HELPING THOSE WHO HELP THEMSELVES: DOES COUNSELING ENHANCE RETENTION?

A Dissertation in Counseling Psychology by Allison J. Lockard

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ABSTRACT

It is a well-accepted notion that psychological concerns and distress influence students’ academic performance and progress. However, college counseling centers have struggled to find empirically valid ways to demonstrate how addressing student personal concerns improves academic functioning and progress towards graduation (e.g. Sharkin, 2004). The purpose of this study was to explore the relationship between counseling, academic distress as measured by the CCAPS, and retention. Specifically, this study utilized a longitudinal design to examine how academic distress changed for clients over the course of treatment compared to a PSYC 100 non-treatment seeking sample and how changes in academic distress later impacted retention rates compared to the retention rates of the general student body. Further, race/ethnicity and depression as measured by the CCAPS were explored as potential moderators. Findings from this study demonstrated that academic distress decreased over the course of counseling; however the client change for those “academically distressed” did not exceed change experienced by the “academically distressed” PSYC 100 sample. Results on retention revealed that students who did not “improve” on academic distress over the course of treatment had lower retention rates than both the clients who “improved” as well as the general student body. Further, a complex relationship was revealed between counseling, academic distress, and depression such that those with higher Depression scores were much less likely to be retained when they also had high levels of Academic Distress. Additionally, results focused on racial/ethnic minority clients revealed preliminary differences in the percentage of students being retained for those who “improved” on academic distress over the
course of treatment versus those who did not. Implications of these results on future research as well as on practices for university counseling centers are discussed.
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Chapter 1

Introduction

In the current landscape of accountability and cost-benefit higher education decision-making, college counseling centers have faced increased pressure to demonstrate the effectiveness of their services (Baker, 2012; Varlotta, 2012; Watson, 2014). Administrators have argued that counseling centers should provide evidence about how their services are an integral part of student academic development (Hodges, 2001; Varlotta, 2012), contending that centers should be evaluated on factors that are linked to educational outcomes, such as retention and grade point average (GPA; Cholewa & Ramaswami, 2015; Sharkin, 2004; Turner & Berry, 2000). Traditionally, counseling centers’ mission statements have aligned with the idea that their services enhance both personal and academic development. As Choi, Buskey, and Johnson (2010) point out, “Implicit in most counseling centers’ mission statements is the notion that receiving counseling services will not only help students deal with their personal concerns but will also promote their subsequent academic success” (p. 297).

However, some administrators and researchers have argued that there is a lack of evidence from counseling centers documenting how their services contribute to the academic mission of the university (Bishop, 2006; Sharkin, 2004) and contend that college counseling centers have not devoted as much attention to measuring academic outcomes as deemed necessary (Sharkin, 2004). Despite these concerns from higher administration, measuring outcomes is a complex issue for college counseling centers. First, many college counseling centers are being forced to shift from treatment centers to crisis centers due to an increase in severity of students’ presenting concerns (Watkins,
Hunt, & Eisenberg, 2011; Wood, 2012), potentially impacting not only the mental health benefits experienced by students but also the academic benefits with a decreased focus on students with less severe concerns and the need to end cases prematurely (Gallagher, 2008; Watkins et al., 2011). In addition, the goal of college counseling centers is first and foremost focused on the psychological health of the students and their ability to function within the university academic environment. It is not uncommon for a clinician to make the recommendation for a student to withdraw from a class or even from the semester when it is deemed beneficial for psychological health and overall well-being of the student (Sharkin, 2015; B. Locke, personal communication, June 15, 2015). Despite these complexities, when counseling centers have tried to demonstrate their influence on student academic development, they have done so in ways that are not considered optimal, leaving a gap between the stated mission of the center and tangible outcomes (Choi et al., 2010). Bishop (2006) highlighted a sense of urgency within counseling centers to find tangible outcomes, stating, “In academic communities, it is more likely that the actions of decision makers will be influenced by data than by affective arguments” (p. 6).

Addressing college students’ psychological health and academic concerns are not mutually exclusive tasks. The majority of students who withdraw from college are performing well academically, suggesting that retention and academic performance are tied to more than just obtaining a passing grade in a course (Meeuwisse, Severiens, & Born, 2010; Rummel, Acton, Costello, & Pielow, 1999; Tinto, 1987). Almost half of the college student population and 70% of counseling center clients report difficulty with their academics, mainly stemming from personal concerns (American College Health
Association, 2012; Turner & Berry, 2000). Further, Keyes, Eisenberg, Perry, Dube, Kroenke, and Dhingra (2012) found that academic impairment was more prevalent among students who screened positive for a mental health diagnosis (i.e., depression, generalized anxiety disorder, or panic disorder) than students who did not screen positive for a mental health diagnosis.

