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**COLLEGE HEALTH AND MENTAL HEALTH
OUTCOMES ON STUDENT SUCCESS**

by

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B.S. May 2009, James Madison University
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A Dissertation Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirements for the Degree of

DOCTOR OF PHILOSOPHY

COUNSELOR EDUCATION AND SUPERVISION

OLD DOMINION UNIVERSITY
August 2014

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ABSTRACT

COLLEGE HEALTH AND MENTAL HEALTH OUTCOMES ON STUDENT SUCCESS

Daniel Joseph St. John
Old Dominion University, 2014
Chair: Dr. Alan Schwitzer

This study explores the relationship between college students' utilization of university counseling services and university health services, and student academic performance. Data was collected using an archival data set including university counseling center records, health center records, and academic reports from institutional research at a large, public southeastern university. The primary variables of this study included: number of sessions in the university counseling center and/or university health center, instances of new initiated contacts, treatment variables, GPA, and degree completion. The overarching hypothesis of this study is that students who receive mental health services are significantly more likely to experience student success as a result of counseling center and health center contacts. The limitations of the current study as well as implications for educators and counselors are also presented.

This dissertation is dedicated to my mother, Sherri.

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CHAPTER ONE

INTRODUCTION

Chapter One presents an overview of the problem, namely, exploration between the role and impact of university counseling and health centers on student academic success in college. Chapter One discusses background of the issues, with potential significance of the study and the research questions that will drive the focus of the dissertation. The definitions of these key terms can be found near the conclusion of Chapter One.

Chapter Two presents an in-depth and exhaustive summary of the literature related to student academic success in college, the role of university counseling centers, and the role of university health centers. The literature will start broadly and continue to focus more specifically on understanding of the unique issues examined in this study in order to extend the knowledge base.

Chapter Three provides the research methodology and a structure for the following study. This chapter presents the research, tactic, and data analysis procedures (including MANCOVA, two-way MANCOVA, and logistic regression). Detailed participant demographics and potential study limitations are additionally described.

Background of the Problem

According to Merker and Smith (2001), “as many as 40% of entering freshmen leave school without earning a degree, 75% of these students drop out in the first 2 years of college, and institutions can expect that 56% of a typical entering class cohort will not graduate from that college” (p. 3). There is a challenge for a university to maintain their student population with such a large portion of each incoming class failing to obtain their

undergraduate degree. This is an issue that impacts the community of a campus; as a result, in practice, this means a variety of elements within the university are tasked with the responsibility of making an effort to retain these students.

More specifically, students often require support services supplied by the university in order to alleviate academic difficulty. These might come in the form of a writing center, career and academic planning, or seeking out the mentorship of a Residence Life representative. There are a wide variety of issues that can cause academic obstacles, spanning from psychosocial, interpersonal, and cultural issues, to more traditional academic concerns such as time management and study strategies (DiPerna, 2004).

There is a trend for college students coming to universities, to present, with an increasing frequency, a complexity of health issues (Gallagher, Sysko, & Zhang, 2001). In fact, it has been reported that over 75% of university counseling center directors noted an increase in the number of clients displaying complex psychological problems and learning disabilities (Davis & Humphrey, 2000). As a result, this has led to an increase in students needing and seeking out services provided by the university in order to remain in college and work towards the completion of degree requirements.

Statement of the Problem

Students are dealing with challenging health and mental health concerns that can negatively impact academic success. Through the research conducted in this study, these concerns are addressed. It is well established that counseling and college counseling centers are effective in the treatment of mental health issues (Sharf & Bishop, 1973;

Nafziger, Couillard, & Smith, 1999; Minami et al, 2009; Vermeersch et al, 2004; Whipple et al, 2003; Nafziger, Couillard, & Smith, 1999; Vonk & Thyer, 1999).

Likewise, it is important that counseling centers and health centers are able to contribute to the overall mission of higher education by addressing health concerns that are barriers to student academic success (Illovsky, 1997). This study addresses all individuals who attended counseling and health services at a single university over a ten-year period—excluding some data due to missing or contradictory data. This current study is designed to answer remaining questions about exactly what therapy variables lead to improvement.

Purpose of the Study

The purpose of this study is to contribute to the knowledge base regarding evidence-based practices and outcomes of college and university counseling and health centers. It attempts to demonstrate that both offices contribute to the institutional mission of student success; however, it also looks to compare the relative efficacy of counseling center, health center, and combined treatment. Universities are designed to assist in the academic and psychosocial development of its learners. Each office is looking to meet multiple needs regardless of their specialty. Considering that academic attainment is the primary mission of a college education, it is important to assess how well the health centers and college counseling centers are addressing the academic needs of students. University counseling centers and university health centers have a responsibility to provide services that will not only assist in an individual's personal growth and development, but they should also assist in the matriculation and retention efforts of the university (Kern, Fagley, & Miller, 1998).

From a clinical perspective, another aspect to consider is the relationship between counseling interventions and medical interventions. For example, previous studies have addressed the differences between single and concurrent treatment for depression. Compared to only utilizing medical interventions, it has been demonstrated that counseling is more effective in reducing depressive symptoms—particularly when it relates to reducing the rate of relapse in clients (Karon, 2007).

Significance of the Study

This study expands existing and other in-progress research examining the role of the counseling center's treatments on students' academic success. Ultimately, all offices in higher education fall under the mission of the university. Even though each college has its own unique vision and/or mission statement, each is geared towards promoting academic success. It is important to look at how these offices are interacting with one another to address the needs of students. Through this study, we have the opportunity to see if the combined efforts of a university counseling center and a university health center contribute to the overall academic success of students.

Research Questions

This study was guided by three research questions. They are as follows:

Phenomenology and Utilization of Services Pattern: Between Group Comparison

Research Question 1: To what degree is service placement (counseling center only, health center only, initial counseling center leading to dual services, initial health center leading to dual services) significantly associated with severity of diagnostic class, graduation within six years, and post-treatment GPA?

Utilization of Services Pattern: Health Center Only

Research Question 2: Is there a significant relationship between the number of health center sessions per client and number of newly initiated contacts of the health center (number of times a student initially seeks out services) for academic performance variables?

Research Question 3: Does group assignment (intake-only v. treatment group) and compliance with medication management predict graduation within six years for health center clients?

Research Design

This study was completed using a quantitative research design. It is Phase II of a larger project, which utilizes and builds upon on a previously established dataset. The existing data comprises grade point averages, graduation rates, and enrollment information by semester for those students who sought counseling services, as well as details pertaining to counseling center utilization. In the current study, additional institutional and treatment data pertaining to mental health service provided by the health center was added. The data has been organized and cleaned in order to make it more systematic and eliminate any identifying information in order to maintain ethical practice. The data has been analyzed using MANCOVAs and a logistic regression in order to address the study's research questions.

Theoretical Framework

The theoretical framework for this study is Drum & Lawler's (1988) tripartite intervention model. As discussed in Schwitzer, Bergholz, Dore, & Salimi's (1998) landmark article on college counseling and health vis-à-vis eating disorders, the model

comprises three levels of interventions: prevention, developmental intervention, and psychotherapeutic intervention. Based on the features of the target population, an appropriate model of intervention is selected. The features assessed are level of need, sense of urgency, and level of motivation for change. Depending upon the selected model of intervention, there will be a variance of therapeutic goals and intervention methods. Preventative intervention is implemented for clients who may display no existing symptoms for a particular problem by distributing information to enhance understanding and encourage improved behavior. Individuals may be vulnerable to a particular problem, and preventative interventions are used to avert the commencement of difficulties. Developmental intervention is utilized for individual's who have concerns, which are increasing or evidently current. These secondary preventions are commonly employed to assist normative psychosocial development. Encouraging clients to add new skills or dimensions to their lives facilitate this development. Psychotherapeutic interventions are incorporated to deal with persistent problems and embedded patterns of unhealthy behavior. In these scenarios, the client has a greater motivation for change; the problem needs to be addressed immediately; and the concern requires more intensive treatment. This counseling center framework organizes the various counseling center functions and services. At the psychotherapeutic level, individual counseling and health/medical interventions are used to remediate entrenched problems (Schwitzer, et al, 1998).

Assumptions, Limitations, and Delimitations

There is an assumption that a student who needs to receive both mental health and physical health services may be facing more interpersonal and physical stress than the average college student. This assumption will go on to inform a hypothesis in one of the

research questions. This person may come into counseling or health services already at a disadvantage for completing all degree requirements in order to graduate from the institution. Similarly, this person is assumed to have a greater challenge related to increasing his or her grade point average. It is assumed that all data collected from institutional research is an entirely accurate and honest portrayal of the students who attended counseling and health services. Similarly, it is assumed that all information supplied by the university counseling center and the university health center is accurate concerning diagnosis, treatment planning, and all other specific information supplied by those organizations.

Since the data collected by institutional research and the counseling center data is part of an existing dataset, there is a limit to internal validity because the current researcher cannot account for each action of the previous researchers and co-participants. It is assumed that all actions were done in an ethical and professional manner. It is assumed that the sample of students being used in this study will all be college students who are or have been enrolled at the university as either undergraduate or graduate students.

There were also limitations due to what was not examined through the study's focus. A delimitation of the study would be that the researcher did not include data related to community colleges or private institutions. Additionally, this study utilized a dataset that is particular to a singular university and a singular timeframe. Lastly, the archival dataset used in this study had access to many variables; however, only a select group of variables were chosen for analysis in order to answer a finite series of research questions.

Definition of Terms

Academic Success: Defined by a student's grade point average (GPA) and whether or not a student has earned his or her degree.

College Student: Individual enrolled in college courses on a full-time or part-time basis at a public or private university who continues to matriculate but has not completed a bachelor's degree.

Degree Completion: This is defined as the successful completion of all degree requirements within six years of enrolling at a four-year university.

Global Assessment of Functioning (GAF): Measure of function used by mental health professionals to assess how well clients are managing and adapting to life events. Measured on a scale of 0-100.

Group Assignment: For students that initiated treatment with the university health center, did that individual engage in an intake session only or did the participant return for treatment.

Grade Point Average (GPA): Measure of academic success for a college student based on performance in coursework. Measured on a scale of 0.0-4.0.

Number of newly initiated contacts: The total number of times a student initially seeks out services from the counseling center or health center.

Number of sessions: The number of sessions at the health center and/or counseling center attended by the student after the initial session.

Post-treatment GPA: This is the change in students' cumulative GPA for the semester prior to participating in counseling and/or health services and students' cumulative GPA for the semester in which services are employed. Measured on a scale of 0.0-4.0.

Pre-treatment GPA: The cumulative GPA prior to the semester of counseling and/or health center treatment. Measured on a scale of 0.0-4.0.

Reason for Treatment: When a college student seeks services from a university counseling center or a university health center, the Reason for Treatment is the presenting issue given by the student and their motive for seeking out services.

Retention Rate: The percentage of students who continue enrollment at the university.

Service Placement: Indicates which services and in what order students received treatment: counseling center only, health center only, initial counseling center leading to dual services, and initial health center leading to dual services.

Severity of Diagnostic Class: This is a more thorough description of how severe the reason for treatment is based upon the professional judgment of the mental health professional in a University Counseling Center or University Health Center after meeting with the student. Starting with 119 diagnostic categories, four classifications are established by the researcher—the details of which can be found in Chapter 4.

Term of Treatment Initiation: This is the semester (Fall, Spring, or Summer) and year that the learner initiated treatment at the University Health Center or University Counseling Center.

Traditional Undergraduate: College student between the ages of 18-23 enrolled in a full course load of (at least) 12 credit hours that continues to matriculate but has not completed a bachelor's degree.

University Counseling Center: Office at a college or university staffed by mental health professionals: psychologists, counselors, and/or social workers. These centers often provide individual counseling, group counseling, crises services, consultation services,

and psychiatric services.

