home or within the community where they grew up. Thus, their social support networks may not have been disrupted to the degree that residential college students who move away from their families and communities of origin experience.

Table 3
Frequencies and Percentages of Total Sample on Depression Subscale Items

Item	*f*	*P*
Feel disconnected from self		
0-Not at all like me	285	56.0
1	117	23.0
2	27	5.3
3	59	11.6
4-Extremely like me	21	4.1
Don't enjoy being around people as much as before		
0-Not at all like me	259	50.9
1	122	24.0
2	32	6.3
3	57	11.2
4-Extremely like me	40	7.9

Table 3 (continued).

Item	*f*	*P*
Feel isolated and alone		
0-Not at all like me	295	58.0
1	105	20.6
2	36	7.1
3	56	11.0
4-Extremely like me	14	2.8
Lose touch with reality		
0-Not at all like me	344	67.6
1	60	11.8
2	54	10.6
3	37	7.3
4-Extremely like me	14	2.8
Feel worthless		
0-Not at all like me	349	68.6
1	37	7.2
2	85	16.7
3	31	6.1
4-Extremely like me	7	1.4
Feel Helpless		
0-Not at all like me	339	66.6
1	25	4.9
2	102	20.0
3	41	8.1
4-Extremely like me	4	.8
Enthusiastic About Life*		
0-Not at all like me	36	7.1
1	12	2.4
2	76	14.9
3	204	40.1
4-Extremely like me	181	35.6
Having unwanted thoughts that can’t control		
0-Not at all like me	313	61.5
1	30	5.9
2	97	19.1
3	44	8.6

4-Extremely like me	25	4.9

Table 3 (continued).

Item	*f*	*P*
Feel sad all the time		
0-Not at all like me	312	61.3
1	52	10.2
2	101	19.8
3	35	6.9
4-Extremely like me	9	1.8
Have thoughts of ending life		
0-Not at all like me	414	81.3
1	43	8.4
2	37	7.3
3	14	2.8
4-Extremely like me	1	.2
Like myself*		
0-Not at all like me	36	7.1
1	76	14.9
2	12	2.4
3	204	40.1
4-Extremely like me	181	35.6
Cry Frequently		
0-Not at all like me	308	60.5
1	60	11.8
2	59	11.6
3	55	10.8
4-Extremely like me	27	5.3
Feels like no one understands me		
0-Not at all like me	292	57.4
1	26	5.1
2	111	21.8
3	48	9.4
4-Extremely like me	32	6.3

*Indicates reverse scored item

Analysis of Generalized Anxiety Subscale Items

Everyone experiences feelings of anxiety from time to time. However, anxiety poses a clinical concern once the intensity of the symptoms negatively interferes with the ability to carry out daily living activities. When students report persistent, exaggerated, and unwarranted worries, these symptoms may hinder day-to-day functioning in all areas of life, including academic persistence. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), the diagnostic features for generalized anxiety disorder include: "…excessive worry about a number of events; difficulty controlling worry; the anxiety and worry are accompanied by three of six symptoms (e.g., restlessness, easily tired, difficulty with concentration, easily irritated, muscle tension, or problems with sleep)…" (American Psychiatric Association, 2000, p. 472). The features of generalized anxiety disorder must be present for at least six months, and significantly impair academic, social or occupational functioning.

While the CCAPS-62 does not specifically diagnose generalized anxiety disorder, the generalized anxiety subscale screens for several of the warning signs associated with generalized anxiety. Students are asked to respond to a series of statements and note whether they are "extremely unlike me" or "extremely like me" from 0 to 4. Responses of a 3 or 4 are considered to indicate the presence of the particular symptom associated with the item. To analyze the presence of these symptoms of the sample under study, frequencies and percentages were tabulated for each of the items in the CCAPS-62 generalized anxiety subscale (see Table 4). The three most common symptoms reported under this scale were racing thoughts (35.8%), tense feelings (24.3%), and sleep difficulties (35.1%). According to the DSM-IV-TR, these are three of at least five

symptoms needed to have the diagnosis of generalized anxiety disorder (2000). Additionally, there were 98 students (19.3%) who described themselves as being fearful of many things, according to the survey results. While these students may not necessarily meet the criteria for generalized anxiety disorder, the intensity of their symptoms may be negatively impacting academic functioning. Furthermore, generalized anxiety disorder often has a gradual onset, and if left unaddressed, these individuals often go on to develop other types of mental health problems such as mood disorders or even substance abuse problems (Halgin & Whitbourne, 2010). The presence of the symptoms included within the CCAPS-62 generalized anxiety subscale would certainly warrant a complete mental health evaluation if the instrument were being used within a clinical setting.

One other noteworthy item within this subscale dealt with experiencing flashbacks or nightmares within the past two weeks. There were 81 respondents (15.9%) who rated the item as a 3 or 4 "extremely like me", indicating the possibility of a history of some type of experienced trauma either prior to or after coming to college. Flashbacks, nightmares, and intense fear are some of the common symptoms associated with trauma and can lead to other mental health diagnoses such as post traumatic stress disorder (PTSD), substance abuse problems, or even suicidal behaviors. While the CCAPS-62 does not specifically measure for PTSD, some of the symptoms overlap with generalized anxiety and are included within this subscale. The current study did not address specific questions about traumatic events, but the results from this particular item suggest that it is an area of concern that should be further investigated among this population.

The item results for the generalized anxiety subscale were totaled and averaged for each participant to reveal a mean subscale score of 1.17 for the total sample with a range of 0.00 to 3.67 (see Table 11). This was the third most prevalent mental health concern reported by participants, only surpassed by the academic distress and social anxiety subscales. The results from this study suggest that starting college may contribute to more symptoms related to anxiety than to depression for first-year community college students. It would be interesting to investigate the longitudinal patterns of these two mental health concerns within the community college context to determine whether the presence of generalized anxiety symptoms would, over time, relate to the development of an increase in major depressive symptoms as the literature for the general population suggests.

Table 4

Frequencies and Percentages of Total Sample on Generalized Anxiety Subscale Items

Item	*f*	*P*
Fearful of many things		
0-Not at all like me	192	37.7
1	162	31.8
2	57	11.2
3	85	16.7
4-Extremely like me	13	2.6
Heart races for no good reason		
0-Not at all like me	277	54.4
1	87	17.1
2	71	13.9
3	58	11.4
4-Extremely like me	16	3.1

Table 4 (continued).

Item	*f*	*P*
Anxious about having a panic attack in public		
0-Not at all like me	372	73.1
1	36	7.1
2	58	11.4
3	35	6.9
4-Extremely like me	8	1.6
Sleep difficulties		
0-Not at all like me	193	37.9
1	7	1.4
2	130	25.5
3	104	20.4
4-Extremely like me	75	14.7
Racing thoughts		
0-Not at all like me	172	33.8
1	7	1.4
2	148	29.1
3	121	23.8
4-Extremely like me	61	12.0
Spells of terror or panic		
0-Not at all like me	359	70.5
1	73	14.3
2	40	7.9
3	29	5.7
4-Extremely like me	8	1.6
Tense Feelings		
0-Not at all like me	197	38.7
1	18	2.4
2	176	34.6
3	81	15.9
4-Extremely like me	43	8.4
Easily frightened or startled		
0-Not at all like me	236	46.4
1	150	29.5
2	28	5.5
3	66	13.0
4-Extremely like me	29	5.7

Table 4 (continued).

Item	*f*	*P*
Experiencing nightmares or flashbacks		
0-Not at all like me	304	59.7
1	88	17.3
2	36	7.1
3	54	10.6
4-Extremely like me	27	5.3

Analysis of Social Anxiety Subscale Items

As the literature review notes, anxiety disorders are currently the most prevalent category of mental health diagnoses reported among the general population (Kessler et al. 2005; Ries Merikangas, 2005). According to the American Psychiatric Association (2000), this category includes Generalized Anxiety Disorder, Obsessive Compulsive Disorder, Agoraphobia, Panic Disorder, Specific Phobia, Social Phobia (Social Anxiety Disorder), Post Traumatic Stress Disorder, Acute Stress Disorder, and Anxiety Disorder, Not Otherwise Specified. Because there are certain anxiety symptoms that frequently impact college students, the CCAPS-62 instrument divides anxiety complaints into two separate subscales. The previous section dealt with the generalized anxiety subscale, and the present section focuses on symptoms related to the CCAPS-62 social anxiety subscale. While the social anxiety subscale does not directly measure the presence of any of the listed anxiety disorders, the subscale items do relate to the symptoms described within the Social Phobia Disorder diagnosis, also referred to as Social Anxiety Disorder. Most individuals admit to some levels of worry over being embarrassed in social situations. The common fears associated with embarrassment in social interactions rise to the level of an anxiety disorder only if the individual experiences considerable

impairment in academic, interpersonal, or occupational functioning. To meet the criteria for someone with Social Anxiety Disorder, the American Psychiatric Association (2000) requires the following to be present:

> …a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing; exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or situationally predisposed panic attack; the feared social or performance situations are avoided or else are endured with intense anxiety or distress. (p. 416)

The CCAPS-62 social anxiety subscale does not directly measure the presence of Social Phobia Disorder as outlined above. However, whether used as a clinical or research tool, the subscale items do provide an objective screening process to determine if further inquiry into the prevalence of social anxiety symptoms may be warranted. Table 5 was composed using frequency calculations and percentages for items in the CCAPS-62 social anxiety subscale. Students were asked questions concerning their comfort with social situations and their ability to interact with others within the last two weeks. One particular question within this subscale asks if the student is anxious when speaking in front of audiences. Results from this particular question showed that 328 students (64.4%) responded with a 3 or 4 “extremely like me”. Over 34.2% of the students surveyed reported that they were shy around others, and 36.1% had feelings of discomfort being around people they do not know. These results support the reports that

evolving interpersonal relationships are among the most challenging aspects of college life for first-year college students, even among community college students.

After individual item frequencies and percentages were tabulated, the researcher summed each participant's sub-scales responses, and calculated the mean subscale scores for each participant profile using the SPSS syntax provided by the CCAPS-62 scoring manual. Table 11 shows that the social anxiety subscale mean was 1.65 with a range from .00 to 3.86. The results indicated that social anxiety was the most prevalent mental health concern among the respondents in this study. While those answering the survey did not necessarily meet the criteria for a social anxiety disorder, the findings do suggest that, similar to students at four-year residential colleges and universities, the changing nature of social relationships among first-year community college students contributes to a great deal of anxiety.

Even though many community college students continue to reside with their families, the type of relationship with parents often evolves as students develop their own identities, sometimes separate from family expectations or values. Additionally, non-traditional students who are returning to college after years of being away from the classroom feel intimidated by the college experience, especially public presenting or speaking. Age differences among the students at the community college level may contribute to the heightened levels of social anxiety experienced during the first year. For the traditional student, the impact of evolving friendships may contribute to feelings of anxiety as many high school friends move away to college and students meet new classmates of varying ages and backgrounds. Because student affairs professionals can develop helpful intervention plans, exploration of the complete nature of these changing

relationships and the correlation to social anxiety would be an area for further investigation.

Table 5

Frequencies and Percentages of Total Sample on Social Anxiety Subscale Items

Item	*f*	*P*
Shy around others		
0-Not at all like me	131	25.7
1	48	9.4
2	156	30.6
3	125	24.6
4-Extremely like me	49	9.6
Anxious when speaking in front of audiences		
0-Not at all like me	53	10.4
1	10	2.0
2	118	23.2
3	160	31.4
4-Extremely like me	168	33.0
Make friends easily*		
0-Not at all like me	34	6.7
1	14	2.8
2	100	19.6
3	209	41.1
4-Extremely like me	152	29.9
Concerned that other people do not like me		
0-Not at all like me	191	37.5
1	81	15.9
2	151	29.7
3	72	14.1
4-Extremely like me	14	2.8
Uncomfortable around unfamiliar people		
0-Not at all like me	114	22.4
1	190	37.3
2	21	4.2
3	135	26.5
4-Extremely like me	49	9.6

Table 5 (continued).

Item	*f*	*P*
Self conscious around others		
0-Not at all like me	147	28.9
1	171	33.6
2	53	10.4
3	93	18.3
4-Extremely like me	45	8.8
Comfortable around others*		
0-Not at all like me	59	11.6
1	53	10.4
2	104	20.4
3	182	35.8
4-Extremely like me	111	21.8

*indicates a reverse scored item

Analysis of Academic Distress Subscale Items

Academic problems could be considered as both a cause of stress and as an indicator that mental health problems exist. From a practical standpoint, colleges and universities should be interested in student mental health for the reason that when students encounter mental health difficulties they may be less likely to experience academic success. When students first begin college, it is common for them to experience adjustment difficulties related to academic expectations. Students may encounter problems with motivation, persistence, or even self-doubt as they learn to manage the rigor of college academic life. On the other hand, academic distress may also be a warning sign of larger issues. College students who struggle with traumatic events such as death, illness, or the end of a romantic relationship may find their academic performance negatively impacted. Additionally, community college students who are of a non-traditional age may have a multitude of life stressors such as jobs, children,

spouses, or financial difficulties that compete for their emotional energy and detract from a successful academic life.