Despite these findings, college counseling centers continue to struggle to find an empirically valid way to demonstrate how addressing student personal concerns improves academic functioning and progress towards graduation (Sharkin, 2004). Previous research has used GPA and retention as indices of the academic impact of counseling. However, concerns have been raised about the appropriateness of these two variables as sole indicators of counseling outcomes. GPA is typically not the direct focus of counseling and becomes decreasingly malleable after a student’s first year (Choi et al., 2010; Lockard, Hayes, McAleavey, & Locke, 2012). In addition, the reliability and validity of GPA has been questioned due to recent grade inflation in higher education as well as grading differences across institutions (Didier, Kreiter, Buri, & Solow, 2006; Johnson, 2003; Richardson, Abraham, & Bond, 2012). Studies that have used retention as a measure of outcome have also faced methodological criticisms. In particular, these studies often measure retention from several months to years after the student was engaged in counseling (e.g., Illovsky, 1997; Lee, Olson, Locke, Michelson, & Odes, 2009), which makes it challenging to confidently conclude that retentions rates are directly related to participation in counseling or the effectiveness of the counseling received, particularly when no intermediate measure exploring the academic impact of counseling was used over the course of treatment to later link that counseling outcome to
retention. Thus far, no study has introduced an intermediate academic measure during the
course of counseling to later link that outcome to retention, potentially obscuring the
findings that counseling is positively related to retention (Choi et al., 2010; Illovsky,
1997; Lockard et al., 2012; Sharkin, 2004). Therefore, incorporating an intermediate
academic measure that allows researchers to examine academic change over the course of
counseling and later explore how such change is related to retention would strengthen the
empirical argument that counseling is indeed related to retention and academic
progression, which would be a valuable addition to the literature.

One of the barriers to linking an intermediate academic measure to a distal
academic outcome is the lack of standardized instruments designed to specifically
measure college student academic concerns. Many instruments that are utilized in college
counseling centers were not designed distinctively for college students (Locke et al.,
2011). For example, widely used instruments in college counseling centers such as the
Outcome Questionnaire-45 (OQ-45; Lambert, Lunnen, Umpress, Hansen, & Burlingame,
1994) and the Symptom Checklist-90-Revised (SCL-90; Derogatis, 1994) do not have a
specific measure of academic distress. Further, although the Student Adjustment to
College Questionnaire (SACQ; Baker & Siryk, 1986) has a measure of academic
adjustment and academic achievement, Locke et al. (2011) note that the SACQ was not
established to be a measure of academic outcomes and academic functioning for students
in a clinical setting.

The Counseling Center Assessment of Psychological Symptoms-62 (CCAPS-62)
and the briefer version, the Counseling Center Assessment of Psychological Symptoms-
34 (CCAPS-34) were “specifically designed for examining college student mental health
in a counseling center setting” (Locke et al., 2011, p. 99). In particular, both versions contain an Academic Distress subscale, which was designed to measure students’ academic distress in relation to their overall academic functioning (Locke et al., 2011). Academic distress is operationalized as students’ concerns related to their academic motivation, confidence, concentration, enjoyment, and ability to complete their coursework (Lockard et al., 2012). Research conducted using the CCAPS-62 and CCAPS-34 has found that Academic Distress has one of the highest overall subscale means among counseling center clients, and clinicians have reported academic distress as one of the primary reason students seek counseling (Center for Collegiate Mental Health, 2015, 2016). These findings underscore the importance of effectively addressing academic distress in college students and suggest that academic distress may be a motivator for seeking treatment (Center for Collegiate Mental Health, 2016; Krumrei, Newton, & Kim, 2010).