University Health Center: Office at a college or university staffed by a variety of health professionals. These centers provide treatment for illnesses, immunizations, health promotion and outreach services, and mental health.

Conclusion

This chapter overviewed the topic of academic success in college students who attend counseling and/or health center services, detailed the research questions, specified the assumptions of the researcher, overviewed potential limitations and delimitations, and shared the possible significance of the dissertation. In the following chapters, there will be a more thorough exploration of the relevant literature to this study. Lastly, Chapter 3 will explore the data collection methods and the study's design.

CHAPTER TWO

REVIEW OF THE LITERATURE

Chapter One shared the research problem, introduced the research questions, and stated the purpose and significance of the study. This chapter will examine the overall mental health needs of college students. Additionally, there will be a discussion of mental health and academic success, counseling center affects, health center affects, and assessing outcomes for counseling and health centers.

College Student Mental Health Needs

To begin, prominent issues related to the overall mental health needs of college students will be discussed. Students seek out counseling services with a variety of presenting concerns and underlying issues. By conceptualizing these trends in terms of overall mental health needs, a framework is provided for the outcomes on student success at a university level.

Brief History of Student Affairs and Higher Education

From 1700 to 1900, a small percentage of the population was enrolled in higher education. Within that time frame, less than 5 percent of Americans attended college—a remarkable figure when compared to societal expectations when it comes to pursuing a degree after high school. Between the two World Wars, this increased to 20 percent, and by the 1970's, it was over 50 percent. These numbers would continue to rise over time as higher education became more accessible to the working class Americans who would have previously left the option unconsidered (Komives & Woodard, 2003).

History of College Mental Health

The history of college counseling centers comprises a longstanding, evolutionary timeframe. The following sections will describe the historical development of college counseling centers, discuss the current increase in complexity and severity of presenting student concerns, and define today's counseling center and its relation to today's campus missions.

There are several phases in the development of counseling and mental health services: pre-1945, 1945-1955, 1955-1970, 1970-1982, and the current phase of "increasing pathology, violence, need for outreach/ prevention and limiting services" (Archer & Cooper, 1998, p.8). Before 1945, "counselor centers" were advisors, faculty, and student affairs professionals. There was no difference between vocational guidance, student personnel, and counseling. However, there was an increasing awareness of the need for clinical counseling (Archer & Cooper, 1998, p. 7). Teachers and members of the clergy were left with the responsibility to counsel on personal matters. College students were initially encouraged to engage in physical activity and exercise during their academic pursuits in order to abate emotional concerns. Within the same era of higher education, the first college health program was implemented at Amherst College in 1861 in order to address physical ailments. Continuing into the 20th century, the number of professionals trained in the treatment of physical ailments as well as mental health therapy drastically increased due in part to the Mental Hygiene Movement inspired by *A Mind That Found Itself*—an autobiographical book written by Clifford Beers (Kraft, 2011, p. 477).

In 1910 at Princeton University, Stewart Paton, MD would introduce the very first

rendition of a university counseling center. The service was introduced after many students at the college were not retained due to emotional and psychological issues that interfered with academic progress. Essentially, the first counseling center was aimed at retention. Some schools would follow suit, but many institutions focused on developing college health centers, as there were not as many professionals trained in mental health issues. The first National Conference on Health in Colleges was held in 1931, which established standards for health services for college students. Within the next twenty years, university health centers would develop a more professionally diversified staff that included psychiatrists, psychologists, and social workers (Kraft, 2011).

Between 1945-1955, rapid growth occurred in the number of formal counseling centers—in order to account for theoretical advancements, developments in college counseling organizations, and an increase in students and student needs following World War II. The work of counselors was different from student personnel work, but services still were geared toward more vocational and educational counseling. This ultimately would prove to be one of the most influential periods in the development of university counseling centers (Davis & Humphrey, 2000, p. 21-22). At the conclusion of World War II, there was a considerable influx of students as a result of the GI Bill, which funded educational opportunities for veterans returning to the US. Naturally, the increase in student population, driven in large part by returning GIs with their special needs, meant an increase in the need for mental health professionals.

As college health centers became established during the 1960's, mental health services would expand as universities continued to increase the number of students who were being serviced. Not only were the numbers of students increasing, but there was

also an increase in the number of colleges in the country. These developments necessitated an increase in mental health professionals on college campuses. Over the past 40 years, an important movement has been the focus on health education to include “prevention, mental health, and substance abuse areas” (Kraft, 2011, p. 479-480).

From 1955-1970, there continued to be a focus on vocational and educational counseling. However, personal counseling began to emerge as an important facet of college counseling center missions (Archer & Cooper, 1998, p. 8). This period also saw rapid expansion in the role of counselors outside of vocational guidance, in the increasing number of two-year colleges, and in the development and implementation of accreditation standards for counseling programs (Davis & Humphrey, 2000, p. 25). The period of 1970-1982 saw the role of counseling centers broaden. Centers evolved to encompass a more diverse clientele, and also to target the entire campus as potential clientele. Although the role of the counseling center was expanding, centers began to face new challenges in the form of budgetary and resource limitations due to economic decline (p. 26). Since the mid-1970's, centers have increased their dedication to being more preventative through consultation and outreach work. Additionally, during this time frame, the differences between counseling centers and mental health centers started to blur as many campuses opted to merge the departments (Archer & Cooper, 1998, p. 8-9).

Current Mental Health Needs in College Students

College counseling has continued to face substantial transitions. During the 1980's, counseling centers began to emphasize assessment and diagnosis. Mergers with university health centers occurred and the role of the counseling center developed while separating from traditional career counseling (Sharkin, 2011, p. 4).

“It is estimated that there are over 18 million students between the ages of 18 and 24 currently enrolled in US higher education institutions” (Ruthig, Marrone, Hladkyj, & Robinson-Epp, 2011, p. 307). That is an immense portion of the population that is going through a challenging period of transition and development. The role and purpose of university counseling centers has continued to develop and evolve over time in response to a variety of factors. It is possible that the greatest impetus for change is the change in demographics of the student population. As the face of the student population changes, so do their mental health needs (Kitzrow, 2003, p. 646).

Two of the largest contemporary trends facing university counseling centers are (1) the increasing number of students who seek out services and (2) the severity or complexity of presenting issues by those learners. For example, severe psychological concerns such as major depressive episodes, suicidal ideation, and substance abuse are increasing within college student populations (Kitzrow, 2003, p. 647). Likewise, there has been an increase in the perception of “pathology, violence, need for outreach/prevention and limiting services” (Archer & Cooper, 1998, p. 8). University counseling centers have dealt with an increasing level of complexity when it comes to the psychological challenges of clients in several ways. Although centers are equipped to work with normative issues such as personal issues and adjustment, they are also key factors in dealing with substance abuse, suicidal ideation, and other instances that disturb the equilibrium of the campus community (p. 8). According to the 2013 National Survey of Counseling Center Directors, there is a belief among the vast majority of surveyed directors (88%) that there has been a continuing increase in the number of learners entering higher education already prescribed to psychiatric medication. And from 1994 to

2013, there has been a persistent rise in the number of counseling center clients on psychiatric medication from 9% to 25%. Additionally, over the past 5 years, 95% of directors surveyed, reported increases in the severity and frequency of psychological problems including (but not limited to) crises requiring immediate response, psychiatric medication issues, and learning disabilities (Gallagher, 2013).

It would appear that students are coming into the university setting in greater need of health and mental health supports than in past generations. There are multiple possible explanations for this belief. It could be partly an issue of professional availability and sensitivity. It is possible that students are presenting the same level of severity but mental health professionals are more successful at observing problematic behavior (Kitzrow, 2003, p. 649). Another rationale could be that because of medical advances and the Americans with Disabilities Act (ADA) students—who would have previously been filtered out and left without the possibility of higher education—are given the opportunity to pursue a degree at an institution of higher learning.

While campuses are reporting a greater use of university counseling centers for longer periods of time, this increase could be related to the aforementioned increase in severity of presenting issues. It is also a fact that certain mental disorders, such as bipolar disorder, tend not to appear until late adolescence. An alternative rationale would be that students are more willing to seek out counseling services due to a decrease in the level of stigma (Kitzrow, 2003). Davis and Humphrey (2000) note that there is a greater level of cultural acceptance to engaging mental health services that increases the likelihood of a client sharing and discussing depression, abuse, anxiety, or other mental health concerns (p. 95).

Hoeppner, Hoeppner, & Campbell (2009) state that there is still mixed evidence within the profession as to whether student concerns are more severe, more complex, a combination of the two, or neither. Many studies have failed to demonstrate that there is a growing trend within higher education described as college students presenting with more severe concerns. Sharkin (2011) has found that only the counseling center personnel's perception of client severity has continued to rise. There remains a dearth of empirical research to support these perceptions. Sharkin has been particularly critical of the national survey of counseling center directors due to concerns of inherent bias as it relates to budgetary concerns. Sharkin calls on an increase in empirical research related to the claims that students are presenting counseling issues of increased severity (4-5).

In order to address the increase in students seeking therapeutic services, counseling centers have had to modify services to benefit a larger number of learners. These methods include clients being seen less frequently if not in crises, utilization of group therapy, and the implementation of brief therapy models (Gallagher, 2013). Consultation and outreach services will also be an important aspect of the future counseling center's role. Although personal therapy will always be a focal point of counseling centers, counselors should be able to address the holistic needs of the college student (Davis & Humphrey, 2000, p. 32-33).

At this stage in higher education, college counseling has become a developed and established aspect of student affairs. Counseling centers have undergone a wide array of changes due to changes in culture, developments in the profession, and a variety of impactful events. It will continue to be a crucial aspect of the university's mission and the overall growth of student development services (Sharkin, 2011, p. 9).

The University Mission

Today's counseling center is intimately tied to the mission of today's campus. Counseling centers are a significant contributor to the retention and attrition efforts of universities. Through the appropriate use of university support systems, it is believed that students can be successful in their adjustment to college (Schwitzer, Grogan, Kaddoura, & Ochoa, 1993, p. 401). From the perspective of multiple constituencies, it is becoming increasingly important for university counseling centers to empirically demonstrate their role in student retention and their academic success. This need has increased the use of program evaluation and surveys related to student use/satisfaction as a method of tracking the success of student counseling services (Schwitzer, 1997). By implementing more intentional evaluation methods to assess the quality of services it will ultimately benefit students, institutional leaders, program directors, and clinicians/practitioners. These same principles can be applied to university health centers that supply multidisciplinary health services, including health education, and peer education (Schwitzer, 2002). These offices providing student services perform an important task in the overall success of the university. However, it is important that each is able to empirically demonstrate that they are achieving their goals in order to remain a supported piece of higher education.

Evidence-Based Treatment

Evidence-based treatments are therapeutically and empirically supported by thorough and significant research. According to Wampold (2001), there are essentially two types of assessments referred to as "absolute efficacy" and "relative efficacy" (Schwitzer & Rubin, 2011, p. 99). Research that demonstrates absolute efficacy would exhibit counseling or psychotherapy techniques that would result in improvement in

overall functioning. In an example of absolute efficacy, Wampold (2001) found that counseling demonstrated an 80% improvement rate for clients in general and was described as extraordinarily valuable. Research that demonstrates relative efficacy would compare the benefits of different therapeutic models. Depending upon the different presenting concerns from clients, treatment modalities might be more effective from one individual to the next. It is the clinician's professional responsibility to combine both types of evidence-based treatment models with their personal experiences as counselors in order to provide the most effective treatment for clients. This should be a continuous process that gradually improves over time as the clinician gains professional experience and empirical knowledge (Schwitzer & Rubin, 2011).