Because academic troubles can negatively affect a student's mental health, the CCAPS-62 instrument has a separate subscale to measure college student academic distress. Five questions constituted the Academic Distress subscale and, as with the other subscales, students were asked to respond to the items by answering whether statements were "extremely unlike me" to "extremely like me" on a 0 to 4 scale. Table 6 was compiled by using frequencies and percentages of these five items from the CCAPS-62. These items explored the perceptions related to individual academic success of the students surveyed. Although 75% of respondents felt confident they could succeed academically, one quarter had mild to serious doubts about whether they would be academically successful. While traditional students anticipate the personal freedom involved with the collegiate schedule, they often struggle with the adjustment that this new level of autonomy creates. High school students are accustomed to a much more regimented schedule with highly structured learning expectations. Many students feel unsure of their abilities to meet the college academic demands whether due to their problems with time management, procrastination, or ineffective study habits. Additionally, non-traditional students often doubt their academic abilities after having been out of a school environment for several years. The academic distress subscale also showed that 29.9% of students stated that they were experiencing difficulties with staying motivated for classes, 21.1% reported problems with concentration and 13.9% answered 3 or 4, "extremely like me," when asked if they had difficulties keeping up with homework. From these results, it appears the self-discipline involved in learning how to

budget study time, complete extensive amounts of reading, and finish demanding assignments may contribute to stress for many first-year community college students. Also of interest was an item on the academic distress subscale that examined student level of satisfaction with their coursework. Of the 509 respondents, over 30% answered with a 0 or 1 “extremely unlike me” when asked whether they enjoyed their classes. Without the opportunity to follow up with further inquiry as to why students responded negatively to this item, it is difficult to formulate recommendations for academic or student service interventions. However, the frequency with which these students reported a lack of enjoyment with classes is worth further investigation.

The individual item results were totaled and averaged for each participant to reveal the academic distress subscale mean score of 1.36 for the total sample with a range of 0.00 to 4.00 (see Table 11). Academic distress was the second most prevalent mental health concern presented by students who completed the survey. Because this particular subscale can represent both a cause of stress and a warning sign that other mental health concerns exist, it is important to weigh the efficacy of using the CCAPS-62 results for individual clinical analysis or as a research instrument. Further examination of the correlations between the results of this subscale and other subscales will help to reveal additional data for interpretation.

Table 6

Frequencies and Percentages of Total Sample on Academic Distress Subscale Items

Item	*f*	*P*
Enjoy my classes*		
0-Not at all like me	42	8.3
1	111	21.8
2	18	3.5
3	218	42.8
4-Extremely like me	120	23.6
Confident that I can succeed academically*		
0-Not at all like me	24	4.7
1	74	14.5
2	29	5.7
3	159	31.2
4-Extremely like me	223	43.8
Unable to concentrate as well as usual		
0-Not at all like me	206	40.5
1	54	10.6
2	140	27.5
3	82	16.1
4-Extremely like me	27	5.3
Hard to stay motivated for classes		
0-Not at all like me	161	31.6
1	25	4.9
2	171	33.6
3	110	21.6
4-Extremely like me	42	8.3
Unable to keep up with homework		
0-Not at all like me	206	40.5
1	66	13.0
2	166	32.6
3	56	11.0
4-Extremely like me	15	2.9

*indicates a reverse scored item

Analysis of Eating Concerns Subscale Items

Although eating and body image concerns are thought to be widespread among college students, the unique characteristics and expression of these issues are still largely understudied. Discontent over body appearance and weight is common, especially among women, with some symptomotology related to eating disorders or associated with other mental health difficulties. It frequently is difficult to gather accurate data on eating disorders because of the societal stigma associated with these disorders. Additionally, individuals with serious eating concerns, in a similar way to substance abuse, often minimize problems associated with their symptoms. As a result, mental health concerns related to eating and body image are commonly underreported.

The CCAPS-62 eating concerns subscale does not specifically diagnose eating disorders such as Anorexia Nervosa or Bulimia Nervosa, but it does have several items that screen for possible problems with these mental health problems. For instance, a couple of items ask if individuals "purge to control weight" or whether "the less I eat, the better I feel about myself." These symptoms directly relate to diagnostic criteria necessary for eating disorders, and if answered in the extreme, would lead clinicians to assess for further indicators. In order to examine the presence of any eating issues among the students surveyed, Table 7 was compiled using frequencies and percentages from the items in the CCAPS-62 eating concerns subscale. When asked if the statement "satisfied with my body shape" described them, 327 respondents (64.3 %) answered extremely unlike me. Of the 509 total respondents, 207 (40.1%) were dissatisfied with their weight, 83 (16.3%) think about food more than they would like to, and 101 (19.9%) feel like they eat too much. Because of western societal pressures on physical appearance, these results

were disturbing, but not surprising. Viewed in isolation, these items do not necessarily constitute an eating disorder. However, how individuals choose to react to the feelings associated with these items may negatively impact their physical and mental health. There were also items that focus on more atypical symptoms that asked the following: "I feel out of control when eating" (N = 40; 7.9%) or "I purge to control my weight" (N = 17; 3.4%). Additionally, there were 78 respondents (15.3%) who answered a 3 or 4 when asked if they feel better about themselves when they eat less. This mindset about restrictive eating is one factor commonly associated with eating disorders. Although some of the indicators within the eating concerns subscale are fairly common among college students, or even the general population, there are more uncommon symptoms which point toward the possibility of serious mental health problems such as eating disorders. Even the more common symptoms can become problematic if healthy lifestyle choices and adaptive coping strategies are not employed by students to address eating concerns.

Item results for the eating concerns subscale were totaled and averaged for each participant to reveal a mean subscale score of 1.09 for the total sample with a range of 0.00 to 3.44 (see Table 11). These data showed that eating and body image concerns were the fourth most prevalent mental health issue, only slightly less prevalent than generalized anxiety. From these results, it is apparent that at least some of the students surveyed have engaged in more atypical eating behaviors, such as purging or restrictive eating. Student affairs professionals need to possess the skills needed to objectively evaluate differences between the typical eating and body concerns among college students and more serious eating disorders. Because of the level of denial and

minimization associated with eating disorders, it is also necessary to consider provision of education and resources for college students about warning signs associated with this type of mental health difficulty.

Table 7

Frequencies and Percentages of Total Sample on Eating Concerns Subscale Items

Item	*f*	*P*
Feel out of control when I eat		
0-Not at all like me	339	66.6
1	35	6.9
2	95	18.7
3	26	5.1
4-Extremely like me	14	2.8
Think about food more than I would like to		
0-Not at all like me	310	60.9
1	23	4.5
2	93	18.3
3	52	10.2
4-Extremely like me	31	6.1
Satisfied with my body shape*		
0-Not at all like me	174	34.2
1	153	30.1
2	68	13.3
3	53	10.4
4-Extremely like me	61	12.0
Dissatisfied with my weight		
0-Not at all like me	159	31.3
1	24	4.7
2	119	23.4
3	107	21.0
4-Extremely like me	100	19.6
Eat too much		
0-Not at all like me	269	52.8
1	13	2.6
2	126	24.8
3	61	12.0
4-Extremely like me	40	7.9

Table 7 (continued).

Item	*f*	*P*
When I start eating I can't stop		
0-Not at all like me	320	62.9
1	69	13.6
2	80	15.7
3	30	5.9
4-Extremely like me	10	2.0
Diet frequently		
0-Not at all like me	321	63.1
1	33	6.5
2	97	19.1
3	37	7.3
4-Extremely like me	21	4.1
Purge to control weight		
0-Not at all like me	399	78.4
1	58	11.4
2	35	6.9
3	11	2.2
4-Extremely like me	6	1.2
The less I eat, the better I feel about myself		
0-Not at all like me	310	60.9
1	95	18.7
2	26	5.1
3	49	9.6
4-Extremely like me	29	5.7

*indicates a reverse scored item

Analysis of Family Distress Subscale Items

During times of transition, social support, especially familial support, is important to successful adjustment. Family distress may generate or exacerbate existing mental health problems for first-year college students. In order to evaluate for a history of emotional or physical abuse in the family, feelings of sadness, tension, or hostility toward

family members, the CCAPS-62 family distress subscale was employed. Results indicated that the vast majority of students surveyed felt they came from happy homes and were loved by their families.

Those who did not, however, constituted a large enough number to raise concern. The data collected for student respondents' levels of emotional distress about family members is recorded in Table 8. While 82.2% responded that they feel that their family loves them, approximately 14.6% reported history of familial abuse. The trauma related to abuse within the family structure frequently leads to feelings of fear, helplessness, and extreme vulnerability. This may impact interpersonal relationships, academic performance, or occupational functioning. In severe cases, it is associated with mental health problems such as post traumatic stress disorder, substance abuse problems, or eating disorders. Although this item did not specifically ask if the participant had been the direct victim of physical, emotional, or sexual abuse, any sort of abuse within the context of the family environment is disruptive to all members' emotional well-being. Other notable items included the 14.1% who felt sad or angry when thinking about their family and 16.7% who responded with a 3 or 4, "extremely like me" when asked whether their family gets on their nerves. Thirty percent answered a 3 or 4 "extremely like me" when asked whether they wish their family got along better. Familial tension may put even greater strain on a first-year students' coping capability, particularly for community college students still residing at home.

After individual item frequencies and percentages were tabulated, the researcher summed each participant's family distress sub-scales responses, and calculated the mean subscale scores for each participant profile using the SPSS syntax provided by the

CCAPS-62 scoring manual. Table 11 shows that the overall family distress subscale was the fifth most prevalent mental health concern with a mean score of 1.07 and a range from .00 to 3.67. Because much of the literature suggests that social support, especially from family members, helps mitigate all types of mental health problems, these numbers are encouraging. However, for those students who specifically indicated problems with abuse or conflict within their family environment, the opposite is true. Conflicts with family have been shown to contribute to a wide variety of mental health problems including depression, anxiety, substance abuse, and even eating disorders (CSCMH, 2009b). Within the next step of data analysis, correlations between level of family distress and other mental health concerns expressed among these participants will be examined.

Table 8
Frequencies and Percentages of Total Sample on Family Distress Subscale Items

Item	*f*	*P*
Sad or angry when thinking of family		
0-Not at all like me	304	59.7
1	34	6.7
2	99	19.4
3	57	11.2
4-Extremely like me	15	2.9
Feel that family loves me*		
0-Not at all like me	19	3.7
1	38	7.5
2	34	6.7
3	68	13.4
4-Extremely like me	350	68.8

Table 8 (continued).

Item	*f*	*P*
Family gets on my nerves		
0-Not at all like me	192	37.7
1	81	15.9
2	151	29.7
3	71	13.9
4-Extremely like me	14	2.8
My family is basically a happy one*		
0-Not at all like me	44	8.6
1	86	16.9
2	19	2.8
3	147	28.8
4-Extremely like me	213	41.8
History of abuse in family		
0-Not at all like me	320	62.9
1	61	12.0
2	54	10.6
3	39	7.7
4-Extremely like me	35	6.9
Wish my family got along better		
0-Not at all like me	181	35.6
1	74	14.5
2	101	19.8
3	86	16.9
4-Extremely like me	67	13.2

*indicates a reverse scored item

Analysis of Hostility Subscale Items

While the majority of individuals with mental health concerns do not engage in violent behavior, the presence of aggressive feelings is a risk factor that could suggest mental health problems. As colleges and universities struggle with the topic of campus violence, the data collected on feelings of hostility among students with mental health

problems becomes even more controversial. It is important to note that simply because students present hostile thoughts or feelings, there is no direct indication that they would necessarily act upon them. Anger is a natural emotion, especially during times of stress, and being able to recognize and communicate feelings of hostility can be considered a productive means of coping. At the same time, with the major concern of recent violence on college campuses, evidence of these warning signs may help college personnel identify strategies to intervene before hostile thoughts turn into actual violent behavior. The CCAPS-62 hostility subscale screens participants for thoughts of hurting others, engaging in frequent arguments or fights, or fear of losing control and acting violently toward others. This particular CCAPS-62 subscale was not designed as a means of profiling potentially violent offenders, but can help to address the prevalence rates of some of the symptoms associated with feelings of aggression.

Table 9 summarizes the items within the CCAPS-62 hostility subscale. When asked to respond to the following statements: "I sometimes feel like breaking or smashing things" and "I get angry easily", 95 students (20.4%), responded with a 3 or 4 "extremely like me". Ninety-two students admitted they have difficulties controlling their temper, and 76 students (14.9%) reported that they often feel irritable. When students perceive themselves as ill-equipped to tackle the new demands of college life, feelings of anger and frustration may emerge. Two items within this subscale were flagged as having the potential to identify someone with violent or even homicidal feelings. Since the feelings or thoughts associated with these responses could be construed as warning signs, students who responded with a 3 or 4 "extremely like me" to the questions "I am afraid I may lose control and act violently" (N = 19, 3.7%) or "I have

thoughts of hurting others" (N = 22, 4.3%) were referred to the counselor on the behavioral intervention team for further risk assessment. Students who communicate intense fears associated with harming others or losing control will benefit from mental health intervention. How students learn to manage stressors during their first-year of college will set the stage for how they cope with the multitude of life experiences they face throughout the adulthood years.