Support for therapeutic change remains an important topic of investigation. In general populations, early researchers established that counseling and psychotherapy are effective in outcome studies in the treatment of psychological issues and obtaining personal change (Hanna & Ritchie, 1995; Hanna & Puhakka, 1991). When compared to individuals who do not receive therapeutic interventions, it is shown that counseling has a significant impact on improving mental health related issues (Lambert and Cattani-Thompson, 1996).

It is also well established that college counseling centers are effective in the treatment of psychological concerns that interfere with normative functioning on a college campus (Nafziger, Couillard, & Smith, 1999). In order to aid students in coping with their psychological concerns and adjustment to college, counseling interventions provide an important mediation. In one study, students who were provided counseling services demonstrated significantly lower social and emotional concerns compared to

students who did not receive counseling interventions (Sharf & Bishop, 1973). Other benefits revealed by empirical research include: a significant decrease in mental health, social, and academic concerns (Nafziger, Couillard, & Smith, 1999). Recent research which investigated the effect of college counseling centers have reported positive results related to the personal problems of college clients (Minami et al, 2009; Vermeersch et al, 2004, Whipple et al, 2003). There is also evidence that supports the effectiveness of a brief model of counseling in a university counseling center designed to reduce mental health concerns (Nafziger, Couillard, & Smith, 1999; Vonk & Thyer, 1999).

However, there is still much unknown about what variables in therapy matter and demonstrate positive outcomes. The current study will address these contemporary questions of what makes counseling effective and will attempt to isolate specific therapeutic factors related to the efficacy of college counseling.

Mental Health and Academic Success

It is well established that mental health problems have the ability to negatively impact academic success in college students (Sharkin, 2004; Lee, Olson, Locke, Michelson, & Odes, 2009). For example, stress may serve as an impediment to successful academic performance. This stress can result in disruption of eating and sleeping patterns, difficulty focusing or preparing for class, and physical ailments. This stress can be caused by a variety of stimuli in and outside of the environment such as academic pressure, familial tension, social transitions, and financial worry (Hartley, 2011).

As Kitzrow (2003, p. 650-651) reported: “substance abuse disorders were most strongly associated with lower academic performance GPA.” A large portion of the college population is involved in problematic alcohol use (Swann, Sheran, & Phelps,

2014). According to Lowinger (2013), heavy drinking (such as binge drinking) accounts for a large percentage of students missing classes, failing to prepare for examinations, and failing to complete assignments on time (p. 829). These factors would inevitably decrease a student's probability of attaining academic success. As another illustration, Kitzrow (2003, p. 650-651) also reported: "high levels of psychological distress among college students were significantly related to academic performance." Students with higher levels of psychological distress were characterized as having higher test anxiety, lower academic self-efficacy, and less effective time management and use of study resources. They were also less likely to persist when faced with distraction or difficulty and less likely to use effective learning strategies such as seeking academic assistance" (p. 650-651). Similarly, Alschuler, Hoodin, & Byrd (2009) reported: "Behavioral problems directly affect a student's ability to perform well in school, with 14.6% of students indicating depression, anxiety, or seasonal affective disorder as causes of academic difficulty" (p. 177). Choi, Buskey, & Johnson (2010), also found that there was support between students' psychological distress and academic functioning. They also reported that treatment at a university counseling center can be influential in resolving personal concerns and can assist in attaining academic success. These authors also found a positive relation between personal functioning and academic functioning. Addressing the presenting personal problems of students through therapy can positively impact academic issues that may be occurring (p. 301).

Counseling Center Outcomes On Institutional Mission

Academic concerns are not normally primary presenting issue for college students at university counseling centers. However, there is an implicit idea that a critical

component of the counseling center's mission is to aid in the facilitation of academic success (Choi, Buskey, & Johnson, 2010, p. 297). According to Kitzrow (2003), "when students receive help for their psychological problems, counseling can have a positive impact on personal well-being, academic success, and retention" (p. 651). Additionally, "college administrators expect that the effects of counseling services will be reflected in college student academic performance and school adjustment" (Lee, Olson, Locke, Michelson, & Odes, 2009, p. 306).

Unfortunately, the degree to which university counseling centers help students attain academic success has not been documented clearly. For example, some research has shown a positive correlation between academic counseling and academic performance (Sharkin, 2004; Boyd et al., 1996). However, the results of these studies cannot be fully generalized to the examination of psychological, relational, and behavioral concerns (Lee, Olson, Locke, Michelson, & Odes, 2009, p. 306-307). Still, positive outcomes have been suggested. A study by Illovsky (1997), compared students receiving treatment in a university counseling center to those who were not receiving treatment. "The results showed that 75% of the students who received counseling services registered again in the following semester, whereas 68% of the students in the general population did" (Lee, Olson, Locke, Michelson, & Odes, 2009, p. 307). In another study, Turner and Berry (2000) reported that the retention rate (reenrollment) for students who received counseling was greater than the retention rate for the general student body (85% vs. 74%), whereas no differences were found in graduation rates between the two groups over a 6-year period" (Choi, Buskey, & Johnson, 2010, p. 298). However, other authors believe the Illovsky and Turner & Berry studies have ambiguous

findings, which make their conclusions difficult to generalize (Choi, Buskey, & Johnson, 2010, p. 298).

A study conducted by Lee, Olson, Locke, Michelson, & Odes (2009), examined the impact of counseling services on first-year and transfer college students' academic performance and retention. Their results indicated that the sample of students who received counseling had a significantly lower GPA than students who did not receive counseling—however, when controlling for pre-college academic success, this finding was not a significant relationship. Conversely, the relationship between students who received counseling was “significantly associated with student retention measured by third semester registration”—with or without controlling for pre-college academic success (p. 316). It appears that it can be said that counseling is beneficial in retention efforts, but there remains a lack of clarity as to the role of counseling in academic performance.

One unique challenge presented is in the evaluation of retention efforts. Although it is a university priority and mission to maintain their student population, it is the mental health professional's responsibility to remain neutral throughout. It is entirely possible that the best course of positive mental health outcomes would be for a particular student to withdraw from the university, take a leave of absence, or transfer to an alternative institution. It is the mental health professionals' responsibility to help facilitate the decision-making process of the student so that he or she may take the best course of action in his or her life. “When the effectiveness of counseling at counseling centers is evaluated, these institutional academic outcome variables should be used only in conjunction with other academic outcome criteria that are not only relevant to what

counselors do for students but also proximal to the psychological changes attributable to the counseling” (Choi, Buskey, & Johnson, 2010, p. 298).

In Choi, Buskey, & Johnson’s (2010) study, students who attended the university counseling center for treatment and reached clinical recovery had significantly more beneficial academic impact measure by academic functioning and perception of problem resolution. Clients who started in the “dysfunctional” group and reached clinical recovery (no longer “dysfunctional” at the conclusion of treatment) demonstrated the greatest level of improvement in academic functioning and academic persistence (p. 302).

Health Center Outcomes On Institutional Mission

The transition to higher education for students can also mean that there is a greater likelihood of engaging in unhealthy and/or dangerous behaviors. Research has shown that individuals in college increase their involvement in irregular sleeping patterns, substance use/abuse, and unprotected sex (Ruthig, Marrone, Hladkyj, & Robinson-Epp, 2011, p. 307-308). Alschuler, Hoodin, & Byrd (2009), note “the prevalence of psychological problems ranks high among all health problems in college and university settings. Depression (18.8%) and anxiety (11.5%) are ranked as the fourth and sixth most common health problems in the college population” (p. 177).

Approximately 50% of college students with mental health disorders begin to present signs of diagnosable psychiatric concerns while enrolled in college. Additionally, about a quarter of patients seeking treatment at a university health center met the set conditions for a mental health disorder (Alschuler, Hoodin, & Byrd, 2009). Those same researchers showed that many of the top-rated health concerns of college students—such as stress, sleep difficulties, and relationship difficulties—were directly relevant to psychological

issues that are commonly handled by a university counseling center. As a result, medical professionals have a responsibility to assess for psychological distress in case a referral needs to be made to a university counseling center while still respecting the concision of medical appointments (p. 177).

Other research demonstrated that poor health and engaging in unhealthy behaviors is directly correlated with subpar academic performance. For example, alcohol consumption and irregular sleeping patterns are two sets of behaviors in particular that have been demonstrated to have a negative relationship with academic success (Ruthig, Marrone, Hladkyj, & Robinson-Epp, 2011; Howell, Jahrig, & Powell, 2004; Presley & Pimental, 2006). Binge drinking in particular has been correlated with missing classes, poor test performance, and low GPA (Ruthig, Marrone, Hladkyj, & Robinson-Epp, 2011). A study by Ruthig, Marrone, Hladkyj, & Robinson-Epp (2011), revealed that female college student participants reported higher levels of stress, health symptoms, poorer nutrition, and less physical activity than their male counterparts. However, the male college student subjects reported higher levels of substance use and abuse. Over the length of an academic year, women college participants reported positive developments in health—such as perceived adjustment, reduced stress levels, and increase in physical activity—that were positively correlated with positive changes in academic performance, for example perceived academic success and final course grades.

Current Study

Mental health issues have a rich history in the university setting. As has been demonstrated in the related literature, there has been an influx of students who seek out mental health care for more severe presenting concerns. As a result, it is important to take

a closer look at this population and its growing importance in the field of higher education. As can be concluded from previous academic research, there is a very close relationship between mental health and students' ability to obtain academic success at a university. University counseling centers continue to grow in importance on college campuses by offering applicable interventions in response to the continual increase in frequency and severity of college learners' mental health concerns; as a result, it is important that they are able to assist in the overall mission of the university in order to continue justifying their place on campus. Consequently, the role of a university counseling center and its relationship to academic success needs to be demonstrated.

Similarly, university health centers need to demonstrate their role in the world of academia. This current study explores the relationship between these two offices, how they overlap and how they are different in their service to students and the relationship of provided services to academic success. A relative paucity of articles exists reporting joint outcomes between university health centers and university counseling centers. Although there is a substantial amount of research that addresses student success and other offices in student affairs, very few exist that integrate student success, utilization of college counseling services, and utilization of college health services. This study has the potential for assisting both college health and college mental health professionals in their work within higher education and collaboration for the betterment of the student population. This study will be guided by several research questions, which can be found directly below:

Phenomenology and Utilization of Services Pattern: Between Group Comparison

Research Question 1: To what degree is service placement (counseling center only, health center only, initial counseling center leading to dual services, initial health center leading to dual services) significantly associated with severity of diagnostic class, graduation within six years, and post-treatment GPA?

Utilization of Services Pattern: Health Center Only

Research Question 2: Is there a significant relationship between the number of health center sessions per client and number of newly initiated contacts of the health center for academic performance variables?

Research Question 3: Does group assignment (intake-only v. treatment group) and compliance with medication management predict graduation within six years for health center clients?

CHAPTER THREE

METHODOLOGY

The purpose of this chapter is to define the methodology, explain the research procedures, and present the research questions. This will include the following sections: sampling of participants, the setting, methods, research questions and hypotheses, data analysis, data collection, and limitations.

Participants

For this study, the sample is comprised of 2554 college students at a large, public southeastern university. For the group of counseling center only students, there are approximately 2,000 participants in the sample. For the health center only students, there are approximately 450 participants, and there are 70 individuals who represented the group of students who engaged in services from both departments. All participants have received counseling services from the university counseling center and/or health services from the university health center. Each participant received the first session of counseling between the academic years 2000-2001 through 2007-2008. For all participants in the study, information was only obtained from the records of students who explicitly agreed to sign an informed consent document upon their visit to the counseling center and/or health center. The informed consent document indicated that center records might be used for evaluation and research purposes.

All data received from institutional research were not originally masked. In order to guarantee anonymity, student ID numbers, social security numbers, and all other individual identifiers were immediately removed. Individual records from the counseling center and health center will receive a Final ID Number (FIDN), which was determined

by the researcher. Furthermore, the data were gathered confidentially and stored in a secure location within the university counseling center or university health center. Because it is a part of a larger project, the College of Education Human Subjects Research Committee approved this study as a continuation of the previous work. All ethical guidelines established by the committee were maintained. As a result of the data collection process, it was necessary to report the participant statistics in three distinctive groups 1) counseling center only clients 2) health center only clients and 3) clients who received both counseling and health center treatments.

Participants Statistics

Of the 2029 counseling center only participants who indicated their gender, 669 (33%) were male, while 1360 (67%) were female. For the health center only treatment group, 141 (31.1%) identified as male and 313 (68.9%) as female. Finally, for the combined treatment group of 71 participants, 20 (28.2%) identified as male and 51 (71.8%) as female. It does not appear that students were given the option to identify as a gender outside of male or female. Table 1 represents the age groups of the subjects. Ages are grouped together in sets of five through the 20's and in groups of 10 for subjects older than 30 years of age.

Table 1: Participant Demographics: Age ($N = 2554$)

| Characteristic | n | % |
|---------------------------------------|-----|------|
| Counseling Center Only ($n = 2029$) | | |
| 16-20 | 845 | 41.6 |
| 21-25 | 801 | 39.5 |
| 26-30 | 183 | 9.0 |
| 31-40 | 148 | 7.3 |
| 41-50 | 35 | 1.7 |
| 51-60 | 17 | 0.8 |
| Health Center Only ($n = 454$) | | |
| 16-20 | 207 | 45.7 |
| 21-25 | 152 | 33.4 |
| 26-30 | 60 | 13.1 |
| 31-40 | 22 | 4.7 |
| 41-50 | 13 | 2.8 |
| 51-60 | 0 | 0.0 |
| Combined Treatment ($n = 71$) | | |
| 16-20 | 22 | 31 |
| 21-25 | 32 | 45.1 |
| 26-30 | 9 | 12.6 |
| 31-40 | 8 | 11.2 |
| 41-50 | 0 | 0 |
| 51-60 | 0 | 0 |

Of the 2024 subjects who reported their race/ethnicity for counseling center only treatment, 525 (25.9%) identified as African American, 105 (5.2%) as Asian American, 1209 (59.6%) as Caucasian, 41 (2.0%) as International Student, 80 (3.9%) as Latina/Latino, 41 (2.0%) as Multiracial, 3 (0.1%) as Native American, and 20 (1.0%) as Other. For the 71 participants in the Combined Treatment Group, 12 (16.9%) identified as African American, 1 (1.4%) as Asian American, 51 (59.6%) as Caucasian, 1 (1.4%) as International Student, 3 (4.2%) as Latina/Latino, 2 (2.8%) as Multiracial, and 1 (1.4%) as Other. Institutional research did not provide an in-depth report on race/ethnicity for participants receiving health center only treatment. Of the 454 subjects, 442 (97.4%) were listed as “NA.”

Table 2 presents figures related to the number of academic credits for participants who received treatment from the counseling center only, health center only, and combined treatment.

Table 2: Participant Demographics: Academic Status Via Number of Credits (N = 2519)

| Characteristic | n | % |
|-----------------------------------|-----|------|
| Counseling Center Only (n = 1994) | | |
| Freshman (0-26 Credits) | 382 | 18.8 |
| Sophomore (27-58 Credits) | 392 | 19.3 |
| Junior (59-90 Credits) | 481 | 23.7 |
| Senior (91-120 Credits) | 485 | 23.9 |
| Graduate Student | 245 | 12.1 |
| Alumnus | 3 | 0.2 |
| Non Degree | 4 | 0.2 |
| Transfer | 2 | 0.1 |

| Characteristic | <i>n</i> | % |
|--------------------------------------|----------|------|
| Health Center Only (<i>n</i> = 454) | | |
| Freshman (0-26 Credits) | 5 | 1.1 |
| Sophomore (27-58 Credits) | 0 | 0.0 |
| Junior (59-90 Credits) | 4 | 0.9 |
| Senior (91-120 Credits) | 1 | 0.2 |
| Graduate Student | 15 | 3.3 |
| Alumnus | 0 | 0.0 |
| Non Degree | 0 | 0.0 |
| Transfer | 0 | 0.0 |
| NA | 429 | 94.5 |
| Combined Treatment (<i>n</i> = 71) | | |
| Freshman (0-26 Credits) | 6 | 8.5 |
| Sophomore (27-58 Credits) | 14 | 19.7 |
| Junior (59-90 Credits) | 20 | 28.2 |
| Senior (91-120 Credits) | 21 | 29.6 |
| Graduate Student | 10 | 14.1 |
| Alumnus | 0 | 0.0 |
| Non Degree | 0 | 0.0 |
| Transfer | 0 | 0.0 |

Similar to the race/ethnicity information, institutional research did not provide detailed information related to academic status for participants who received health center only treatment. Of the 454 health center only students, 429 (94.5%) were listed as

“NA.”

Of the counseling center only participants, 717 (35.3%) graduated within 6 years, while 614 (30.3%) did not. Of the health center only participants, 145 (31.9%) graduated within 6 years, while 163 (35.9%) did not. Of the participants who received treatment from both the counseling center and health center, 18 (25.4%) graduated within 6 years, while 27 (38.0%) did not. Compared to the other demographic information, there is a substantially large amount of data that was not reported by institutional research for graduation. Counseling center only students were missing participant information from 698 subjects (34.4%), health center only students were missing 146 subjects (32.2%), and combined treatment students were missing 26 subjects (36.6%).

The Setting

The setting for this study was a counseling center and a health center at a large, public southeastern university. Both the counseling center and health center report within the division of student engagement. The University Counseling Center provides comprehensive mental health services related to students' personal, academic, and holistic well-being concerns in the form of a number of different services including individual counseling, couples counseling, and outreach programs. Due to the session limits of individual counseling (10 sessions), students may be referred to group counseling, which does not have a session limit. Occasionally, students may be referred to local community resources for consequent and continued services. The University Health Center offers primary healthcare services such as assessment, diagnosis, and treatment of illnesses. The office also provides prevention services including fitness and nutrition counseling, stress management, and substance abuse prevention. Although

individuals that are capable of providing treatment for mental health staff the office, they do not have as many clinicians with psychotherapy training as a specialty.

Research Design

The study employed a non-experimental ex post facto descriptive design in which archival data were examined for the university that houses the counseling center and health center. Ex post facto (causal-comparative) research looks at the relationship between presently established groups. Because the researcher is not able to manipulate the independent variables, causal-comparative research design is an appropriate method of analysis for the study. A significant benefit of this method is its accessibility and convenience, especially when compared to many experimental approaches. This design allowed the researcher to collect a large amount of data in a relatively short amount of time to better understand the differences occurring between groups. However, there are inherent challenges to this tactic. Due to the lack of independent variable manipulation and no random assignment, the researcher cannot make causal inferences. As a result, conclusions for this research would need to be made cautiously (Erford, 2014).

Factors related to academic success for college students who attended mental health treatment in a university counseling center and/or a university health center were examined. Archival data were acquired from the university counseling center and health center records of students. These data included the following: gender, ethnicity, service placement, term of treatment initiation, number of sessions, students' reason for seeking services, and Global Assessment of Functioning (GAF) scores at intake and conclusion of treatment. Supplementary academic data were collected and matched to the research participants by the university's institutional research. These data included cumulative

grade point averages (GPA) per semester and successful degree completion within six years. A single dataset was constructed using the merged information from the three sources (university counseling center records, university health center records, and academic data from institutional research) in order to determine impact on students' academic outcomes.

Data Analysis

To provide exploratory data concerning students who utilized counseling services, frequency analyses were performed on gender, ethnicity, referral source, degree completion, and reason for seeking out counseling services. Effect size estimates were assessed for all variables that demonstrated statistical significance.

Three research questions underwent data analysis and tests for assumptions:

Question 1: For the first research question, a multivariate analysis of covariance (MANCOVA) was implemented to decipher the degree to which service placement (counseling center only, health center only, initial counseling center leading to dual services, versus initial health center leading to dual services) is significantly associated with severity of diagnostic class, graduation within six years, and post-treatment GPA. When there are multiple dependent variables to be assessed and the use of a covariate, MANCOVA is the best analysis to employ (Field, 2013). The independent variables were service access condition—counseling center only, health center only, initial counseling center leading to dual services, versus initial health center leading to dual services. The dependent variables were academic performance variables (post-treatment GPA and graduation within six years) and severity of diagnostic class. In order to reduce the error variance and accurately assess the impact of the independent variables, a covariate can be

utilized (Field, 2013). For this research question, pre-treatment GPA was entered as a covariate into the analysis. Assumptions were tested through Box's Test of Equality of Covariance and Levene's Test of Equality of Error Variances.

Question 2: For the second research question, a two-way multivariate analysis of covariance (two-way MANCOVA) was analyzed to determine if there was a significant relationship between the number of health center sessions and the number of newly initiated contacts of the health center for academic performance variables. Much like the previous question's use of a MANCOVA, a two-way MANCOVA was implemented for the same reasons as before but with the addition of multiple independent variables (Field, 2013). The independent variables were the number of health center sessions and number of newly initiated contacts. The dependent variables were the academic performance variables— post-treatment GPA and graduation within six years. For the same reasons indicated in question one, there was also a covariate for pre-treatment GPA in question two. Once again, Box's Test of Equality of Covariance and Levene's Test of Equality of Error Variances were used to test assumptions.

Question 3: For the third research question, logistic regression was implemented to see if group assignment and compliance with medication management predicts graduation within six years. Logistic regression assesses the predictive probability; it also involves categorical dependent variables and continuous or categorical independent variables—in this case of this study, all variables are categorical. This allows the researcher to assess the predictive nature of a combined set of variables or how predictive each can be individually (Field, 2013). The independent variables are the intake-only group and the treatment group. The dependent variables are graduation within six years.

Table 3 further outlines the research questions, independent and dependent variables, and data analysis methods.

Table 3: Research Questions and Data Analysis

| Research Questions | Independent Variables | Dependent Variables | Analysis |
|---|--|--|---|
| RQ1: To what degree is service placement (counseling center only, health center only, initial counseling center leading to dual services, versus initial health center leading to dual services) is significantly associated with severity of diagnostic class, graduation within six years, and post-treatment GPA? | Service access condition—counseling center only, health center only, initial counseling center leading to dual services, versus initial health center leading to dual services Covariate: pre-treatment GPA | Severity of diagnostic class and academic performance variables (graduation within six years and post-treatment GPA) | MANCOVA Tests for Assumptions: 1) Box's Test of Equality of Covariance Matrices 2) Levene's Test of Equality of Error Variances. |
| RQ2: Is there a significant relationship between the number of health center sessions per client and number of newly initiated contacts of the health center (number of times a student initially seeks out services) for academic performance variables? | Number of health center sessions and number of newly initiated contacts Covariate: pre-treatment GPA | Academic performance variables (graduation within six years and post-treatment GPA) | 2-Way MANCOVA Tests for Assumptions: 1) Box's Test of Equality of Covariance Matrices 2) Levene's Test of Equality of Error Variances. |
| RQ3: Does group assignment (intake-only v. treatment group) and compliance with med-management predict graduation within six years for health center clients? | Intake-only v. treatment group and compliance with med-management for health center clients | Graduation within six years | Logistic Regression |

Data Collection

Due to an archival dataset being used for this study, the vast majority of data collection was completed previously. Representatives employed in the university counseling center and university health center collected data from their respective centers' records from August 2007 to December 2008. The data are stored in a secure location within the university counseling center and health center. In 2013, institutional research provided data related to students' academic performance. Using the students' University Identification Number, the data from the three sources was matched and merged into one primary dataset. Following the merging of data, the university identification number of participants was deleted and replaced with a Final ID Number (FIDN).