The individual item results were totaled and averaged for each participant to reveal the hostility subscale mean score of .93 for the total sample with a range of 0.00 to 3.57 (see Table 11). It was the third least prevalent mental health concern voiced by the first-year students who were surveyed. The results support the belief that the overwhelming majority of college students do not have extreme feelings of hostility or pose a threat to others. However, there were enough students who responded positively to several of the items within this subscale to substantiate the need for further examination of resources and intervention strategies related to anger management among first-year students. The relationship between this particular subscale and other mental health concerns measured by the CCAPS-62 will be examined in the next step of the data analysis.

Table 9

Frequencies and Percentages of Total Sample on Hostility Subscale Items

Item	*f*	*P*
Sometimes feel like breaking or smashing things		
0-Not at all like me	270	53.0
1	125	24.6
2	10	2.0
3	73	14.3
4-Extremely like me	22	6.1
Get angry easily		
0-Not at all like me	256	50.3
1	152	29.9
2	6	1.2
3	73	14.3
4-Extremely like me	22	4.3
Difficulty controlling temper		
0-Not at all like me	238	46.8
1	172	33.8
2	7	1.4
3	71	13.9
4-Extremely like me	21	4.1
Feel irritable		
0-Not at all like me	277	54.4
1	12	2.4
2	144	28.3
3	60	11.8
4-Extremely like me	16	3.1
Afraid I may lose control and act violently		
0-Not at all like me	407	80.0
1	44	8.6
2	39	7.7
3	16	3.1
4-Extremely like me	3	.6

Table 9 (continued).

Item	*f*	*P*
Frequently get into arguments		
0-Not at all like me	284	55.8
1	61	12.2
2	98	19.1
3	50	9.8
4-Extremely like me	16	3.1
Thoughts of hurting others		
0-Not at all like me	403	79.2
1	43	8.4
2	41	8.1
3	15	2.9
4-Extremely like me	7	1.4

*indicated reverse scored item

Analysis of Substance Abuse Subscale Items

Excessive use of alcohol or drugs may be a sign of emotional distress and often coexists with other mental health concerns. The CCAPS-62 subscale screens for symptoms such as the consumption of alcohol or drugs in excess, participation in activities that are regretted because of drinking, or memory loss while drinking. Table 10 lists six specific behaviors student respondents may exhibit that are associated with substance abuse problems. The five-point Likert scale ranges from 0 = Not at all like me to 4 = Extremely like me. Three of the symptoms that were most frequently answered with a 3 or 4 by student respondents were “drinks alcohol frequently” (N = 43; 8.5%), “enjoys getting drunk” (N = 90; 7.7%), and “done something regretted because of drinking” (N = 102; 20.1%). While one out of five reported doing something they regretted because of their drinking behavior, only 4.9% felt as though they drink too

much. The vast majority of the respondents gave low endorsements to the items within this subscale. When the results for the total subscale was tabulated and averaged for each participant, the mean score of the CCAPS-62 substance abuse subscale was .59 with a range of 0 to 3.50. As opposed to the results of the literature review, this study indicated that substance abuse issues were the least prevalent mental health concern among the first-year students surveyed.

There are some viable reasons for the identification of substance abuse as the least problematic mental health concern in the study. As opposed to four-year college students who live independently from their parents, traditional-age community college students within this study may still reside with their parents who exercise a certain degree of influence over substance usage. Many of the study's participants were also of non-traditional age within the state in which the research was conducted, and others had a multitude of demands including spouses, children, and jobs. There may simply be too many other responsibilities for these students to engage in celebratory or socializing parties where a great deal of drinking and substance abuse occurs. It is also possible that the symptoms within this subscale were underreported by participants. Keeping in mind that the results are based upon self-report, it is extremely common for individuals to minimize substance usage and to perceive their behaviors as normal. Even if students engage in frequent alcohol or drug use, they may believe that their behaviors are not excessive or abnormal. With over 20% of the students surveyed admitting to doing something they regret because of drinking, but less than 5% saying that they drink too much, there is some support for this speculation. Many still believe that excessive drinking among college freshman is something of a 'rite of passage' and not of concern.

Many college students are also unaware of what actually constitutes binge drinking. Along those same lines, this particular college setting is within a rural, Midwest community that accepts alcohol use as an integral part of entertainment. Many of these students were raised in environments where it is not uncommon to see moderate to excessive drinking behaviors at church functions, local community events, or even family gatherings. Because it is important to consider that specific personal and environmental influences affect drinking patterns, further open-ended questions that address individual experiences and insights would be useful.

Table 10

Frequencies and Percentages of Total Sample on Substance Use Subscale Items

Item	*f*	*P*
Use drugs more than I should		
0-Not at all like me	440	86.4
1	36	7.1
2	21	4.1
3	7	1.4
4-Extremely like me	5	1.0
Drink alcohol frequently		
0-Not at all like me	376	73.9
1	2	.4
2	88	17.3
3	33	6.5
4-Extremely like me	10	2.0

Table 10 (continued).

Item	*f*	*P*
Drink more than I should		
0-Not at all like me	421	82.7
1	15	2.9
2	48	9.4
3	18	3.5
4-Extremely like me	7	1.4
Enjoy getting drunk		
0-Not at all like me	332	65.2
1	6	1.2
2	81	15.9
3	59	11.6
4-Extremely like me	31	6.1
When I drink, I cannot remember what happened		
0-Not at all like me	409	80.4
1	58	11.4
2	18	3.5
3	16	3.1
4-Extremely like me	8	1.6
Have done something I regret because of drinking		
0-Not at all like me	331	65.0
1	10	2.0
2	66	13.0
3	63	12.4
4-Extremely like me	39	7.7

Analysis of Participants' Mean Scores for CCAPS-62 subscales

The researcher used SPSS scoring syntax provided in the CCAPS-62 user's manual to reverse score the appropriate items, sum each participants' sub-scales responses, and calculate mean subscale scores for each participant profile. Table 11 shows each CCAPS-62 subscale mean and standard deviation for the total sample in the

study. Examination of data in Table 11 and an inspection of histograms of the CCAPS-62 subscale variables show each subscale is positively skewed with most scores existing at the low end of the scale. These results indicate that a majority of the first-year community college students surveyed reported little to no mental health distress. However, there were enough students who reported moderate to high levels of emotional distress to warrant further evaluation of the results.

Social Anxiety was the most prominent mental health concern with a mean subscale score of 1.64. Students who reported mental health concerns most frequently cited high levels of anxiety related to public speaking and engaging in social interactions with unfamiliar people. Making new friends seems to be a difficult part of these first-year students' experience. Academic performance fears as well as concern over new and changing social relationships provoked a great deal of emotional distress in many of the students surveyed. Academic distress was the second most prevalent mental health concern with a mean subscale score of 1.36 followed by generalized anxiety with a mean of 1.17. As it becomes more essential to earn a college degree in order to retain employment, many individuals feel pressure to succeed academically. The burden associated with academic success often leads to feelings of anxiety and worry. In the next step of data analysis, the researcher examines the relationship between academic distress and anxiety.

While responses related to anxiety and worry were more frequently endorsed, the overwhelming majority of students denied problems with substance abuse, depression, or hostility. The total sample results on the CCAPS-62 mean subscale scores showed that the Substance Abuse category had the lowest average score with a mean of .59. Based

upon a review of the literature related to college student substance use patterns, these results are surprisingly low. Rather than resorting to substance use, it is possible that the first-year students surveyed have less freedom or opportunity to engage in alcohol or drug use. Because many students are either under-age or of a non-traditional age, they may have developed other coping strategies to deal with anxiety or do not see substance use as a necessary part of their collegiate experience. It is also possible that students are underreporting behaviors related to alcohol, drugs, depression, or violence because of the stigma associated with these symptoms. Often seen as embarrassing or a sign of weakness, many individuals tend to minimize the warning signs associated with these particular mental health concerns. Additionally, first-year students who had symptoms consistent with these concerns may not have participated in the survey. There is evidence that suggests individuals with mental illness are less likely to participate in surveys related to mental health, causing the researcher to consider the possibility that these prevalence rates may be conservative (Kessler et al, 2005).

Table 11

Descriptive Statistics for CCAPS-62 subscales, listed from high to low mean score.

CCAPS-62 Subscale	N	Minimum	Maximum	Mean	SD
Social Anxiety	509	.00	3.86	1.65	.80
Academic Distress	509	.00	4.00	1.36	.61
Generalized Anxiety	509	.00	3.67	1.17	.53
Eating Concerns	509	.00	3.44	1.09	.47
Family Distress	509	.00	3.67	1.07	.58
Hostility	509	.00	3.57	.93	.54
Depression	509	.00	3.38	.85	.50
Substance Abuse	509	.00	3.50	.59	.49

Analysis of Mental Health Treatment Variables

Table 12 summarizes the total sample results for each of the mental health treatment variables surveyed (see appendix A for questions). Student respondents were asked whether they had any history of participation in counseling, use of prescribed psychotropic medication, mental health hospitalization, or substance abuse treatment. The choices were "Never", "Prior to College", "After Starting College", or "Both". After running preliminary analyses, including histograms and cross tabulations on the response choices for each of the mental health treatment variables, it was determined that there were not enough cases in some of the response choices to provide useable data. The results were collapsed from four to two categories and coded 0 for never and 1 for yes if the respondent indicated treatment was received prior to college, after starting college, or both. A sizable majority of the sample studied did not have a history of any type of mental health treatment (ranges from 79.6% to 95%). While history of counseling was the most common type of treatment reported at 20.5%, over 19% of participants indicated that they have used prescribed psychotropic medications in the past or currently. Very few individuals reported past or present history of psychiatric hospitalization (5.3%) or substance abuse treatment (4.7%).

Table 12

Mental Health Treatment Frequency Counts and Percentages of Total Sample

Variable-Type of Treatment	*f*	*P*
Counseling		
No	405	79.6
Yes	104	20.5

Table 12 (continued).

Item	*f*	*P*
Psychotropic Medication		
No	412	80.9
Yes	97	19.1
Mental Health Hospitalization		
No	482	94.7
Yes	27	5.3
Substance Abuse Treatment		
No	485	95.3
Yes	24	4.7

Analysis of Completion Rates and Re-enrollment Dependent Variables

The office of institutional research at the college under study provided data for the participants' fall semester coursework completion rates and spring enrollment status. The completion rate variable was reported as a percentage score based on the student respondents' fall semester courses attempted vs. courses completed with grades of "F" (Failure), W" (Withdrawal), "H" (Audit), or "I" (Incomplete) considered unsatisfactory. The data on spring enrollment status was "Yes" if the participant was enrolled in any number of classes on the first day of the semester and "No" if they were not enrolled in any coursework on that day. A series of pre-analysis tests was conducted on both variables. The data were screened for any missing values or outliers. One missing value was found in the enrollment status for spring term, but the researcher was able to locate the data from the office of institutional research at the college under study. Initially, the researcher considered conducting an Ordinary Least Squares (OLS) multiple regression analysis since the completion rate variable was coded as a percentage measurement. A

preliminary analysis of frequency counts, descriptive statistics and inspection of a histogram of the variable showed that the data were negatively skewed with 327 students (64.2%) having completed 100% of their coursework. Because logistic regression analysis does not require the assumption of normality or equal variances, the decision was made to transform the completion rates to a dichotomous variable (1 ≥ 67%; 0 < 67%). After transformation of the fall completion variable, means and standard deviations were compiled in Table 13 for the dependent variables used in the data analysis for the total sample. There is a slightly higher rate of spring re-enrollment (86%) than successful completion of fall term (82%) and analysis of the data for both variables shows a highly negatively skewed distribution of scores. Testing of the results was conducted using logistic regression on both variables.

Table 13

Descriptive Statistics for Completion Rates and Re-enrollment

Dependent Variables	N	Minimum	Maximum	Mean	SD
Re-enrollment SP	509	0	1	.86	.34
Completers FA	509	0	1	.82	.38

Correlations

Correlation coefficients were reviewed to find any significant relationships among the measured mental health concerns, types of mental health treatment, and social demographic variables. It was also important to determine if high levels of collinearity were observed between the predictor variables. Because the symptoms of mental health problems frequently overlap in different categories of mental disorders, some collinearity

is to be expected among the CCAPS-62 subscale variables. Lower levels of collinearity are not typically viewed as problematic for logistic regression analysis, but as correlations between one or more independent/predictor variables reach .80 or higher, they may create problems. Menard (2010) states that when collinearity is unusually high "…it is impossible to obtain a unique estimate of the regression coefficients; any of an infinite number of possible combinations of linear or logistic regression coefficients will work equally well" (p. 127).