Limitations

Internal Validity Threats

Internal validity is the degree to which the research design and the data it produces allow the researcher to draw correct conclusions about the relationship between the independent and dependent variables. Internal validity looks to give credence to the idea that the independent variables are linked to the dependent variables. It seeks to determine if there are possibly peripheral variables that have an effect with the dependent variables (Erford, 2014).

There are multiple potential threats to internal validity for this study. For example, threats to internal validity include maturation, regression, and attrition. Maturation is the degree to which research participants' physical and psychological development affects the results of the study. Due to this study looking at learners' student success over the

course of treatment, that could foreseeably take place over multiple years during a time of advanced development. There is a potential that an individual's academic growth and success could be the result of his or her normative human development. Regression represents the tendency of more severe scores to naturally regress to the mean over time. Individuals beginning treatment through counseling and/or health services might choose to seek out services when they are most academically challenged period as a student. As a result, there is a tendency to regress back to their mean scores in the future instead of it being the result of treatment interventions. Attrition is when research subjects drop out of the study resulting in an unclear understanding of the impact of treatment. This could have a direct impact on the perceived efficacy of the degree completion variable. Students could potentially drop out of the university for a variety of reasons outside of ineffective counseling and/or health services. Due to the use of a causal-comparative research design, there are additional internal validity threats related to the lack of randomization and inability to manipulate the variables and participants (Erford, 2014).

External Validity Threats

External validity is the degree to which to which the results can be generalized and disseminated to other circumstances or populations. It can be threatened by numerous factors (Erford, 2014). Due to this study being conducted at a singular large, public southeastern university, generalizability would be limited. Another limitation would be the varied sample sizes among the three comparison groups. Although the counseling center provided a list of participants that was approximately 2000 students over a 10-year span, the health center had far fewer students represented by the data collection from institutional research. There was also a smaller sample of approximately 70 students who

had received services from both centers. When looking to generalize the results of this study, it becomes far more challenging due to the low numbers.

There are also additional confounding variables, which are items that are not constant and are not being controlled. For example, this study is not able to control for therapist type and the variety of characteristics for each clinician, diagnosis and medications prior to entering the university, and type of health issues; these issues are particularly relevant to research question 2.

CHAPTER FOUR

RESULTS

The overarching purpose of this study was to 1) add to the academic literature concerning the efficacy of university counseling centers and university health centers and 2) assess the effectiveness between counseling center treatment, health center treatment, and combined treatments. Using archival data from a large, public southeastern university, this study utilized a non-experimental ex post facto design that incorporated quantitative data concerning multiple variables related to university health and mental health treatment. These variables included severity of diagnosis, graduation rates, GPA, and service placement (counseling center only, health center only, initial counseling center leading to dual services, initial health center leading to dual services). This chapter will include demographic statistics of the study participants, and provide results of the analyses for the research questions and hypotheses.

Data and Participant Statistics

The central population for this study was college students enrolled at a large, public southeastern university. In conjunction with an archival dataset, participant information and the variables for this study were gathered from official university records in collaboration with the counseling center, the health center, and institutional research. Overall, 2554 participants were included in the final dataset after the implementation of data cleaning. All confidential identifying information was recoded and/or removed.

Through university assistance, the researcher had access to demographic statistics including gender, age, race/ethnicity, credits related to academic standing, and whether or not the individual successfully graduated within six years. Due to the data being sourced

from three separate offices, it is necessary to report participant statistics by three categories 1) counseling center only clients 2) health center only clients and 3) clients who received both counseling and health center treatments.

Data Cleaning Procedures

Data cleaning procedures were initiated with the elimination of all potentially identifying information that would not be suitable for this study including names, social security numbers, and university identification numbers. Prior to running analyses, service placement and diagnostic severity were recoded. Originally, there were 119 counselor diagnostic impressions from both the counseling center and the health center. Using the National Survey of Counseling Center Directors (Gallagher, 2013), 119 diagnostic categories were categorized into four new classes due to the idea that certain diagnostic classes were reported to be more critical than other groups within a higher education setting. The results of that assessment, and the four classes are as follows:

- 1) Crisis (maximum severity) included “red flag” concerns (exempting substance-related issues).
- 2) Psychotherapeutic (high severity) incorporated counseling center director-driven pullouts for mood disorders, childhood issues, substance-related disorders, eating disorders, and personality disorders.
- 3) Intermediate (medium severity) encompassed the remaining childhood, mood, anxiety, substance, and eating disorders. It also included adjustment disorders, personality disorders, and all other classes of shared phenomenology/shared features.
- 4) Situational/Emerging (mild severity) comprised conditions that may be a focus of

clinical attention and any other additional conditions.

Table 4 identifies the 119 initial diagnoses list and their classification, and Table 5 displays the final recoding of those variables.

Additionally, the graduation within six years variable needed to be recoded from “no or yes” to “no = 0, and yes = 1” in order to properly run the analyses. Lastly, new pre- and post-treatment GPA variables were created in order to combine the previously separated data for counseling center participants and health center participants.

Table 4: *Initial Diagnoses and Their New Classifications (N = 119)*

Characteristic

Class 1: Maximum Severity Class (Crisis) (*n* = 8)

Brief Psychotic Disorder

Amnestic Disorder NOS

Mood Disorder Due to [General Medical Condition]

Anxiety Disorder Due to [General Medical Condition]

Delusional Disorder

Schizophrenia, Paranoid Type

Schizotypal Personality Disorder

Schizophrenia, Disorganized Type

Class 2: High Severity Class (Psychotherapeutic) (*n* = 40)

ADHD

ADHD, Predominantly Inattentive

Disruptive Behavior Disorder NOS

Conduct Disorder

Asperger's Disorder

Characteristic

Cannabis Dependence/Abuse

Cocaine Abuse

Opiate Dependence

Nicotine Dependence

Bipolar I Disorder NOS

Bipolar II Disorder

Bipolar I Disorder, Most Recent Episode Manic, in Partial Remission

Bipolar I Disorder, Most Recent Episode Manic, Moderate

Bipolar I Disorder, Single Manic Episode, In Partial Remission

Bipolar I Disorder, Most Recent Episode Manic, Hypomanic

Bipolar I Disorder, Most Recent Episode Depressed, Unspecified

Bipolar I Disorder, Most Recent Episode Depressed, In Partial Remission

Bipolar I Disorder, Most Recent Episode Mixed, Mild

Bipolar I Disorder, Most Recent Episode Depressed, Moderate

Bulimia Nervosa, Purging

Bulimia Nervosa, Non-Purging

Anorexia Nervosa

Major Depressive Disorder, Recurrent, Severe Without Psychotic Behavior

Major Depressive Disorder, Recurrent, Severe With Psychotic

Major Depressive Disorder, Recurrent, Mild

Major Depressive Disorder, Recurrent, Moderate

Major Depressive Disorder, Recurrent, In Partial Remission

Major Depressive Disorder, Recurrent, In Full Remission

Characteristic

Major Depressive Disorder, Recurrent, Unspecified

Major Depressive Disorder, Single Episode, Moderate

Major Depressive Disorder, Single Episode, Unspecified

Major Depressive Disorder, Single Episode, Mild

Major Depressive Disorder, Single Episode, In Partial Remission

Major Depressive Disorder, Single Episode, In Full Remission

Major Depressive Disorder, Single Episode, Severe Without Psychotic

Acute Stress Disorder

Posttraumatic Stress Disorder

Borderline Personality Disorder

Polysubstance Dependence

Alcohol Abuse/Dependence

Class 3: Medium Severity Class (Intermediate) ($n = 51$)

Learning Disability

Learning Disorder NOS

Mathematics Disorder

Tourette's Disorder

Female Orgasmic Disorder

Female Sexual Dysfunction Due to [General Medical Condition]

Male Orgasmic Disorder

Sexual Arousal Disorder

Sexual Disorder NOS

Gender Identity Disorder

Characteristic

Cyclothymic Disorder

Intermittent Explosive Disorder

Eating Disorder NOS

Binge-Eating/Purging Type

Somatoform Disorder NOS

Impulse Control Disorder NOS

Obsessive Compulsive Disorder

Obsessive Compulsive Personality Disorder

Mood Disorder NOS

Depressive Disorder NOS

Alcohol-Induced Mood Disorder

Generalized Anxiety Disorder

Anxiety Disorder NOS

Substance Induced Anxiety Disorder

Panic Disorder

Panic Disorder with Agoraphobia

Social Phobia

Specific Phobia

Adjustment Disorder Unspecified

Adjustment Disorder with Anxiety

Adjustment Disorder with Mixed Anxiety and Depressed Mood

Adjustment Disorder with Depressed Mood

Adjustment Disorder with Mixed Disturbance Emotions and Conduct

Characteristic

Narcissistic Personality Disorder

Personality Disorder Not Otherwise Specified

Avoidant Personality Disorder

Antisocial Personality Disorder

Adult Antisocial Behavior

Factitious Disorder with Predominantly Psychological Signs

Dysthymic Disorder

Other (or Unknown) Substance-Related Disorder NOS

Alcohol-Related Disorder NOS

Alcohol Intoxication

Primary Insomnia

Dyssomnia

Hypersomnia

Somnambulism Sleep Disorder

Hypochondriasis/Body Dysmorphic Disorder

Disorder of Written Expression

Class 4: Mild Severity Class (Situational/Emerging) ($n = 21$)

Tension Headache/Cephalalgia

Sexual Abuse of Child (If Focus of Attention is on Victim)

Physical Abuse of Child (If Focus of Attention is on Victim)

Neglect of Child

Stress Reaction

Characteristic

Acculturation Problem

Physical Abuse of Adult (If Focus of Attention is on Victim)

Physical/Sexual Abuse of Adult (By Partner)

Sexual Abuse of Adult (If Focus of Attention is on Victim)

Phase of Life Problem

Identity Problem

Partner Relational Problem

Sibling Relational Problem

Relational Problem NOS

Parent-Child Relational Problem

Relational Problem Related to a Mental or General Medical Condition

Academic Problem

Bereavement

Occupational Problem

Noncompliance with Treatment

Post-concussion Syndrome

Table 5: *Final Recoding of Service Placement and Diagnostic Severity*

| Variable | Level | Recode |
|---------------------|--------------------------|-------------------------------------|
| Service Placement | Counseling Center Only | 1 = CC Only |
| | Health Center Only | 2 = HC Only |
| | Counseling to Health | 3 = CC → HC |
| | Health to Counseling | 4 = HC → CC |
| | Combined Undisclosed | 5 = Combined treatment, undisclosed |
| Diagnostic Severity | Maximum Severity Class | 1 = Class 1, Crisis |
| | High Severity Class | 2 = Class 2, Psychotherapeutic |
| | Medium Severity Class | 3 = Class 3, Intermediate |
| | Mild Severity Class | 4 = Class 4, Situational/Emerging |
| | High & Medium Severity | 5 = Class 2 and 3 |
| | Medium & Low Severity | 6 = Class 3 and 4 |
| | High, Medium, and Mild | 7 = Class 2, 3, and 4 |
| | High and Low | 8 = Class 2 and 4 |
| | Crisis, High, and Low | 9 = Class 1, 2, and 4 |
| | Crisis and Low | 10 = Class 1 and 4 |
| | Crisis and High | 11 = Class 1 and 2 |
| | Crisis and Medium | 12 = Class 1 and 3 |
| | Crisis, Medium, and Low | 13 = Class 1, 3, and 4 |
| | Crisis, High, and Medium | 14 = Class 1, 2, and 3 |
| | Missing Data Class | 999 = Missing Data |

Summary of Demographic Information

Combining data across the three treatment groups, the majority of the participants were female students at 67.5% ($n = 1724$). Those identifying as White represented the largest racial/ethnic population at 1,264 students (49.6%). The next two largest ethnicities reported were African Americans (21.1%) and Asian Americans (4.3%). Unsurprisingly, the vast majority of the sample came from the undergraduate population. Starting with first year students, there was an increase in population percentage for each subsequent undergraduate year reaching a height with 507 students (20.1%) being classified as seniors. Similarly, the ages of the participants were in line with the typical college-aged population. Of the 2554 students included in the survey, 1074 (42.1%) were between the ages of 16-20, and 985 (38.7%) were between the ages of 21-25. Lastly, out of the 1,331 participants with graduation data, the majority of the sample successfully graduated within six years ($n = 880$).