Bivariate Spearman correlations were tabulated for the CCAPS-62 mean subscales variables for $\alpha = .05$ significance level and are displayed in Table 14. Results indicated that the subscales of depression and generalized anxiety had the highest degree of correlation at .66, $p < .01$. The relationship between the family distress subscale and substance use subscale was .07, showing no significant relationship between these two variables. Another interesting finding was the .05 relationship between substance use and social anxiety ($p > .05$). Academic distress was positively related to depression (.46, $p < .01$) and generalized anxiety (.40, $p < .01$). Correlations between all the variables primarily ranged between .23 and .55 which are all significant of a positive relationship at the .01 level, but none are over the .80 range indicative of high colinearity.

Table 15 summarizes the correlations between the individual CCAPS-62 mean subscales variables and the social demographic variables of the survey participants such as gender, ethnicity, and parental education. None of the relationships between the variables in Table 15 demonstrate moderate or high levels of colinearity. The majority of social demographics variables and CCAPS-62 subscales show almost no bivariate relationships with correlations primarily ranging from .01 to .10. Three of the CCAPS-62

subscale variables showed small negative correlations to gender. Eating concerns (-.13), Generalized Anxiety (-.12), and Social Anxiety (-.13) had statistically significant relationships to gender at the .01 level. While the relationships are very weak, the results suggest female participants tended to score higher on these three subscales. Of additional note, age and social anxiety showed a weak negative relationship at -.15, $p < .01$. Age and hostility showed a statistically significant negative relationship (-.114, $p < .05$). In the remaining cases, the variables showed either no relationship or extremely weak relationships.

Table 16 reveals the correlations between the mental health treatment variables and the CCAPS-62 subscales. The generalized anxiety subscale has a weak, positive relationship to counseling treatment at the .05 significance level (.09). None of the other mental health variables show a relationship to participants receiving counseling treatment. A review of the correlations between the CCAPS-62 mental health variables and the use of psychotropic medication showed no significant correlations. Likewise, none of the correlations between psychiatric hospitalizations and the CCAPS-62 mental health variables was statistically significant. The only CCAPS-62 subscale that had a statistically significant positive relationship to substance abuse treatment was the substance abuse subscale (.12, $p < .01$). A review for collinearity among the variables in Table 16 shows none present.

A review of the correlation coefficients for mental health treatment and the social demographic variables showed some statistically significant relationships. Table 17 summarizes the data and confirms that gender plays a role in treatment-seeking behavior. When interpreting these data, it should be noted that students who were female were

coded 0 and males were coded 1. A negative relationship between gender and counseling services was statistically significant at the .01 level (-.12) suggesting that females are more likely to have sought counseling treatment in the past or present. The use of psychotropic medications and gender also showed a negative relationship of -.110 that was significant at the .05 level. On the other hand, a history of substance abuse treatment was positively related to gender (.10) at the .05 significance level. All of the mental health treatment variables were positively related to age at the .01 level indicating that students who were older reported higher levels of mental health treatment-seeking behavior than younger students. This may be an indication that independent students who are dealing with family, work and time away from school issues are more likely to seek help for emotional distress than do students who are just out of high school and may be living at home. It may also simply be an indication that, since this measure looked at treatment past and present, older students had more life history, and therefore a greater likelihood of seeking treatment.

The parents' educational background and financial aid status were not statistically related to any of the mental health treatment variables. Employment status was positively related to counseling services (.14), the use of psychotropic medications (.15) and psychiatric hospitalizations (.14) at the .01 significance level. Because coding was 0 for not employed and 1 for employed, these relationships indicated that students who were employed displayed higher levels of these three types of mental health treatment, also supporting the hypothesis that more complex life responsibilities may result in higher levels of stress among students.

Table 14

Spearman Correlation Coefficients for CCAPS-62 subscales

	Depression	Eating	Substance	G. Anxiety	Hostility	S. Anxiety	Family	Academic
Depression	1.00	.46**	.23**	.66**	.54**	.34**	.37**	.46**
Sig. (2-tailed)	.	.00	.00	.00	.00	.00	.00	.00
Eating	.46**	1.00	.24**	.53**	.35**	.27**	.24**	.26**
Sig. (2-tailed)	.00	.	.00	.00	.00	.00	.00	.00
Substance	.23**	.24**	1.00	.23**	.35**	.05	.07	.13**
Sig. (2-tailed)	.00	.00	.	.00	.00	.26	.09	.00
General Anxiety	.66**	.53**	.23**	1.00	.51**	.41**	.35**	.40**
Sig. (2-tailed)	.00	.00	.00	.	.00	.00	.00	.00
Hostility	.54**	.35**	.35**	.51**	1.00	.26**	.35**	.35**
Sig. (2-tailed)	.00	.00	.00	.00	.	.00	.00	.00
Social Anxiety	.34**	.27**	.05	.41**	.26**	1.00	.39**	.23**
Sig. (2-tailed)	.00	.00	.26	.00	.00	.	.00	.00
Family	.37**	.24**	.07	.35**	.35**	.39**	1.00	.33**
Sig. (2-tailed)	.00	.00	.09	.00	.00	.00	.	.00
Academic	.46**	.26**	.13**	.40**	.35**	.23**	.33**	1.00
Sig. (2-tailed)	.00	.00	.00	.00	.00	.00	.00	.

*Correlation is significant at the 0.05 level ** Correlation is significant at the 0.01 level

Table 15

Spearman Correlation Coefficients for CCAPS-62 subscales and Social Demographics

	Gender	Age	Financial Aid	Credit Hrs	Father Education	Mother Education	Employment
Depression	.02	-.08	.02	-.02	.03	.11*	.06
Sig. (2-tailed)	.60	.06	.50	.60	.47	.01	.15
Eating	-.13**	-.02	.08*	.02	.04	.08	-.01
Sig. (2-tailed)	.00	.57	.04	.59	.30	.05	.79
Substance	.04	-.01	.09*	-.02	-.02	.02	.00
Sig. (2-tailed)	.36	.76	.04	.57	.62	.60	.94
G. Anxiety	-.12**	-.06	.02	.018	-.01	.04	.06
Sig. (2-tailed)	.01	.14	.53	.68	.90	.33	.15
Hostility	.06	-.11*	.01	-.07	-.02	.10*	.00
Sig. (2-tailed)	.12	.01	.69	.09	.61	.01	.92
Soc. Anxiety	-.12**	-.15**	.01	.02	.05	.07	-.01
Sig. (2-tailed)	.00	.00	.68	.63	.26	.09	.75
Family	-.08	-.01	.01	.01	.02	.07	-.02
Sig. (2-tailed)	.06	.77	.72	.91	.52	.08	.55
Academic	.02	-.01	-.01	-.04	.01	.11*	.01
Sig. (2-tailed)	.65	.66	.72	.31	.86	.01	.68

*Correlation is significant at the 0.05 level ** Correlation is significant at the 0.01 level

Table 16

Spearman Correlations for CCAPS-62 subscales and Mental Health Treatment Variables

CCAPS-62 Subscales	Counseling	Medication	Psychiatric Hospitalization	Substance Abuse Treatment
Depression	.05	.02	.05	-.01
Sig. (2-tailed)	.21	.54	.26	.67
Eating	-.01	-.02	-.02	-.07
Sig. (2-tailed)	.68	.53	.60	.08
Substance	.08	.03	.05	.12**
Sig. (2-tailed)	.05	.46	.22	.00
G. Anxiety	.09*	.08	.03	.02
Sig. (2-tailed)	.03	.05	.37	.58
Hostility	.04	-.01	.01	-.03
Sig. (2-tailed)	.30	.60	.65	.48
Soc. Anxiety	-.01	.02	.07	-.04
Sig. (2-tailed)	.60	.60	.11	.27
Family	.05	.01	.03	.01
Sig. (2-tailed)	.25	.64	.48	.61
Academic	.04	.01	.01	-.04
Sig. (2-tailed)	.30	.67	.71	.31

*Correlation is significant at the 0.05 level ** Correlation is significant at the 0.01 level

Table 17

Spearman Correlation Coefficients for Mental Health Treatment and Social Demographics

	Counseling	Medication	Psychiatric Hospitalization	Substance Abuse Treatment
Gender	-.12**	-.11*	-.02	.10*
Sig. (2-tailed)	.00	.01	.64	.02
Age	.20**	.29**	.20**	.19**
Sig. (2-tailed)	.00	.00	.00	.00
Financial Aid	-.01	-.02	.01	-.03
Sig. (2-tailed)	.67	.64	.74	.50
Credit Hours	.06	.09*	.01	-.05
Sig. (2-tailed)	.14	.03	.66	.22
Father Education	-.03	-.05	-.06	.05
Sig. (2-tailed)	.47	.22	.12	.25
Mother Education	.04	-.01	.01	-.05
Sig. (2-tailed)	.36	.76	.82	.24
Employment	.14**	.15**	.14**	.07
Sig. (2-tailed)	.00	.00	.00	.10

*Correlation is significant at the 0.05 level ** Correlation is significant at the 0.01 level

In summary, while academic distress was related to all of the mental health concerns, depression and generalized anxiety showed the highest associations to academic worries. The presence of depression and generalized anxiety symptoms were also linked to each other, according to the survey results. It is not uncommon for these two types of mental health issues to coexist. Family distress showed statistically significant but low correlations to most of the mental health measures and there was no statistically significant correlation to substance abuse evidenced. A review of the data related to age suggested that younger students were more likely to report feelings of hostility and social anxiety issues. They more frequently admitted to feelings of unease in socializing with unfamiliar people and have a lot of anxiety when speaking in public. The only gender differences among the mental health variables were that females were more likely to report anxiety and eating-related concerns. Whether or not female students are more comfortable reporting these symptoms or are actually experiencing these problems more frequently than males is unclear, but the findings are generally supported by the literature in the counseling field.

There were no other relationships between gender and mental health variables, but differences among mental health treatment and gender were present. Females were more likely to seek counseling and use psychotropic medication than males. However, males were more likely to report a history of substance abuse treatment. Additionally, students who were employed had more likelihood to seek counseling or use psychotropic medications than those individuals who were not employed. Since the costs of mental health treatment in any form can be fairly substantial, either having medical insurance

from an employer or simply the funds from a job to self-pay may account for these differences in treatment-seeking behavior.

The last step in the correlation analysis was to check the bivariate relationships among the predictor variables for any evidence of high collinearity. If present, the results will not convey the individual contributions of the regression coefficients used in the logistic regression phase of analysis. To evaluate whether there were high levels of colinearity among any of the independent variables, the researcher examined Tables 14-17 for any bivariate relationships that were .80 or higher. Since none were present among the results, logistic regression will continue as the next phase of the analysis.

Mental Health Issues and Persistence

Variables

For the regression analysis that examined relationships between mental health issues and persistence in college, the dependent variable (Y) was a measure of persistence and was quantified in two ways: successful completion of the fall semester (Y_1) and enrollment in spring semester classes (Y_2). More specifically, successful completion of the fall semester was defined as completion of a total of 67% of all coursework attempted, including degree and remedial coursework. A grade of "F" (Failure), W" (Withdrawal), "H" (Audit), or "I" (Incomplete) was considered unsatisfactory.

The values for Y_1 were coded as follows:

1 successful-if the percentage of attempted/completed hours is 67% or higher.

0 unsuccessful-if the percentage of attempted/completed hours is less than 67%.

The dependent variable for Y_2 was defined as registration for the spring semester and determined by enrollment status on the first day of the spring term:

1 if the participant was enrolled in spring semester courses

0 if the participant was not enrolled in spring semester courses

The following are the assigned values for the independent variables of the CCAPS-62 subscale scores, past mental health treatment, and demographic variables:

X_1 is the CCAPS-62 Depression mean subscale score from 0 to 4.00.

X_2 is the CCAPS-62 Generalized Anxiety mean subscale score from 0 to 4.00.

X_3 is the CCAPS-62 Social Anxiety mean subscale score from 0 to 4.00.

X_4 is the CCAPS-62 Academic Distress mean subscale score from 0 to 4.00.

X_5 is the CCAPS-62 Eating Concerns mean subscale score from 0 to 4.00.

X_6 is the CCAPS-62 Family Distress mean subscale score from 0 to 4.00.

X_7 is the CCAPS-62 Hostility mean subscale score from 0 to 4.00.