Research Question One

A multivariate analysis of covariance (MANCOVA) was conducted to evaluate the dependent variables of severity of diagnostic class and academic performance variables—successful graduation within six years and post-treatment GPA. The independent variable was service access condition—counseling center only, health center only, initial counseling center leading to dual services, versus initial health center leading to dual services.

For the purpose of this study, two primary descriptive statistics will be reported. The first is data related to the number of participants per service placement. For the 841 students that were included in this analysis, there were 730 (86.8%) counseling center

only clients, 93 (11.1%) health center only clients, 6 (0.7%) who received counseling treatment prior to health center treatment, and 12 (1.4%) who received health center treatment prior to counseling treatment. This would also indicate that a substantial number of participants were missing post-treatment GPA. Of the original sample of 2554 participants, 1713 (67.1%) had missing data from the university's institutional research.

The second set of descriptive statistics is the number of participants per diagnostic class via service placement. This information is summarized in Table 6.

Table 6: *Descriptive Statistics for Participants Per Diagnostic Class Via Service Placement (N = 2554)*

| Characteristic | <i>n</i> | % |
|---|----------|------|
| Counseling Center Only (<i>n</i> = 2029) | | |
| Maximum Severity Class (Crisis) | 2 | 0.1 |
| High Severity Class | 103 | 5.1 |
| Medium Severity Class | 213 | 10.5 |
| Mild Severity Class | 612 | 30.2 |
| High and Medium Severity | 97 | 4.8 |
| Medium and Mild Severity | 593 | 29.2 |
| High, Medium, and Mild | 82 | 4.0 |
| High and Mild Severity | 267 | 13.2 |
| Crisis, High, and Mild | 3 | 0.1 |
| Crisis and Mild Severity | 4 | 0.2 |
| Crisis and High Severity | 2 | 0.1 |
| Crisis and Medium Severity | 4 | 0.2 |
| Crisis, Medium, and Mild | 1 | 0.0 |

| Characteristic | <i>n</i> | % |
|---|----------|------|
| Health Center Only (<i>n</i> = 454) | | |
| High Severity Class | 127 | 28.0 |
| Medium Severity Class | 195 | 43.0 |
| Mild Severity Class | 36 | 7.9 |
| High and Medium Severity | 53 | 11.7 |
| Medium and Mild Severity | 32 | 7.0 |
| High, Medium, and Mild | 5 | 1.1 |
| High and Mild Severity | 1 | 0.2 |
| Crisis, High, and Medium | 1 | 0.2 |
| Counseling Treatment Prior to Health Treatment (<i>n</i> = 18) | | |
| High Severity Class | 1 | 5.6 |
| Medium Severity Class | 2 | 11.1 |
| Mild Severity Class | 6 | 33.3 |
| High and Medium Severity | 2 | 11.1 |
| Medium and Mild Severity | 5 | 27.8 |
| High and Mild Severity | 2 | 11.1 |
| Health Treatment Prior to Counseling Treatment (<i>n</i> = 24) | | |
| High Severity Class | 2 | 8.3 |
| Medium Severity Class | 1 | 4.2 |
| High and Medium Severity | 5 | 20.8 |
| Medium and Mild Severity | 5 | 20.8 |
| High, Medium, and Mild | 9 | 37.5 |
| High and Mild | 2 | 8.3 |

Controlling for pre-treatment GPA as a covariate, these results led the researcher to conclude that there was a non-significant effect on severity of diagnostic class, $F(4, 848) = .36, p = .84$, graduation within six years, $F(4, 848) = .13, p = .97$, and post-treatment GPA, $F(4, 848) = .74, p = .56$. As a result, it did not support the hypothesis that there would be a significant relationship between service placement, severity of diagnostic class, and the academic performance variables. A summary of further details related to the results of the MANCOVA can be found in Table 7.

Table 7: *Summary of MANCOVA, Diagnostistic Severity, Graduation Within Six Years, and Post-Treatment GPA*

| | SS | df | MS | F | p | Partial η^2 | Observed Power* |
|-----------------------------|----------|----|---------|-----|-----|------------------|-----------------|
| Diagnostic Class & Severity | 29442.41 | 4 | 7360.60 | .36 | .84 | .00 | .13 |
| Graduation Within Six Years | .17 | 4 | .04 | .13 | .97 | .00 | .08 |
| Post-Treatment GPA | .44 | 4 | .11 | .74 | .56 | .00 | .24 |

Note. SS = Type III Sum of Squares; MS = Mean Square

*Computed using alpha = .05

Furthermore, a summary of correlations among the dependent variables—severity of diagnostic class and academic performance variables—can be found in Table 8.

Table 8: *Correlations Among Diagnostic Class & Severity, Graduation Within Six Years, and Post-Treatment GPA*

| | Graduation Within Six Years | Post-Treatment GPA |
|--------------------------------|--------------------------------|-----------------------|
| Diagnostic Class & Severity | -.03 | -.03 |
| Graduation Within Six Years | | .39** |

Note. ** $p < .01$

The researcher tested for assumptions in two distinctive ways. The first was Box's Test of Equality of Covariance. Box's Test did demonstrate significance across the dependent variables ($F = 9.75$; $p = .00$). Due to $p < .001$, the assumption of homogeneity was not secured due to the covariance matrices being significantly different. According to Field (2013), "the effect of violating this assumption is unclear" (p. 604). As a result of the relatively large sample size of the study, the test might have found significance "even when covariance matrices are relatively similar" (p. 604). The second test was Levene's Test of Equality of Error Variances. Levene's Test, across all dependent variables, revealed non-significance for severity of diagnostic class ($F = 1.24$; $p = .29$), successful graduation within six years ($F = .16$; $p = .96$), and post-treatment GPA ($F = .69$; $p = .60$). This would mean that the homogeneity of variance assumption is tenable, which is beneficial to having a robust model.

The results indicate that having pre-treatment GPA was beneficial to the model. There showed a significant association between pre-treatment GPA and graduation within six years ($p < .001$; $\eta^2 = .10$; Observed Power = 1.00) as well as post-treatment GPA ($p < .001$; $\eta^2 = .80$; Observed Power = 1.00). Out of the 958 participants that had data related to the covariate of cumulative GPA prior to the semester of counseling and/or health

center treatment, there were 840 (87.7%) counseling center only clients, 100 (10.4%) health center only participants, 6 (0.6%) subjects who received counseling treatment prior to health center treatment, and 12 (1.3%) individuals who received health center treatment prior to counseling treatment. Similar to the concerns with post-treatment GPA, there was a substantial amount of information not provided by institutional research. Although there was less missing information, 1,596 students (62.5%) were not included in the sample due to missing data. Further information related to the means and standard deviations for pre-treatment GPA and post-treatment GPA can be found in Table 9.

Table 9: *Pre-Treatment GPA & Post-Treatment GPA Mean Scores and Standard Deviations*

| | Pre-GPA | | Post-GPA | |
|------------------------|----------|-----------|----------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Service Placement | | | | |
| Counseling Center Only | 2.58 | .93 | 2.60 | .87 |
| Health Center Only | 2.72 | .84 | 2.74 | .74 |
| Counseling to Health | 2.88 | .64 | 2.84 | .65 |
| Health to Counseling | 2.72 | .94 | 2.68 | .94 |

Research Question Two

A two-way multivariate analysis of covariance (MANCOVA) was performed on the second question to evaluate the dependent academic performance variables—successful graduation within six years and post-treatment GPA. The independent variables were the number of health center sessions and the number of health center newly initiated contacts (health center courses). Table 10 and Table 11 include the descriptive statistics and frequencies for the two independent variables.

Table 10: *Descriptive Statistics for Independent Variables, Number of Health Center Visits and Number of Health Center Courses*

| | <i>M</i> | <i>Mdn</i> | <i>Mo</i> | <i>SD</i> |
|---------------------------------|----------|------------|-----------|-----------|
| Number of Health Center Visits | 13.21 | 11.00 | 3 | 10.602 |
| Number of Health Center Courses | 2.72 | 2.00 | 1 | 1.532 |

Table 11: *Frequencies for Independent Variables, Number of Health Center Visits and Number of Health Center Courses*

| Characteristic | <i>n</i> | % |
|--|----------|------|
| Health Center Visits (<i>n</i> = 119) | | |
| 1 Visit | 7 | 5.9 |
| 2 Visits | 4 | 3.4 |
| 3 Visits | 16 | 13.4 |
| 4 Visits | 5 | 4.2 |
| 5 Visits | 6 | 5.0 |
| 6 Visits | 8 | 6.7 |
| 7 Visits | 9 | 7.6 |
| 8 Visits | 6 | 5.0 |
| 9 Visits | 8 | 6.7 |
| 10 Visits | 4 | 3.4 |
| 11 Visits | 4 | 3.4 |
| 13 Visits | 2 | 1.7 |
| 14 Visits | 4 | 3.4 |
| 15 Visits | 3 | 2.5 |
| 16 Visits | 7 | 5.9 |
| 17 Visits | 5 | 4.2 |

| Characteristic | <i>n</i> | % |
|---|----------|------|
| 18 Visits | 4 | 3.4 |
| 19 Visits | 4 | 3.4 |
| 20 Visits | 1 | 1.0 |
| 21 Visits | 3 | 2.5 |
| 22 Visits | 1 | 1.0 |
| 23 Visits | 1 | 1.0 |
| 25 Visits | 1 | 1.0 |
| 27 Visits | 2 | 1.7 |
| 28 Visits | 1 | 1.0 |
| 31 Visits | 1 | 1.0 |
| 32 Visits | 1 | 1.0 |
| 33 Visits | 1 | 1.0 |
| Health Center Courses (<i>n</i> = 127) | | |
| 1 Course | 26 | 20.5 |
| 2 Courses | 41 | 32.3 |
| 3 Courses | 28 | 22.0 |
| 4 Courses | 13 | 10.2 |
| 5 Courses | 12 | 9.4 |
| 6 Courses | 7 | 5.5 |

Again controlling for pre-treatment GPA as a covariate, the results indicated that there was a non-significant effect of number of health center sessions on graduation within six years, $F(69, 53) = 1.36, p = .16$ and post-treatment GPA, $F(69, 53) = .77, p =$

.78 (see Table 12).

Table 12: Summary of Two-Way MANCOVA: Number of Health Center Sessions

| | SS | df | MS | <i>F</i> | <i>p</i> | Partial η^2 | Observed Power* |
|-----------------------------|------|----|-----|----------|----------|------------------|-----------------|
| Graduation Within Six Years | 7.96 | 31 | .26 | 1.36 | .16 | .45 | .88 |
| Post-Treatment GPA | 3.98 | 31 | .13 | .77 | .78 | .31 | .57 |

Note. SS = Type III Sum of Squares; MS = Mean Square

*Computed using alpha = .05

Furthermore, there was also a non-significant effect of number of health center courses on graduation within six years, $F(69, 53) = 1.12, p = .36$ and post-treatment GPA, $F(69, 53) = .54, p = .78$ (see Table 13).