X_8 is the CCAPS-62 Substance/Alcohol Use mean subscale score from 0 to 4.00

X_9 is the history of mental health counseling (1= yes and 0 = no)

X_{10} is the history of psychotropic medication usage (1= yes and 0 = no)

X_{11} is the history of mental health hospitalization (1 = yes and 0 = no)

X_{12} is the history of substance abuse treatment (1 = yes and 0 = no)

X_{13} is gender of the participant (female = 0; male = 1; transgender = 2)

X_{14} is age in years

X_{15} is number of credit hours enrolled (1 = full time (12 ≥); 2 = part-time (<12))

X_{16} is financial aid (1 = yes; 2 = no)

X_{17} is mother's educational background (0 = less than HS diploma; 1 = HS diploma; 2 = some college experience; 3 = associates; 4 = bachelors; 5 = graduate)

X_{18} is father's educational background (0 = less than HS diploma; 1 = HS diploma; 2 = some college experience; 3 = associates; 4 = bachelors; 5 = graduate)

Utilizing two separate regressions, one for Y_1 and Y_2, the covariates were entered along with several background variables including age, gender, number of credit hours, financial aid status, mother's educational background, and father's educational background. By controlling for these social demographic variables, the researcher was able to better determine the unique impact the variables under study had on persistence.

Fall Completion Regression Model

The logistic regression analysis used to predict fall semester completion for 509 first-year freshman community college students using the mental health subscales of the CCAPS-62 survey, history of mental health treatment as predictors utilized the regression equation, $Y_1=\beta_1X_1+\beta_2X_2+ \beta_3 X_3+\beta_4 X_4+\beta_5 X_5+ \beta_6 X_6+\beta_7 X_7+\beta_8 X_8+ \beta_9 X_9+\beta_{10} X_{10}+\beta_{11} X_{11}+ \beta_{12} X_{12}+\beta_{13} X_{13}+\beta_{14} X_{14}+\beta_{15} X_{15}+ \beta_{16} X_{16}+\beta_{17} X_{17}+\beta_{18} X_{18}+ \beta_{19} X_{19}$. A test of the full model with all of the predictors against a constant only-model was statistically significant (chi square = 58.153, $p < .000$ with df = 27), though Nagelkerke's R^2 of .177 indicated a very weak relationship between prediction and the grouping. The overall model prediction success was 83.1% compared to the constant only model prediction of 81.9%, further suggesting that while the overall model has statistical significance, there is limited practical significance. The -2 Log likelihood (-2LL) provides an estimate of the goodness of the fit of the model with smaller numbers indicative of a better fit. Result on the -2LL was 422.876 suggesting that the overall model was a poor fit to the data, meaning that this particular set of independent variables as a whole do not carry any

practical significance when trying to predict fall completion rates among first-year community college students.

Table 18 summarizes the variables in the equation along with their corresponding beta coefficients, standard errors, Wald criteria, levels of significance, and estimated odds ratio (Exp(B)). According to the Wald criterion, the variables that reached .05 significance levels within the model were social anxiety, academic distress, age, and enrollment status (part time/full time). Exp(B) value of social anxiety indicated that when students' social anxiety subscale increased by one unit the odds ratio is 1.99 times as large and therefore students are almost twice as likely to complete the term. The academic distress Exp (B) value of .47 suggests that for every scaled score increase on the scale, students are less than half as likely to successfully complete the fall term. Exp(B) value of enrollment status is 2.5 and indicates that students who are enrolled full-time are over 2.5 times more likely to successfully complete the term. Age was also a significant variable at .004 with Exp(B) value of 1.06 suggesting that for every year increase in a respondent's age, there was a 1.06 times increase in likelihood of successful semester completion. While the depression variable did not meet significance levels (.054), the Exp(B) score of .57 does show some indication that for every unit increase on depression, students are about 57% less likely to successfully complete the semester when holding all other variables constant.

Table 18

Variables in the Equation, Fall Semester Completion Model

Variable	B	S.E.	Wald	Sig.	Exp(B)
Depression	-.56	.30	3.43	.05	.57
Eating Concerns	.09	.18	.21	.64	1.09
Substance Use	.26	.16	2.37	.12	.77
General Anxiety	.04	.23	.03	.86	1.04
Hostility	.20	.19	1.21	.27	1.23
Social Anxiety	.69	.26	6.70	.01	1.99
Family	.05	.28	.03	.85	1.05
Academic Distress	-.74	.24	9.05	.00	.47
Counseling Tx	.25	.40	.38	.53	1.28
Psychiatric Hosp.	1.05	.58	3.17	.07	2.85
Medication	-.24	.43	.30	.57	.78
Substance Tx	.11	.60	.03	.84	1.12
Age	.06	.02	8.50	.00	1.06
Financial Aid	-.18	.38	.22	.63	.83
Enrollment Status	.92	.38	5.88	.02	2.51
Gender (female)			5.14	.07	
Gender (male)	2.56	1.37	3.47	.06	12.97
Gender (Trans)	2.16	1.37	2.47	.11	8.75

Table 18 (continued).

Variable	B	S.E.	Wald	Sig.	Exp(B)
Father Ed (<HS)			3.37	.64	
Father Ed (HS)	.16	.84	.03	.84	1.18
Father Ed (>HS)	.35	.79	.19	.65	1.42
Father Ed (Associate)	.07	.81	.01	.92	1.07
Father Ed (Bachelor)	.96	.91	1.11	.29	2.62
Father Ed (Graduate)	.56	.86	.42	.51	1.75
Mother Ed (<HS)			4.12	.53	
Mother Ed (HS)	-.25	.74	.12	.72	.77
Mother Ed (>HS)	-.13	.66	.04	.84	.87
Mother Ed (Associate)	-.26	.67	.15	.69	.76
Mother Ed (Bachelor)	.27	.72	.13	.71	1.31
Mother Ed (Graduate)	-.71	.69	1.05	.30	.49

In summary, three of the regression coefficients for social anxiety, academic distress, age, and enrollment status showed statistical significance in the prediction of fall semester completion rates. However, the combination of regression coefficients in the full regression model, $Y_1=\beta_1X_1+\beta_2X_2+ \beta_3 X_3+\beta_4 X_4+\beta_5 X_5+ \beta_6 X_6+\beta_7 X_7+\beta_8 X_8+ \beta_9 X_9+\beta_{10} X_{10}+\beta_{11} X_{11}+ \beta_{12} X_{12}+\beta_{13} X_{13}+\beta_{14} X_{14}+\beta_{15} X_{15}+ \beta_{16} X_{16}+\beta_{17} X_{17}+\beta_{18} X_{18}+ \beta_{19} X_{19}$ was of no real value since the chi-square results indicated that the model did not provide practical significance in the prediction of fall semester completion rates of first semester community college students.

Spring Reenrollment Regression Model

A second logistic regression analysis was conducted to predict next semester enrollment for the 509 first-year freshman community college students included in the study. Using the same variables of the CCAPS-62 mental health subscales and history of mental health treatment as predictors, the regression equation, $Y_2 = \beta_1X_1+\beta_2X_2+ \beta_3 X_3+\beta_4 X_4+\beta_5 X_5+ \beta_6 X_6+\beta_7 X_7+\beta_8 X_8+ \beta_9 X_9+\beta_{10} X_{10}+\beta_{11} X_{11}+ \beta_{12} X_{12}+\beta_{13} X_{13}+\beta_{14} X_{14}+\beta_{15} X_{15}+ \beta_{16} X_{16}+\beta_{17} X_{17}+\beta_{18} X_{18}+ \beta_{19} X_{19}$, was run using SPSS 19.0. A test of the full model with all of the predictors against a constant only-model was not statistically significant (chi square = 32.10, $p < .23$ with df = 27) with a -2LL of 379.21. Nagelkerke's R^2 of .11 indicated no significant relationship between the prediction and the grouping. The overall model prediction success was 86.8% compared to the constant only model prediction of 86.1%. Because the model resulted in both a large chi-square and -2LL, it was not a good fit. Thus, the regression coefficients from the equation, $Y_2 = \beta_1X_1+\beta_2X_2+ \beta_3 X_3+\beta_4 X_4+\beta_5 X_5+ \beta_6 X_6+\beta_7 X_7+\beta_8 X_8+ \beta_9 X_9+\beta_{10} X_{10}+\beta_{11} X_{11}+ \beta_{12} X_{12}+\beta_{13} X_{13}+\beta_{14} X_{14}+\beta_{15} X_{15}+ \beta_{16} X_{16}+\beta_{17} X_{17}+\beta_{18} X_{18}+ \beta_{19} X_{19}$, were of no importance in predicting reenrollment in the Spring term.

Summary

The descriptive statistics provided evidence to the presence of mental health concerns among first-year community college freshman. Social anxiety and academic distress were the most commonly reported difficulties among participants. Counseling services and the use of psychotropic medication were the most frequently sought after types of mental health treatment. The correlations between the mental health subscales indicated that many of the variables had a positive relationship, with depression and

generalized anxiety showing the highest relationship to each other. Students who reported higher levels of academic distress also reported more depression and generalized anxiety symptoms. More women than men indicated that eating concerns, generalized anxiety, and social anxiety were problems for them. Younger students had more hostility and social anxiety than did older students. Logistic regression results for persistence as measured by fall completion status did show a statistically significant relationship among the variables, but the full model was not of practical significance. One interesting finding was that students who reported social anxiety problems were two and a half times more likely to successfully complete the fall term. The logistic results for persistence as measured by reenrollment status for the spring term indicated that the model was not statistically significant. In conclusion, there was evidence of mental health concerns among these first-year community college students, but there was no clear support for the hypothesis that the mental health concerns negatively impacted persistence for students or re-enrollment in the following term.

Chapter 5

Discussion and Recommendations

College student mental health problems are a national concern that affects thousands of individuals and numerous institutions yearly. A student with emotional distress may experience any range of consequences from academic troubles, lost financial aid opportunities, or even the unproductive time invested in pursuit of higher education. All too frequently, the end result of these consequences is student attrition. College student retention is most at risk during the first-year of attendance (NCES, 2003). Thus, researchers have been working for years to expand the understanding of the dynamics of higher education retention for first-year students.

The examination of the relationship between the presence of mental health problems, seeking treatment for psychological issues, and retention provides information for constructive academic and student services planning. However, no studies to date have focused on these issues among first-year community college students. Given the existing research, the purpose of this investigation was to determine the nature and prevalence of mental health problems in a freshmen population at a small, rural community college. The study also examined whether the presence of mental health issues and history of mental health treatment could be shown to affect persistence from fall-to-spring semesters in the same population. Chapter 5 summarizes the findings related to the investigation, gives meaning to these findings, and makes recommendations for further research. It begins with a review of the research questions and general hypothesis, followed by a discussion of the results presented in chapter 4 and what they reveal about the affects of mental health issues on student retention, assesses limitations

of the study, and concludes with a few general remarks about the investigation and recommendations for further study.

Review of Research Questions and Hypotheses

The study was guided by the following four research questions:

1. What is the relationship between having mental health problems and first-year persistence in the community college?
2. Among freshmen community college students with mental health problems, what is the relationship between those who have received clinical treatment in the past or present and those who have never received clinical treatment and first-year persistence rates?
3. Are any of the mental health sub-scales of depression, generalized anxiety, social anxiety, eating concerns, family distress, hostility, and substance abuse as measured by the CCAPS-62 particularly predictive of fall semester completion or fall to spring persistence rates?
4. Do the effects of mental health on persistence differ based on age, gender, enrollment status, or type of financial aid?

A general hypothesis emerged from this set of research questions: The presence of mental health issues, as measured by the CCAPS-62 subscales and history of mental health treatment, will relate to completion of the fall semester and re-enrollment in the next semester while adjusting for background characteristics of age, gender, credit hours enrolled, financial aid status, and parents' educational background. The results presented in Chapter 4 led to some conclusions that are relevant in the interpretation of these research questions and the general hypothesis and are elaborated on in this chapter.

Among the findings, descriptive statistics revealed the presence of a number of mental health concerns among the students sampled. The regression analyses found, however, that the relationship between the predictor variables and persistence, as measured by both successful completion of fall semester and also reenrollment in the following semester, were not as straightforward or as strong as hypothesized. This is, in and of itself, an important finding and will be discussed at greater length below. Although the mental health variables and history of treatment did not reveal a direct predictive relationship to persistence of practical significance, each finding cast new light on mental health issues in a rural community college population, and adds important data to the literature. A discussion of the major findings follows.

Summary of Major Findings

Summary of the Demographics and Persistence Findings

The sample in this study included 509 first-year student respondents who were enrolled in a freshman orientation course at a small, rural community college in the Midwest. With reference to the characteristics of students who chose to participate in the survey, 338 (66.4%) were female, 168 (33%) were male, and 3 (.6%) were transgender. They were primarily Caucasian (N = 474; 93.1%) with 30 respondents (6%) reporting themselves as minorities, and 5 students (.9%) as race/ethnicity unknown. The majority of students sampled were 18-23 years of age (N = 388, 76.2%), enrolled full-time (N = 447, 87.8%), employed (N = 333, 65.4%), single (N = 412, 80.9%), and receiving financial aid (N = 444, 87.2%). The age and ethnicity characteristics of the sample are similar to the overall student body demographics at this particular institution, but the enrollment status and gender characteristics differ. Almost 88% of the sample reported

full-time enrollment status, but the institutional enrollment figures show only 46% of the total student body is enrolled full-time. These results are not surprising as the target population for the survey was first-year freshman who enrolled in the college's "orientation" course and typically hold full-time status disproportionately to the total student body. The course in which the survey was administered is required of all freshmen by the time they complete their first semester if they want to participate in on-line registration the following semester. Because the registration period opens several days in advance for students who enroll on-line and many required classes fill within the first few hours of the start of the registration period, full-time students want the privilege of that option. Many part-time students come to the community college to take a few classes to improve job skills or for personal enrichment. Thus, they often elect to forego or postpone enrollment in the freshman orientation course. This may also contribute to the disproportionately high number of full-time students who participated in the current study.

Additionally it was noted that over 66% of survey participants were female, but the institution total enrollment for females is approximately 61%. The gender differences for the Fall 2010 freshman orientation course total enrollment figures were 60% female and 40% male. While these survey participant gender differences are not dramatic, the higher rate of female survey participation does mirror research that indicates females are much more likely to report emotional difficulties including mental health problems than men (Halgin & Whitbourne, 2008; Hockenbury & Hockenbury, 2008). Females are frequently found to be more willing to communicate their feelings and verbalize

symptoms of emotional distress. For this reason, women may have been more willing to complete the voluntary survey.

The data on parents' educational background revealed that over 57% of the participants' fathers had no college experience with 17.1% of that group having even less than a high school diploma. On the other hand, it is interesting to note that over 55% of the participants' mothers have at least some college experience. One contributing factor to these differences may be the nature of the communities surrounding the college under study. In the past, these rural, farm communities promoted a culture where men were more likely to work on the farm or in manufacturing jobs directly after high school while more women were able to take advantage of the college experience.

In order to address research question four that asks: "Do the effects of mental health on persistence differ based on age, gender, enrollment status, or type of financial aid?" these social demographic variables were included in the regression analyses conducted and added some useful retention information in addition to that sought by the research questions. The results of the regression model showed that only two of these social demographic variables had a statistically significant impact on persistence as measured by fall semester completion. The enrollment status, coded as part-time attendance (less than 12 credit hours) or full-time attendance (12 credit hours or more) was statistically significant in predicting that participants who were enrolled full-time were over 2.5 times more likely to successfully complete the fall term than students who were enrolled part-time when controlling for all other variables in the regression equation. Because the literature consistently reports part-time enrollment status as a risk factor in higher education retention, these results were not surprising and reinforced the

need to include the variable within the regression model (NCES, 2003). Age was also a statistically significant demographic variable in the fall completion regression model. However, the practical significance of the prediction was less than useful with results indicating that for every increase of one year in a respondent's age, there was only a 1.064 times greater likelihood of successful fall semester completion when holding all other variables constant. Because the overall regression model for reenrollment was not statistically significant, further analysis of individual predictor variables was not conducted. Because the overall social demographics of the sample studied are not necessarily reflective of all first-year community college students or even of first-year students within the particular institution studied, it should be mentioned that generalizations about the presence of students' mental health symptoms or history of psychological treatment are made with caution.

In 2009, a normative sample was obtained from counseling centers at 52 four-year post secondary institutions for the purposes of comparison of individual assessment results to a larger population of students requesting campus mental health assistance. This sample became the basis for norming the most recent versions of the Counseling Center Assessment of Psychological Symptoms (CCAPS-62). It should be emphasized that the results from the normative sample were derived from a clinical environment at these campuses and not from the general student body. Additionally, the general demographics of the normative sample should be taken into consideration. According to the CCAPS-62 user's manual (2009), the modal age of the normative sample was 19 years, gender ratio was 64.2% female, 35.4% male, 0.2% transgender, and race was 73% Caucasian. Only 18.1% identified themselves as first-year students while the remaining

participants ranged from second-year undergraduates to almost 15% holding graduate student academic status. Since the sample was drawn from four-year colleges, an assumption also can be made that a larger portion of those sampled were residential college students than would be found on the typical community college campus, where most students commute. Thus, any comparison made between the results of the current study and to those from the normative sample results will be made with this in mind.

Summary of Mental Health and Persistence Findings

The first and third research questions examined the relationship between mental health issues and persistence in freshman community college students. "Mental health issues" referred to responses provided on the Counseling Center Assessment of Psychological Symptoms (CCAPS-62) survey administered to participants who were enrolled in a mandatory freshman orientation course, but as a volunteer project. The survey was first created by the University of Michigan Counseling Center to screen for student mental health symptoms. While not designed for use as a diagnostic tool, the instrument is able to objectively identify important features of mental health in a college student population. The CCAPS-62 instrument measures mental health on several different subscales including depression, generalized anxiety, eating concerns, social anxiety, academic distress, hostility, substance abuse and family distress. Among the student respondents' surveys, social anxiety and academic distress were most frequently reported problems.

A review of the questions comprised within the social anxiety subscale revealed that almost one third of the students reported being extremely shy around others and having feelings of discomfort around people they do not know. Over 64% described

themselves as having a lot of anxiety when speaking in front of others. Females and younger students were more likely to report higher levels of social anxiety. The gender and age difference findings are supported in previous research conducted with both genders reporting first onset of most mental health disorders before age 25, with females most frequently reporting anxiety disorders and depressive symptoms (Kessler et al., 2005). Although social anxiety was not the most prevalent mental health concern reported by students who participated in the CCAPS-62 2009 normative sample study, future studies may see a change in this as a leading concern. The higher frequencies of reported social anxiety among the young adult population may relate to their preferred communication patterns. The current younger generation has developed within an age of technology whereby a large portion of communication occurs non-verbally via text, email, and social networking websites. Entering a school environment that requires direct, verbal communication with instructors, staff, and fellow students, may be one factor contributing to the feelings of interpersonal anxiety. While social anxiety was viewed as an issue among many of the students surveyed, it did not negatively relate to persistence. In fact, the results of the regression analysis on fall completion showed the social anxiety subscale Exp (B) value of 1.993 indicating that for every one unit increase in the subscale, students were almost two times more likely to successfully complete the term. These findings are in line with recent national data collected on freshman college students by the University of California at Los Angeles (UCLA) Higher Education Research Institute. The American Freshman National Norms for 2010 Report suggests that while students report anxiety levels at an all time high and general emotional health on the decline, students are also more driven to succeed than in the past. This increase in

ambition may be a mitigating factor in increased levels of anxiety and the accompanying increase in persistence rates evidenced in the current study. Whether or not prolonged feelings of social anxiety may eventually lead to problems with persistence or the development of other psychological disorders, such as depression or substance abuse, continues to be of concern however and a longitudinal study of mental health issues and persistence might address this unknown.

The levels of academic distress were also considered a concern for many student respondents. Although 75% of students surveyed felt confident they could succeed academically, almost 30% of them were experiencing difficulties with staying motivated for classes. One reason for problems with motivation could relate to the multiple demands placed upon community college students today. Nearly two thirds of the students responding in this study reported that they were employed in addition to their college coursework. Almost 14% were having extreme problems keeping up with homework and over 21% experienced problems with concentration. Over 30% of the student participants reported that that they did not enjoy their classes. From the data gathered in this study, it is difficult to determine the reasons behind these negative feelings about coursework and whether they are particular to community college students who have multiple responsibilities beyond college. It is important to note that these students were first semester freshmen, surveyed very early in their college careers, and still in early stages of adjustment to college life. Further investigation could identify any number of other reasons for the dissatisfaction including course content, teaching styles, rigor of assessments, or instructor attributes. While the survey results showed that all of the CCAPS-62 subscales positively correlated with academic distress, the depression and

generalized anxiety subscales showed the strongest relationship to academic distress. Students reported that as levels of depression and anxiety increased, they were more likely to experience academic distress. These results are in accordance with the national data collected from the National College Health Assessment (ACHA, 2006) that revealed distress over academic performance was related to increased levels of generalized anxiety and depression.

The results of the logistic regression analysis indicated that the academic distress scale was one of the statistically significant predictors of successful fall completion. For every unit increase students scored on the academic distress subscale, they were less than half as likely to successfully complete the fall semester. This was consistent with research conducted by Pritchard and Wilson (2003) which revealed that students who earned a lower GPA were more likely to report higher stress levels and intent to drop out of college than were their counterparts. The survey results support the need for academic and student affairs to identify first semester students who are experiencing academic distress as early as possible, the contributing reasons for the difficulties, and create effective intervention strategies to aid with their academic success and retention.

Results from the depression subscale showed that almost 20% of student respondents stated that they don't enjoy being around people as much as before and about 16% admitted to crying frequently. Over 15% feel disconnected from themselves, and 3% admitted to having thoughts about ending their lives. In spite of these individual item responses, the current study revealed that depression was the second least prevalent concern among the students survey. These findings do not support the literature, with inconsistency between the findings from this study and some of the previous research on

college student depression rates and suicide risk. The CCAPS-62 normative sample data shows depression to be the third most prevalent mental health concern, with academic distress the most prevalent and social anxiety as the second most prevalent problem (CSCMH, 2009a). The overwhelming body of research on depression and suicide risk point to higher reported levels of both mental health concerns than this study suggests. Furr et al., (2001) found that over 53% of students admitted to symptoms of depression their first-year in college and 9% admitted to suicidal thoughts. This particular study was conducted anonymously which may have contributed to more participant willingness to share actual symptoms. Within the current study, students were well aware that their responses would not remain anonymous if suicidal or homicidal thoughts were evidenced. Thus, it is quite possible that symptoms of depression and even hostility were underreported in this investigation. As part of the consent to participate in the study and as a requirement of the university's Institutional Review Board approval, students were informed that responses to certain questions about intent to harm themselves or others may lead to a counseling referral. These students were referred to the campus behavior intervention team for further risk assessment. Because suicide is the second leading cause of death among college students, these responses were of great concern (CDC, 2005).

There is also some reason to believe that lower rates of depression might be a reflection of the institutional and community culture in which this study was conducted. The college is non-residential, and many students still live at home. Data discussed later reflect that the vast majority came from happy family situations, and there may be characteristics of a small community college that provides greater personal support than

many college students experience in larger university situations. Further studies examining mental health issues at smaller community colleges may shed additional light in this distinction.

Depression was related to all of the other mental health variables in the study with the highest positive relationships to generalized anxiety at .66 and hostility at .54. The research on depression and generalized anxiety is fairly clear that co-morbidity between these disorders is fairly common (Furr, et al., 2001; Ries Merikangas, 2005; Kessler et al., 2005). Unlike previous research, the current study found no significant relationship between reported symptoms of depression and gender or age. In fact, mother's educational background was the only social demographic variable that showed a significant relationship to depression, but it was a fairly weak positive relationship.

The reported levels of depression did not successfully predict persistence to spring semester or successful completion of the fall term. While the depression variable did not meet significance levels in the regression analysis on completion of the fall semester, it was approaching significance with a probability of .054. Because it is approaching a significant level, it may be worth noting that the Exp(B) score of .574 may indicate that for every unit increase on the depression scale, students are about 57% less likely to successfully complete the semester when holding all other variables constant.

Similar to the other mental health variables, the hostility subscale was not a successful predictor of completion of the fall term or reenrollment to spring semester. However, there was evidence that hostility was present among many of the student respondents and did have a positive relationship to all of the other mental health variables. In particular, there was a significant positive relationship between depression

and hostility as well as between generalized anxiety and hostility. Younger students were more likely to report feelings of hostility. One in five of the student respondents reported that they sometimes feel like breaking or smashing things. Over 18% indicated that they have difficulties controlling their temper. Within this particular subscale, two items were flagged as having the potential to identify someone with violent or even homicidal feelings. Students who responded with a 3 or 4 "extremely like me" to the questions "afraid I may lose control and act violently" (N = 19, 3.7%) or "thoughts of hurting others" (N = 22, 4.3%) were referred to the counselor on the behavioral intervention team for further risk assessment. These results support the need for supportive services designed to train students in the use of more productive coping strategies for their emotional distress.

While the eating concerns variable did not successfully predict fall completion or spring reenrollment, the response frequencies to certain items within the subscale were of interest. Almost two thirds of respondents were dissatisfied with their body shape and over 40% were dissatisfied with their weight. While these questions do not necessarily indicate the presence of an eating disorder, it is clear that a good number of the students surveyed have body image issues. It was also found that gender and eating concerns had a significant negative relationship, indicating that females were more likely to report higher levels on this subscale than males. These results are not surprising in light of the current media culture that is heavily focused on appearance and body image, particularly for women. The majority of research supports this study's findings on gender differences and eating concerns. Sociocultural influences contribute to unhealthy body perceptions and influence a myriad of eating disorders, especially among females (Halgin &

Whitbourne, 2010). About one fifth of the students surveyed felt like they ate too much, and while it was much less frequently reported, over 3% of students admitted to purging behavior as a means to control weight. The purging behavior is of particular concern because it is a strong indicator of the presence of some type of eating disorder. Both generalized anxiety and depression showed the highest correlations with eating concerns in this study, further supporting the need to address some of these feelings of dissatisfaction as they frequently contribute to other psychological difficulties.