Table 13: Summary of Two-Way MANCOVA: Number of Health Center Courses

| | SS | df | MS | <i>F</i> | <i>p</i> | Partial η^2 | Observed Power* |
|-----------------------------|------|----|-----|----------|----------|------------------|-----------------|
| Graduation Within Six Years | 1.27 | 6 | .21 | 1.12 | .36 | .11 | .40 |
| Post-Treatment GPA | .54 | 6 | .09 | .54 | .78 | .06 | .20 |

Note. SS = Type III Sum of Squares; MS = Mean Square

*Computed using alpha = .05

Intersecting the independent variables of number of health center sessions and number of health center courses found a non-significant relationship for number of health center courses on graduation within six years, $F(69, 53) = .78, p = .78$ and post-treatment GPA, $F(69, 53) = .45, p = .99$. As a result, the null hypothesis was accepted (see Table 14).

Table 14: *Summary of Two-Way MANCOVA: Intersection of Graduation Within Six Years and Post-Treatment GPA*

| | SS | df | MS | <i>F</i> | <i>p</i> | Partial η^2 | Observed Power* |
|-----------------------------|------|----|-----|----------|----------|------------------|-----------------|
| Graduation Within Six Years | 4.68 | 32 | .15 | .78 | .78 | .32 | .58 |
| Post-Treatment GPA | 2.41 | 32 | .08 | .45 | .99 | .22 | .32 |

Note. SS = Type III Sum of Squares; MS = Mean Square

*Computed using alpha = .05

Assumptions were tested through Box's Test of Equality of Covariance and Levene's Test of Equality of Error Variances. Assessing for homogeneity of variance, Box's Test did not demonstrate significance ($F = .96$; $p = .52$) meaning there was not a violation. Levene's Test partially met non-significance related to the equality of variances assumption. Post-treatment GPA ($F = .80$; $p = .80$) did not appear to be significant; however, graduation within six years ($F = 2.38$; $p = .00$) did indicate significance.

Research Question Three

A logistic regression was conducted to evaluate graduation within six years using predictor variables. The independent predictor variables were whether the subject returned to treatment post-intake (entered as *hreturn* in SPSS) and compliance with medication management (entered as *hmedmang* in SPSS). The dependent variable was graduation within six years.

The complete model with two predictors was found to be statistically significant. This would indicate that the model of group assignment and medication management was able to successfully predict graduation within six years. As a result, the null hypothesis is rejected. According to the model's summary statistics, the overall accuracy of the weighted average for graduation within six years was 55.8%. This would be indicative of

the concept that there are other predictors—outside of the variables in this question—for graduation (Field, 2013). The results demonstrate that returning for treatment ($p = .04$) and medication management ($p = .04$) are both significant predictors of graduation within six years.

Additionally, collinearity diagnostics were run for the analysis. The study found no evidence of multicollinearity for either medication management (Tol = .732, VIF = 1.367) or returning to health center for treatment (Tol = .732, VIF = 1.367), meaning the predictor variables were not too highly correlated (Field, 2013).

The odds ratio was predictive for group assignment (.53) and medication management (1.94). Because the odds ratio for medication management was greater than 1, it would indicate that the odds for graduation within six years increase as medication management increases. In other words, learners that participate in medication management are 1.94 times more likely to graduate within six years than those who do not. However since group assignment's odds ratio was less than 1, it did not have a positively correlated relationship with graduation within six years.

By dividing the model chi-square (5.53) over the -2 Log Likelihood (487.30), it calculates the effect size estimate for the model as .011, which is on a range of 1.0-0.0. This would mean the effect accounts for less than 1% of the total variance (Field, 2013). Table 15 further presents the logistic regression analysis including the Wald statistics, Nagelkerke's R^2 , Hosmer and Lemeshow goodness-of-fit test results, and confidence intervals.

Table 15: *Logistic Regression Analysis for Group Assignment and Medication Management*

| | β | SE | Wald | df | p | Odds | 95% CI | |
|---------------------|---------|------|------|----|-----|-------|--------|-------|
| | | | | | | | Lower | Upper |
| Step 1 ^a | | | | | | | | |
| hreturn(1) | -0.64 | 0.32 | 4.06 | 1 | .04 | 0.526 | -1.31 | -0.01 |
| hmedmang(1) | 0.66 | 0.33 | 4.08 | 1 | .04 | 1.940 | 0.05 | 1.33 |
| Constant | 0.16 | 0.12 | 1.62 | 1 | .20 | 1.170 | -0.90 | 0.407 |

Cox & Snell $R^2 = .02$, Nagelkerke $R^2 = .02$

Hosmer & Lemeshow Goodness of Fit Test = $X^2=5.53$, $p = .011$, $df = 2$.

Note. SE = beta standard error; CI = confidence interval (bootstrapped, see Field, 2013). $p < .05$ indicates significance.

CHAPTER FIVE

DISCUSSION

Chapter one overviewed a prospectus including a statement of the problem, the purpose and significance of the research, the theoretical framework for the dissertation, and the research questions that would drive the study. Chapter two established the known literature related to the study such as college student mental health needs, a brief history on the background of the problem, the relationship between mental health and academic success, and the impact of health centers and counseling centers on the overall institutional mission. Chapter three proposed the methodology that would be implemented in order to successfully answer the research questions by detailing the research design, data collection, and data analysis while covering the participant demographics and study limitations. Chapter four presented the findings of the completed research, which included descriptive statistics, raw data, and tables to organize the information clearly and concisely. The fifth chapter will give meaning to the results displayed in Chapter 4 by providing a summary of the completed study, practical implications for counseling professionals based upon the results, and implications for further research.

Review of the Study

This study examined the impact of student academic success for learners who received treatment at a university counseling center and/or a university health center. The purpose was to contribute to the existing literature related to the efficacy of counseling centers and health centers, while also comparing the efficacy of these departments within the division of student affairs. The study was conducted through the utilization of an

archival dataset comprised of data collected by a university counseling center, university health center, and institutional research at a large, public institution. The completed dataset included a total of 2554 student participants—approximately 2000 received treatment from the counseling center only, approximately 450 from the health center only, and approximately 70 received a combination of services. Implementing a MANCOVA, two-way MANCOVA, and linear regression, the following questions were addressed:

Phenomenology and Utilization of Services Pattern: Between Group Comparison

Research Question 1: To what degree is service placement (counseling center only, health center only, initial counseling center leading to dual services, initial health center leading to dual services) significantly associated with severity of diagnostic class, graduation within six years, and post-treatment GPA?

Hypothesis 1: The severity of diagnostic class will be greater for those initially entering the health center leading to dual services than those initially entering the counseling center leading to dual services, counseling center only, and health center only.

Utilization of Services Pattern: Health Center Only

Research Question 2: Is there a significant relationship between the number of health center sessions per client and number of newly initiated contacts of the health center (number of times a student initially seeks out services) for academic performance variables?

Hypothesis 2: The number of health center sessions and newly initiated contacts will significantly predict students' academic performance variables. The more health

center sessions and newly initiated contacts, the greater improvement post-treatment GPA, and the more likely they are to obtain a degree.

Research Question 3: Does group assignment (intake-only v. treatment group) and compliance with medication management predict graduation within six years for health center clients?

Hypothesis 3: Participants who received health center treatment post-intake and were compliant with medication management will be more likely to graduate within six years than participants who had only an intake session and did not enroll in the medication management.

Major Findings

For the first question, the study assessed the predictive quality of service placement on severity of diagnosis, graduation within six years, and post-treatment GPA. The results did not indicate a significant relationship between the independent variable and the outcome variables. However, this may be for reasons outside of a lack correlational relationship. Due to the drastically weighted sample sizes for the four comparison groups within the predictive variable and missing GPA information, it could have potentially altered the results of the MANCOVA that was conducted.

The findings from the two-way MANCOVA conducted for the second research question indicated that the number of sessions that a learner participated in did not have a significant impact on graduating within six years or post-treatment GPA. Similarly, the number of newly initiated contacts or courses that the client started did not show significance on the two outcome variables. This would support the policy of time-limited treatment and brief therapy within college counseling and health centers.

A major finding in this study was for those that came to the health center. Based on the results of the third research question, clients that sought further treatment or engaged in medication management experienced a significant increase in their likelihood of graduation. When students came to the university counseling center and/or the university health center—regardless of level of severity—if they follow through with treatment from intake, it increases their likelihood of graduation. Medication management, in particular, was shown to be exceptionally helpful accomplishing degree completion.

Implications for Practice

Directors of University Counseling Centers and Health Centers

Although the education and popular understanding of psychotherapy has increased over time, there is still misinformation and stigma that inhibit clients from obtaining treatment. In particular, participating in medication management may have such a negative perception that it could lead to an individual either not initiating the medical treatment they might need or failing to completely adhere to the process (Givens, Katz, Bellamy, & Holmes, 2007). In a recent study of individuals being treated with antipsychotic medication, approximately 40% did not completely adhere to medication management. As a result, this increases the likelihood of individuals being re-hospitalized (Corrigan, 2004). The directors of university counseling and health centers can be further supported by the results of this study that those who engage in medication management will have a significantly positive impact on the probability of graduating within six years. For the leaders in these departments, they have the opportunity to inform the student population in and outside of the office. Within the counseling and/or health centers, they

can train and encourage their clinicians to make a concerted effort to inform their clients of the potential benefits of medication. Additionally, these leaders could initiate programming that would inform students about the benefits of participating in counseling and include information about the realities of medication management, which might reduce or eliminate the stigma for some learners (Corrigan, 2004). This could even potentially be accomplished through the collaboration of other departments within student affairs such as the office of residence life.

Brief therapy has been shown to be effective with a wide variety of clients and presenting issues. However time-limited treatment is of often-used solution because it is also particularly helpful on a university campus due to limited resources (Cooper & Archer, 1999; Ghetie, 2007). Time limited treatment refers to the process of establishing session limits with clients prior to the start of treatment. As a result of the increasing number of learners seeking out treatment in higher education, it is common that there are not enough clinicians available to see each client as soon as possible. Time limited treatment is often done in order to reduce or even eliminate the need for a waitlist in university counseling centers. This research would essentially support this model because it would indicate that time-limited treatment does not negatively impact student development if the number sessions or how many courses does not matter. In fact, it would be in line with the previously established research that indicated there were no significant difference between long-term therapy and brief therapy, especially considering most therapeutic change tends to occur in the first few sessions (Cooper & Archer, 1999).

Staff of University Counseling Centers and Health Centers

It is important that both university counseling center and university health center staffs are trained and that students are marketed on the importance of following through after intake with treatment. Similarly, there should be intentional effort made to educate the study body about the benefits of participating in medication management.

Overall, clinicians should work to increase the probability of having their clients return after the initial session. One critical factor in doing this would be to establish treatment plans that can be reasonably completed. Treatment plans are used to establish the goals and a potential timeline for completing therapeutic objectives. Based on a study conducted by Tracy (1977), it was shown that individuals were more likely to return to treatment if their intake session included an explicit and collaborative process of goal construction and treatment planning. By grounding the therapeutic process with tangible and measurable outcomes, it increases the level of investment from the clients.

Another way to assist students and increase the likelihood of returning for treatment after intake would be to have staff members call students prior to sessions as a reminder. Depending on staff availability, this could be done rather often or it could only be done once prior to the first post-intake session. This could potentially help build rapport between the client and the clinician and help remove barriers for students to return to the center.

The importance of the relationship between the counselor and the client has been previously established. Specifically, it has been shown that clients who return to counseling after the intake session often remain in therapy until the completion of treatment. In other words, the first session is the one that is most commonly associated with client dropout

(DeFife & Hilsenroth, 2011). These ideas tie into engagement quotient, which is a concept established by Tryon (1985). Essentially, engagement quotient examines the varied level of engagement some counselors experience compared to others. It has been established that there is a legitimate ability for counselors to engage their clients in a more meaningful way that makes it more likely she or he will return for treatment after intake and remain in treatment. Based on this concept and the additional support based on the results of the study, this study would indicate that university counseling center and health center clinicians should strive to obtain the largest engagement quotient possible.