In addition to eating disorders such as Anorexia Nervosa and Bulimia Nervosa, many people are overweight in the United States. In fact, some researchers believe that childhood obesity has become an international problem, and that if left unaddressed, the epidemic will negatively impact the health and wellness of future generations across societies (Berger, 2011; Devi, 2008; Dietz & Robinson, 2005; Yajnik, 2004). The unhealthy eating habits from childhood are likely being carried on into adulthood causing or exacerbating medical problems such as diabetes, heart disease, asthma, or strokes. Mental health issues may also result from excessive weight. Dietz and Robinson (2005) found that on average, academic performance and self-esteem decreases as students continue to experience excessive weight gains. Whether individuals are dieting frequently, eating too much processed or fast food, or even engaging in more extreme forms of compulsive eating behaviors, education on proper nutrition and fitness habits may be one means to help mitigate these negative feelings and behaviors.

Problems with substance abuse were the least frequently reported mental health issues among the sample participants. The research on college freshman drinking behavior indicates a much higher rate of substance use and abuse than was reported in

this study. It is interesting to note that over one-fifth of the students surveyed admit that they have done something that they regret because of drinking, but less than 5 % feel as though they drink too much. In this researcher's experience with educating introductory college psychology students on the topic of alcohol and drug abuse, they frequently minimize their own drinking behavior and are often surprised to find out what constitutes binge drinking. A variety of psychological disorders relate to substance abuse and dependency. The correlation findings in this study were no different. Hostility and substance abuse showed the strongest positive correlation at .35.

Also significantly correlated to substance abuse were depression, eating concerns, generalized anxiety, and academic distress. The literature supports these findings in that many negative mental health outcomes such as suicidal risk, depression, violence, and eating disorders are associated with alcohol or other substance abuse (CSCMH, 2009b). The logistic regression analysis failed to demonstrate a significant predictive relationship between persistence and the presence of substance abuse issues. It is quite possible that a more indirect relationship may exist or that the impact may not be evidenced for several semesters, further supporting need for a longitudinal study.

Summary of Mental Health Treatment Findings

The following section helps to answer the second research question that asked "Among freshmen community college students with mental health problems, what is the relationship between those who have received clinical treatment in the past or present and those who have never received clinical treatment and first-year persistence rates?" Clinical treatment was measure by a series of questions that asked student participants to self-report any history, past or present, of mental health treatment. The questions

included inquiry about counseling, use of prescribed psychotropic medications, psychiatric hospitalization, and substance abuse treatment. This section also helps to address the fourth research question which asks whether the effects of mental health on persistence differ based on age, gender, enrollment status, or type of financial aid.

A review of the two regression analyses revealed that none of the mental health treatment variables significantly predicted fall semester completion or spring re-enrollment. However, there were some significant correlations and percentages that are examined in the interest of future academic or student service planning. Over 20% of the students surveyed reported taking part in personal counseling services in the past or present. Students who reported a history of counseling treatment were more likely to score positive on CCAPS-62 generalized anxiety subscale. Additionally, older female students who were employed had the highest rates of counseling treatment. The percentages of students receiving counseling services in this current study are lower than what other literature indicates among the college student population. One study conducted by Soet and Sevig (2006) found that almost 30% of the students surveyed from a general college population at a Midwestern four-year university had been in counseling in the past or present. One possible difference in the current study revolves around the lack of resources available to community college students. At the institution surveyed in this study, very limited personal counseling services are available on campus. While a few community resources exist off campus, many students may find them cost prohibitive. Additionally, the stigma of seeking treatment, in any environment, and especially within a rural area where anonymity is sometimes difficult to achieve, is another potential barrier for this particular population of students. It may also be that in

small town, rural America, students find substitutes for formal counseling through church affiliation, long-time personal friendships, or similar outlets. It should also be remembered that this sample was a first-time freshman group, and samples involving upper classmen and graduate students with greater life and college experience may naturally find greater counseling involvement.

Almost 20% of student respondents indicated the use of prescribed psychotropic medications for psychological problems. Female students reported more frequent use of medications than did male students. Students who were employed and those who were older were also more likely to have sought medication management for psychological issues. There was no significant relationship between the use of psychotropic medications and any of the mental health variables as measured by the CCAPS-62.

There also was no significant relationship between reported history of psychiatric hospitalizations and any of the mental health variables. Both psychiatric hospitalizations and substance abuse treatment history had a positive relationship to age, showing that older students were more likely to report a history (past or present) of these types of mental health services. Male students and those individuals with higher scores on the substance use subscale of the CCAPS-62 were more likely to report treatment for substance abuse issues. The current study supports the literature regarding gender differences among individuals with substance abuse problems. Males are more likely to have substance abuse issues while females are more likely to report depression and anxiety problems (Halgin & Whitbourne, 2010). There were no other statistically significant relationships between social demographic variables and history of substance abuse treatment found in the results.

The nature of small, rural community colleges could have contributed to why mental health issues did not affect persistence in any significant way for this group of students. While the majority of community colleges similar to the one in this study may be unable to offer formal mental health treatment services, it is possible the culture of these institutions provides other forms of support that help students persist in spite of their mental health problems. The college chosen for this study places great value on the belief that one of the keys to student success is the ability for students to form connections to faculty and staff on campus. This fundamental belief permeates all areas of the college and is even evidenced in administrative programming choices such as small class sizes, faculty-student advisement process, free individualized tutoring assistance, and the one-credit hour freshman orientation course. Questions about how students develop connections to faculty/staff and whether academic or student affairs programs helped facilitate these essential connections may add to the understanding of how to successfully facilitate mental health and wellness even in tough economic times. These social connections could have mitigated the effects of mental health on persistence.

Social support has a well established connection to mental health within the counseling literature. Students develop social support networks that not only include family, but also friends, teachers, and other community members. Students who participated in the study were concurrently enrolled in the freshman orientation course that was specifically designed to help students successfully adjust to college. This required course may help students cultivate relationships with mentors and gain access to the needed emotional support as they successfully navigate their first semester of college. In order to determine whether the formal and informal relationships between faculty/staff

and students who participate in this course has a lessoning impact on the attrition rates of students with mental health issues, questions about the nature and frequency of these contacts should be further investigated. Additionally, inquiry about the perceived efficacy of the curriculum reviewed in this course would be worth further examination. Finally, a more thorough evaluation of how family might have a positive influence on their mental health difficulties would be valuable to the understanding of how the community college student's experience may differ from a student at a four-year institution.

Some emotional difficulties, when experienced at a minimal to moderate level may help drive students to perform better. For instance, social anxiety symptoms, such as the fear of speaking in public, may actually turn out to have a positive impact on performance when experienced at a minimal level. Geen (1991; 1995) found that when spectators are present, individual performance is often enhanced because of increased arousal and motivation to demonstrate optimum performance. This concept is also known as social facilitation and defined as "the tendency for the presence of other people to enhance individual performance" (Hockenbury & Hockenbury, 2008, p. 532). When students experience minimal to moderate levels of social anxiety, especially related to speaking in public or engaging in other academic pursuits in the presence of others, these symptoms may actually enhance rather than diminish persistence rates. Further research would be necessary to determine what types of social anxiety symptoms and at what levels might actually enhance student performance rather than deter success.

Summary of Discussion

The current study examined whether the presence of mental health issues or a history of mental health treatment would predict persistence as defined by successful fall semester completion or spring reenrollment status. Use of logistic regression found no relationship of practical significance between a combination of mental health variables, history of mental health treatment, or social demographics and successful fall completion or spring semester reenrollment. While the statistical results did not support the regression equation as defined within the current study, several of the findings summarized in the previous sections help to explain the prevalence of the respondents' mental health problems. All of the mental health variables measured had a significant relationship to academic distress, with anxiety and depression having the strongest positive correlation. Within the fall semester completion regression analysis, the academic distress variable was statistically significant in predicting persistence. It could be theorized that while mental health variables may not show a direct predictive relationship to persistence in this study, future research may benefit from the investigation of the indirect connections to retention.

Limitations

The study had several limitations, any of which could contribute to conservative mental health prevalence rates. First, the use of a self-reported survey made the data collection dependent upon the student respondents' compliance to answer all questions truthfully. Any tendencies toward making themselves look good or even a lack of interest from students could alter the outcomes of the study. Because several survey items pertained to feelings about harming self or others, the university Review Board

required that any student responding positively to these questions be indentified and referred to counseling. As a result, students were aware that their responses to certain questions were being monitored. Although the respondent rate was over 50%, an unwillingness to be identified for further risk assessment could have lead some students to opt out of participation, or to hide serious issues if they believed they may lead to a referral. Additionally, the CCAPS-62 survey items specifically asked students to reflect on their recent mental health symptoms. Thus, some of the findings may not reveal a complete picture of student mental health over time.

This limitation raises interesting questions about doing research of this type within the restrictive environment of university IRB approval process. Some of the other research cited in this study was conducted in an environment that allowed student to remain anonymous, and produced much higher levels of mental health concerns. Special consideration may need to be given to studies of this type in the future to determine if student identification requirements have a compromising effect on the research.

The non-respondents were not analyzed within the current study. The length of the survey, the sensitive nature of the questions, or the fact that the study used an internet-based survey method to collect data could be one of many reasons that some students failed to participate. Finally, only one community college in a rural, Midwest location was used to collect data for this study. As the demographic data showed, the college is relatively homogeneous, as is the community in which the college is located. Students living in a more diverse, urban setting might respond quite differently. As a result, generalizations should be made with caution because of possible environmental or cultural variances.

Recommendations for Further Research

Results from this study offered an understanding of the prevalence and nature of mental health issues experienced by community college freshmen. The study also provided additional insight for academic and student affairs administrators to consider in the design of programs to promote the health and wellness of students who attend community colleges. Results of the study suggested that at least in the case of this college environment, the presence of mental health issues did not affect persistence or retention negatively. To further advance the understanding of community college student mental health, the following recommendations may be important to consider.

1. The current study included results from only one community college in the rural, Midwest. Significant differences could occur in urban or suburban community college environments in terms of types of mental health issues present, the kinds of mental health treatment sought, and their impact on first-year persistence rates. It would be valuable if this study were replicated using additional urban or suburban community college settings within the Midwest and elsewhere. The data could add to the understanding of the mental health needs within community colleges nationwide.
2. This study did not consider how characteristics of a small community college may affect the experience of mental health issues among college freshman. There is a possibility that the lower rates of depression found in this study might be a reflection of the institutional and community culture. Certain features of a small community college may provide greater personal support than many college students experience. Further studies examining mental

health issues at smaller community colleges may shed additional light in this distinction.

3. The need for additional research that assesses the long term impact of community college student mental health may be warranted. The current study only assessed persistence within the first semester of college, but some mental health problems, such as generalized anxiety, can have a more gradual onset, and if left untreated, causes significant personal distress. It would be beneficial to investigate the longitudinal patterns of mental health concerns within the community college context to determine whether their presence, over time, impacts the development of additional mental health concerns or problems with academic performance.
4. The measurement tool utilized in the study was designed as a mental health screening instrument and does not provide definitive diagnostic data for participants. Follow-up clinical interviews with individuals who scored within the higher range on the subscales would further the diagnostic information for these college students. This information would help not only to better specify the nature of the difficulties but would also answer questions about how these students perceive their difficulties are impacting college life.
5. Additional research on how social networks of first-year community college students mitigate the impact of mental health problems needs to be conducted. While the current study's results support the literature that suggests evolving interpersonal relationships are among the most challenging aspects of college life for first-year college students, it is possible that the social support

networks of freshman community college students may not be disrupted to the degree that residential college students who move away from their families and communities of origin experience. This intact social support structure may help to lessen the impact of mental health issues that may be commonly experienced among first year college students.

6. The current study did not address specific questions about traumatic events, but some of the results from the generalized anxiety subscale suggest that it is an area of concern that should be further investigated among this population. Additional measurement tools or clinical interviews may widen the understanding of how past traumatic events affect first-year community college student mental health.
7. The results of this study revealed that social anxiety was the most prevalent mental health problem. Further research is needed to determine what factors are contributing to these concerns. The different patterns of communication among young adults, such as texting, use of Internet and social networking websites, could be affecting students' verbal communication abilities.
8. The study found that social anxiety did not negatively affect persistence among first-year students. Whether or not prolonged feelings of social anxiety may eventually lead to problems with persistence or the development of other psychological disorders, such as depression or substance abuse, continues to be of concern. A longitudinal study of mental health issues and persistence might address this unknown.