As mentioned in the previous section on the implications for counseling and health center directors, it will be important to educate the university's students on the realities and benefits of participating in medication management. It will likely be the responsibilities of the staffs of those offices to design and implement the programing outside of the office in order to take a proactive approach. Additionally, clients tend to only interact with their clinician in the counseling and health centers. The clinicians will need to be accountable for prompting those conversations and informing their students about the potential profits of medication. According to Corrigan (2004), education has been shown to promote positive perceptions of counseling and actively reduce the level of stigma associated with mental illness, especially when empirical evidence is supplements the educational process.

Institutional Leaders

Institutional leaders and university vice presidents are frequently interested in making sure programs directly tie into the institutional mission. This may often manifest through resource allocation. It is important that each office is able to clearly and

convincingly make the case that their department is contributing to the overall mission of the university, which has resulted in the use of program evaluation methods to demonstrate the efficacy of their work (Schwitzer, 1997). Many departments within the division of student affairs tend to suffer from being understaffed and having their resources stretched thin. For both the university counseling center and the university health center, it is apparent based on the results of the study that engaging in treatment compared to only an intake session increases the likelihood of a learner being able to successfully complete her or his degree requirements. Even more convincingly based on the outcomes of the statistical analysis, graduation within six years is positively correlated with participation with medication management. Ideally, this could encourage institutional leaders and university vice presidents of student affairs to invest further in the support of mental health initiatives for their students. This could manifest itself in acquiring more new mental health clinicians for both counseling centers and health centers.

Depending upon the size and resources available at an institution, a psychiatrist and medication management may or may not be readily available. However, sometimes treatment requires a referral out to community services in order to appropriately support the client. Off-campus referrals are usually employed because of limited human resources and severity of client diagnosis. Unfortunately, this is also an additional barrier for students that are seeking out mental health services. It has been documented that 40% of students that are referred out to the community never successfully connect with their off-campus mental health provider. Often, this is a result of limited financial support for the client (Owen, Devdas, & Rodolfa, 2007). Between this previous study's results and the

findings for this research, it would be beneficial to acknowledge the importance of supply counseling centers and health centers with the necessary personnel to address the needs of students. Otherwise, a large collection of the student population will never receive the necessary treatment and their likelihood of successful graduation will be reduced as a result.

University Students and Families

There currently still exists a stigma that those who suffer mental health challenges or seek out psychotherapeutic treatment are socially undesirable or unacceptable. Those who reach out for help are more likely to be viewed as emotional unstable or dangerous compared to those that never received treatment. In order to avoid being labeled as “crazy,” people are willing to deny themselves the necessary treatment (Vogel, Wade, & Hackler, 2007). However, there are positive changes that are taking place, at least when it comes to the college student population and their help-seeking behaviors. Currently, the trend is that students are seeking out mental health services at a continuously increasing rate. The stigma surrounding counseling has continued to diminish over time resulting in more learners obtaining the treatment that they need (Gallagher, 2013). The results provided from this study should encourage those behaviors and trends while supporting the growing belief in the efficacy of psychotherapy for college students. Although there is still a stigma associated with participating in medication, the findings of this study might encourage students to become more willing to consider medication treatment along with traditional therapy. Even while in college, parents commonly have a significant role in the development of their children.

The findings of this study could help parents encourage their children to seek out

the mental health support they need. Students might also be encouraged at the prospect of time-limited treatment. Long-term therapy might seem to be intimidating or even overwhelming to initiate. However, some individuals might be more willing to initiate treatment if they have the understanding that it does not necessarily have to be a time-exhaustive experience. College students tend to prefer brief therapy because it provides more immediate results and minimal amount of effort on behalf of the student (Ghetie, 2007).

Limitations

There are multiple limitations to this study and some have been indicated in the previous chapters. These should be taken into account when interpreting the results. One of the primary limitations of this study involved the participants. Although there was a very large sample size ($N = 2554$), there was not equity when it came to the groups divided by service placement (counseling center only, health center only, initial counseling center leading to dual services, initial health center leading to dual services). 2029 (79.4%) were counseling center only subjects, 454 (17.8%) were health center only clients, and 71 (2.8%) received counseling and health center treatment. The sample size of the dual services group was small in comparison to the other two, particularly when considering that group was divided by what treatment came first.

Of the original sample of 2554, institutional research did not provide post-treatment GPA for 1713 (67.1%) subjects. Likewise, 1596 students (62.5%) did not have pre-treatment GPA statistics included in institutional research's report, which is a substantial portion the overall sample. Considering that two out of the three research questions involved post-treatment GPA as a dependent variable and pre-treatment GPA

as a covariate, it would inevitably have a large impact on the analyses conducted for this study. Another possible limitation related to the participants would involve the demographics reported from the university health center. Of the 454 health center subjects, 442 (97.4%) had missing data related to ethnicity and race, and 429 (94.5%) had missing data related to credit hours and academic status.

Additionally, low effect size estimates (below .10) and power estimates (below .80) need to be addressed (Field, 2013). In the results of the first research question, there were low effect size and power scores for the independent variables and diagnostic class and severity ($\eta^2 = .00$; Observed Power = .13), graduation within six years ($\eta^2 = .00$; Observed Power = .08), and post-treatment GPA ($\eta^2 = .00$; Observed Power = .24).

For all three two-way MANCOVA analyses run for the second request question, there were limitations. There was a low power estimate in the relationship between number of health center sessions and post-treatment GPA (Observed Power = .57). For the number of health center courses, there were effect size and power concerns for graduation within six years ($\eta^2 = .11$; Observed Power = .40) and post-treatment GPA ($\eta^2 = .06$; Observed Power = .20). Last in research question 2, there are limitations in the power estimates in the relationship between the intersection of independent variables and graduation within six years (Observed Power = .58) and post-treatment GPA (Observed Power = .32).

Although the third research question found a significant relationship between the independent and dependent variables, the overall effect size—measuring the actual size and importance of the effect—was relatively low because it was below .10. The effect size for this research question was .011, which would account for less than 1% of the

total variance (Field, 2013).

The first research question assessed the impact of service placement on diagnostic severity, graduation within six years, and post-treatment GPA while controlling for post-treatment GPA as a covariate. The results indicated that there was not a significant relationship between the predictor and outcome variables. However, there appears to be a practically significant relationship. By examining the result located in Table 16, it is apparent those students who attend services at the university counseling center initially or exclusively have less severe diagnoses than those who attend the health center only. When assessing a client's severity based on their highest reported severity class, counseling center only participants had 806 (39.7%) classify under medium severity and 612 (30.2%) classify as mild severity. This is notably different to health center participants that classified 186 individuals (41.0%) as high severity and 227 learners (50.0%) as medium severity. Additionally, there was another markedly different result between counseling center only diagnoses and health center only diagnoses. For counseling center only clinicians, they labeled a client with a singular diagnostic classification 45.8% of the time compared to health center clinicians that provided a singular diagnostic classification 78.9% of the time. This could indicate that health center clinicians might be bolder in their interventions and diagnoses.

Table 16: Severity of Diagnostic Class Frequencies ($N = 2554$)

| Characteristic | <i>n</i> | % |
|---|----------|------|
| Counseling Center Only ($n = 119$) | | |
| Maximum Severity Class (Crisis) | 15 | 0.7 |
| High Severity Class (Psychotherapeutic) | 550 | 27.1 |
| Medium Severity Class (Intermediate) | 806 | 39.7 |
| Mild Severity Class (Situational/Emerging) | 612 | 30.2 |
| Health Center Only ($n = 454$) | | |
| Maximum Severity Class (Crisis) | 1 | 0.2 |
| High Severity Class (Psychotherapeutic) | 186 | 41.0 |
| Medium Severity Class (Intermediate) | 227 | 50.0 |
| Mild Severity Class (Situational/Emerging) | 36 | 7.9 |
| Counseling Prior to Health Treatment ($n = 18$) | | |
| Maximum Severity Class (Crisis) | 0 | 0.0 |
| High Severity Class (Psychotherapeutic) | 5 | 27.8 |
| Medium Severity Class (Intermediate) | 7 | 38.9 |
| Mild Severity Class (Situational/Emerging) | 6 | 33.3 |
| Health Treatment Prior to Counseling ($n = 29$) | | |
| Maximum Severity Class (Crisis) | 0 | 0.0 |
| High Severity Class (Psychotherapeutic) | 4 | 13.8 |
| Medium Severity Class (Intermediate) | 20 | 69.0 |
| Mild Severity Class (Situational/Emerging) | 5 | 17.2 |

Lastly, all data retrieved from for this study came from one large, public southeastern university—only one university counseling center and one university health

center were employed in the data collection. Even though there was a rather large sample being employed in this study, it would mean that the results would give a limited look at a very specific type of student. As a result, the generalizability of the findings would be limited.

Implications for Future Research

As an extension of the limitations, future research could have the opportunity to address those concerns directly. Namely, missing data from this study could potentially be addressed through further collaboration with institutional research in order to account for the absent pre-treatment GPA and post-treatment GPA. With a more robust GPA sampling, there would be a greater probability of finding significant results that could potentially be generalized to a larger population. Similarly, the overall sampling could be increased to benefit future studies. Although the numbers of participants representing the counseling center treatment group were noteworthy, efforts could be made to increase the number of subjects from the health center only and combined services treatment groups. This would be particularly advantageous if future research would like to compare across groups.

Notwithstanding the results of the current study, it would be intriguing to conduct the same analyses on the original research questions but applying individual demographic information as a covariate. It would have been interesting to know whether males or females are more likely to follow through with treatment and the impact this would have had on the outcome variables. Furthermore, future studies could account for age, academic standing through credits, and ethnicity when assessing variance in service access condition severity of diagnostic class, graduation within six years, post-treatment

GPA. Specifically, it could be advantageous to do a similar study but with only non-traditionally aged college students. That is a potentially vulnerable population that would warrant further examination and analysis. For this study, there was no data available related to sexual orientation. Future studies could the impact of the same variables on he LGBTQIQ community. Similarly with the age of students in higher education, issues of gender identity are of growing interest.

For future studies, it would be beneficial to include multiple universities from a variety of settings to create a more diverse sampling. Specifically, future multi-institutional studies could be branched out to include university counseling centers and health centers from smaller public universities, religious based institutions, and community colleges. It could be potentially beneficial to examine the difference between institutions and their impact on student academic success. Smaller colleges such as community colleges may be particularly interesting to assess due to counseling services occasionally being combined academic planning and advising.

Conclusion

This study explored a variety of variables related to university counseling centers and university health centers including service placement, severity of diagnosis, graduation within six years, and post-treatment GPA, number of health center sessions, number of health center courses, enrollment in medication management, and group assignment (intake-only v. treatment group). The study looked to assess the predictive quality of variables connected with student academic success in a higher education setting.

Although the study did not find significant results for two of the three research

questions and hypotheses, the results of this study could be practically used in order to support and improve the overall functioning of university counseling centers and university health centers. There are legitimate implications institutional leaders, directors of centers, treatment clinicians, learners, and future researchers. Purposefully implemented education and programs may be incorporated in order to serve the needs of the students as it relates to university missions. This study has contributed to the literature concerning student academic success and higher education support services related to college mental health.

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- Surmitis, K. & St. John, D. J. (2012, November). *Merging identities: College counselors as student affairs professionals*. Virginia Counselor Association Annual Convention, Fredericksburg, Virginia.
- St. John, D. J. & Maweu J. (2012, February). *Applying to graduate school: Preparing a successful admissions packet*. Virginia Association for Counselor Education and Supervision Graduate Counseling Student Conference, Lynchburg, Virginia.

PROFESSIONAL MEMBERSHIPS

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- American College Personnel Association
- Association for Counselor Education and Supervision
- Southern Association for Counselor Education and Supervision
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