9. The results of the study suggested that students may be unaware of what factors constitute substance use problems. With over 20% of the respondents admitting to doing something they regret because of drinking, but less than 5% saying that they drink too much, there is some support for this speculation. Further research that focuses specifically on substance abuse behaviors and awareness among this population seems warranted.
10. The results of this study do not provide information about the non-respondents. Provisions for gathering information about the individuals who chose not to respond to college student mental health research would be beneficial in future studies.
11. Responses to the survey were kept confidential except in cases where there was evidence of intent to harm self or others. The lack of anonymity could have been a deterrent for participation in the study or possibly underreporting the presence of symptoms. Further research may involve finding ways to collect community college student mental health data anonymously to combat the problems of non-response or underreporting.
12. This study focused primarily on quantitative measures of mental health and traditional outcomes such as retention. Future research is needed to focus beyond quantitative measures and address how first-year community college students perceive their own mental health issues. A great deal of value would be gained by allowing first-year students with mental health problems to share their stories as they try to navigate their college transition in the midst of these difficulties. This qualitative research might also cast additional light

on how campus environment affects whether students with mental health issues persist or withdraw.

Concluding Remarks

The objective of this research was to determine the prevalence and persistence rates of first-year students with mental health issues in a community college environment. With the majority of data about college student mental health coming from four-year colleges and universities, evidence specific to the nature of community college student mental health problems is largely unknown. Unlike four-year post secondary institutions, most community colleges do not offer on campus student mental health services, further complicating the data collection and service delivery for these students. For this study, it was also important to differentiate whether students with identified mental health issues were persisting at the same rates as other first-year students.

Findings confirm that community college students who participated in this study were experiencing a variety of mental health difficulties including anxiety, depression, hostility, eating concerns, substance use, and academic distress, though in many cases not at the levels that other research might have suggested. While some students accessed off campus mental health treatment, many students had not sought help for their mental health problems. The findings of the analyses did not support a direct predictive relationship between mental health problems and first semester completion rates or second semester reenrollment. The findings did support a relationship between level of academic distress and other mental health problems. Further examination of the topic may lead useful information concerning the interactive affect mental health has on academic distress or academic performance.

Administrators, faculty, staff, and fellow students should not assume that first-year students with mental health issues do not need on campus support. A close examination of the responses to several survey items resulted in 20 student referrals to the behavioral intervention staff for potential suicidal or homicidal ideations. Not all mental health problems require extensive services, however. Some of the emotional distress that first-year students face may only require interventions such as mental health education awareness, periodic support, or even access to self-help resources. Acknowledgement that these difficulties exist even within the community college environment may lead toward the development of strategies to mitigate the negative impact mental health problems can have on student success within this increasing important post-secondary population.

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APPENDIX A

CCAPS-62

Name: _____ **Date:** _____

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

	Not at all like me				Extremely like me
1. I get sad or angry when I think of my family	0	1	2	3	4
2. I am shy around others	0	1	2	3	4
3. There are many things I am afraid of	0	1	2	3	4
4. My heart races for no good reason	0	1	2	3	4
5. I feel out of control when I eat	0	1	2	3	4
6. I enjoy my classes	0	1	2	3	4
7. I feel that my family loves me	0	1	2	3	4
8. I feel disconnected from myself	0	1	2	3	4
9. I don't enjoy being around people as much as I used to	0	1	2	3	4
10. I feel isolated and alone	0	1	2	3	4
11. My family gets on my nerves	0	1	2	3	4
12. I lose touch with reality	0	1	2	3	4
13. I think about food more than I would like to	0	1	2	3	4
14. I am anxious that I might have a panic attack while in public	0	1	2	3	4
15. I feel confident that I can succeed academically	0	1	2	3	4
16. I become anxious when I have to speak in front of audiences	0	1	2	3	4
17. I have sleep difficulties	0	1	2	3	4
18. My thoughts are racing	0	1	2	3	4
19. I am satisfied with my body shape	0	1	2	3	4
20. I feel worthless	0	1	2	3	4
21. My family is basically a happy one	0	1	2	3	4
22. I am dissatisfied with my weight	0	1	2	3	4
23. I feel helpless	0	1	2	3	4
24. I use drugs more than I should	0	1	2	3	4
25. I eat too much	0	1	2	3	4
26. I drink alcohol frequently	0	1	2	3	4
27. I have spells of terror or panic	0	1	2	3	4
28. I am enthusiastic about life	0	1	2	3	4
29. When I drink alcohol I can't remember what happened	0	1	2	3	4
30. I feel tense	0	1	2	3	4
31. When I start eating I can't stop	0	1	2	3	4
32. I have difficulty controlling my temper	0	1	2	3	4
33. I am easily frightened or startled	0	1	2	3	4

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CCAPS-62

	Not at all like me				Extremely like me
34. I diet frequently	0	1	2	3	4
35. I make friends easily	0	1	2	3	4
36. I sometimes feel like breaking or smashing things	0	1	2	3	4
37. I have unwanted thoughts I can't control	0	1	2	3	4
38. There is a history of abuse in my family	0	1	2	3	4
39. I experience nightmares or flashbacks	0	1	2	3	4
40. I feel sad all the time	0	1	2	3	4
41. I am concerned that other people do not like me	0	1	2	3	4
42. I wish my family got along better	0	1	2	3	4
43. I get angry easily	0	1	2	3	4
44. I feel uncomfortable around people I don't know	0	1	2	3	4
45. I feel irritable	0	1	2	3	4
46. I have thoughts of ending my life	0	1	2	3	4
47. I feel self conscious around others	0	1	2	3	4
48. I purge to control my weight	0	1	2	3	4
49. I drink more than I should	0	1	2	3	4
50. I enjoy getting drunk	0	1	2	3	4
51. I am not able to concentrate as well as usual	0	1	2	3	4
52. I am afraid I may lose control and act violently	0	1	2	3	4
53. It's hard to stay motivated for my classes	0	1	2	3	4
54. I feel comfortable around other people	0	1	2	3	4
55. I like myself	0	1	2	3	4
56. I have done something I have regretted because of drinking	0	1	2	3	4
57. I frequently get into arguments	0	1	2	3	4
58. I find that I cry frequently	0	1	2	3	4
59. I am unable to keep up with my schoolwork	0	1	2	3	4
60. I have thoughts of hurting others	0	1	2	3	4
61. The less I eat, the better I feel about myself	0	1	2	3	4
62. I feel that I have no one who understands me	0	1	2	3	4

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APPENDIX B

Additional Survey Questions

I have attended counseling for mental health concerns

Never(0) Prior to College (1) After starting College (2) Both (3)

I have taken a prescribed medication for mental health concerns

Never(0) Prior to College (1) After starting College (2) Both (3)

I have been hospitalized for mental health concerns

Never(0) Prior to College (1) After starting College (2) Both (3)

I have received treatment for alcohol or drug problems

Never(0) Prior to College (1) After starting College (2) Both (3)

Gender:

- (0) Female
- (1) Male

Race/Ethnicity:

- (1)American Indian/Alaska Native
- (2)Asian
- (3)Black or African American
- (4)Hispanic
- (5)Native Hawaiian/Pacific Islander
- (6)White
- (7)Race/Ethnicity Unknown

What is your age (in years)?

I receive some type of financial aid

- (1) YES
- (2) NO

Enrollment Status:

- 1 Full-Time [12 or more credit hours]
- 2 Part-Time [Less than 12 credit hours]

Marital Status

- 1 Single
- 2 Married

Father's Educational Background

- 0 Less than a High School Diploma
- 1 High School Diploma or GED
- 2 Some College Experience
- 3 Associates Degree
- 4 Bachelors Degree
- 5 Graduate Degree
- 6 Doctoral Degree

Mother's Educational Background

- 0 Less than a High School Diploma
- 1 High School Diploma or GED
- 2 Some College Experience
- 3 Associates Degree
- 4 Bachelors Degree
- 5 Graduate Degree

- ○ 6 Doctoral Degree

Are you currently employed?

- ○ 1 (YES)
- ○ 2 (NO)

APPENDIX C

Division of Educational Leadership and Policy Studies
One University Blvd.
St. Louis, Missouri 63121-4499
Telephone: 314-516-5944
E-mail: wjl25c@umsl.edu

Informed Consent for Participation in Research Activities

Why am I being asked to participate in this research project?

As a student at East Central College, you are invited to participate in a research study conducted by Wendy Pecka, Psychology Instructor at East Central College and Doctoral Student at the University of Missouri-St. Louis (UMSL) and Dr. Kent Farnsworth Ph.D., Faculty Supervisor, UMSL. The purpose of this project is to learn more about the attitudes, feelings and behaviors of freshman. Additionally, the goal of this research is to examine if students enroll in courses for the following semester. The project is voluntary and results will be completely confidential.

What procedures are involved?

If you agree to be part of this research project, you can expect:

- To complete a short survey that will take about 20 minutes.
- Your registration status for the Spring, 2011 semester will be checked in January, 2011 to see if you enrolled for courses or not.

What are the risks and benefits associated with this research?

There are no anticipated risks associated with this research, and there are no direct benefits for participating in this study. However, your participation will help to develop knowledge about the best ways to support freshman students.

Your responses to the survey will be kept confidential except in cases where your answers suggest you have intent to harm yourself or others. In such instances, a counselor from East Central College will contact you to make sure you receive any needed assistance.

What are the costs associated with this research?

Participants will not bear any of the costs for this research, nor will they be paid for their participation.

Can I withdraw or be removed from the study?

Your participation is voluntary. You may choose not to participate in this research study, and you may withdraw your consent at **any time**. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

What are my rights as a participant?

We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study. All data from this study will be stored in a locked office on a password protected computer.

If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Ms. Wendy Pecka at 636-583-5195 ext. 2264. **I have read this consent form and have been given the opportunity to ask questions. By entering the survey, I am providing acknowledgement of consent to participate in the study. If at any time I wish to withdraw my consent, I will contact Ms. Pecka immediately. Any incomplete surveys will be considered automatically withdrawn from the study.**

APPENDIX D

CAITLIN LORRAINE CHUN-KENNEDY ROMERO clc1015@psu.edu to **bdl10**, 3/19/10

Hi Wendy,

I am replying on behalf of Ben and I apologize for not getting back to you until today. I needed to check with Ben regarding your status as a researcher. I will take your email as a formal request to use the CCAPS-62 for your dissertation research. I'm attaching the CCAPS user manual and interpretation guide (included are the CCAPS 62 and 34) and please let me know if you have any questions. Good luck and please let us know about your findings! Take care,

Caitlin

Caitlin Chun-Kennedy, M.S.
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From: **wendy pecka** <peckaw@eastcentral.edu>
Date: Mon, Mar 1, 2010 at 1:26 PM
Subject: Permission for use of CCAPS
To: Ben Locke <bdl10@sa.psu.edu>

Dr. Locke-

I am a doctoral student at the University of Missouri-St. Louis in the Higher Education and Administration program. I contacted you in the Fall 2009 term about obtaining permission for use of the CCAPS in conducting a mini-study at the institution where I am currently employed. The study went very well, and I would like to expand upon that study for my dissertation.

In the Fall 2010 term, I would like to use the CCAPS to gather mental health information on incoming freshman at the community college where I am employed. The plan is to compare that information to persistence rates to Spring 2011 term.

Is there a way I might I go about obtaining permission to use the CCAPS instrument for my study? Thank you for your assistance.

Wendy Pecka, MS, LPC
--
Wendy Pecka
Psychology Instructor
East Central College

1964 Prairie Dell Road
Union, MO 63084
636-583-5195 ext. 6658
peckaw@eastcentral.edu
ALLISON JANE LOCKARD ail5178@psu.edu to me
To: mrs.pecka@gmail.com
date: Wed, Sep 21, 2011 at 7:28 PM
subject: FW: Permission for CCAPS-62 within Dissertation Appendix
mailed-bypsu.edu

Hi, Wendy,

I am responding on behalf of Ben Locke. This email serves as permission to include a copy of the instrument (CCAPS 62) in the appendix. You also have permission to include the internal consistency data for the subscales. Best wishes as you finish your dissertation.

Allison Lockard, M.A.
Grad Asst., CCMH
Doctoral Student, Counseling Psychology
ccmh.psu.edu

From: mrs.pecka@gmail.com [mailto:mrs.pecka@gmail.com] **On Behalf Of** wendy pecka
Sent: Wednesday, September 21, 2011 3:08 PM
To: Ben Locke
Subject: Permission for CCAPS-62 within Dissertation Appendix

Dr. Locke-

I am a doctoral student at the University of Missouri-St. Louis in the Higher Education and Administration program. I contacted you in the Fall 2010 term, and received permission for use of the CCAPS in my dissertation research that involved gathering mental health information on incoming freshman at the community college where I am employed. The research involved comparison of that information to persistence rates in Spring 2011 term.

I completed my dissertation research and plan to conduct my final defense this fall semester. At this time, I would like to request permission to include a copy of the CCAPS-62 in the appendix of my dissertation. I am also requesting permission to include the internal consistency (alpha) data for the subscales that is found on page 4 of the CCAPS user's manual within chapter 3 of my dissertation.

If you could let me know whether or not that would b! e acceptable, it would be greatly appreciated.

Again, thank you for the support and permission to use this instrument as part of my dissertation research.

Wendy Pecka
Doctoral Student
University of Missouri-St. Louis