A study conducted by Lockard et al. (2012) examined academic distress over a six-week period for treatment seeking and non-treatment seeking college students to compare the degree and rate of change amongst the two samples. Findings revealed that students who participated in counseling for six sessions showed a significant decrease in academic distress. Further, the non-treatment seeking sample that completed the CCAPS-34 over a comparable 6-week period revealed little to no change on Academic Distress subscale scores. These findings provide preliminary evidence that counseling may have a positive impact on academic distress and that the Academic Distress subscale can be used as tool to measure change over the course of counseling.
Potential Moderators

Previous studies that have examined the relationship between counseling and academic outcomes have not explicitly explored factors that influence or moderate the relationship. As universities continue to move towards an environment focused on accountability and cost-benefit decision-making (Sharkin, 2004; Watkins, Hunt, & Eisenberg, 2012), it is important to explore what contributes to the strength of the relationship in order to inform practice and policy decisions. Lee et al. (2009) recommended that future researchers explore the underlying mechanisms that contribute to decreased academic distress and increased retention. In particular, further research is needed to explore what client factors, if any, influence academic distress as well as the relationship between academic distress and retention. For the purpose of this study, race/ethnicity and depression will be examined.

Race/ethnicity.

Although increased attention has been placed on multicultural awareness and responsiveness in college counseling centers, there is disproportionately limited research on counseling outcomes for racial/ethnic minority students (Kearney, Draper, & Baron, 2005; Lockard, Hayes, Graceffo, Locke, 2013). However, there is reason to explore counseling center outcomes for racial/ethnic minority students. It has been found that racial/ethnic minorities tend to experience more psychological distress compared to non-minority students (Hayes, Chun-Kennedy, Edens, & Locke, 2011; Mays & Cochran, 2001) and experience greater rates of attrition and lower cumulative GPAs (Guiffrida & Douthit, 2010; Museus & Quaye, 2009; Zea, Reisen, Beil, & Caplan, 1997). Further, research has demonstrated that many racial/ethnic minorities view predominantly white
campuses as unwelcoming and discouraging, and report less support from student
services, which can impact a student’s academic experience and decision to remain in
college (Chao & Nath, 2011; Wei, Kui, & Liao, 2011). Given that racial/ethnic minorities
have higher rates of attrition and report experiencing less campus support, it is important
to explore the potential role counseling serves in decreasing academic distress for this
particular group.

**Depression.**

Another area of focus in college counseling centers has been student depression. Many clinicians have reported an increase in depression symptoms in both treatment seeking and non-treatment seeking college students (American College Health Association, 2008; Beiter et al., 2015; Benton, Robertson, Tseng, Newton, & Benton, 2003; Kitzrow, 2003). The number of college students who reported they have suffered depression has risen 10%-15% since 2000 (American College Health Association, 2008; Hunt & Eisenberg, 2010). In addition, more than 1 in 3 undergraduates reported “feeling so depressed it was difficult to function” at least once in the previous year (American College Health Association, 2008).

It has been suggested that not only do depressive symptoms impact the student’s current academic functioning, but they also affect the student’s future academic outlook (Eisenberg, Golberstein, & Hunt, 2009). Researchers have theorized that a cyclical pattern develops between depression and academic distress, where over time they both intensify each other, as falling behind in school work leads to increased depressive symptoms which decreases academic motivation (DeRoma et al., 2009; Eisenberg et al., 2009). With the cyclical pattern between depression and academic distress and the rising
rates of depression (DeRoma et al., 2009; Eisenberg et al., 2009; Kisch, Leino, & Silverman, 2005), it is important to account for depression when examining the role of counseling on academic outcomes. Specifically, exploring the extent to which observed changes in academic distress during counseling occur above and beyond what can be accounted for by changes in depression has implications for college counseling centers. These findings could not only impact policy decisions, such as establishing appropriate session limits for students who are presenting with depression and academic distress, but might also demonstrate a financial benefit of counseling given that students with depression have higher rates of attrition (Eisenberg et al., 2009).
Chapter 2

Literature Review

Researchers, clinicians, and administrators have long been interested in measuring the impact that college counseling has on students (e.g., Choi et al., 2010; Frank & Kirk, 1975; Wilson, Mason, & Ewing, 1997). Over the last several years as colleges experience budget cuts and the closing of various student programs, there has been increased pressure for college counseling centers to demonstrate how their services enhance the mission of the university, which is academically driven (Sharkin, 2004; Sharkin, 2012). Administrators have recommended that counseling centers should be evaluated on factors that are associated with academic development, such as retention and GPA (DeBerard, Spielmans, & Julka, 2004; Illovsky, 1997; Sharkin, 2004). Wilson et al. (1997) point out that a primary purpose of college counseling is to assist students with decision-making and problem solving, which should then be reflected in the way students perform academically.

Despite the push for college counseling centers to be able to demonstrate their effectiveness, there is an argument stemming from counseling centers that examining effectiveness is complex given the presenting issues and concerns of students. There is an idea that psychological concerns are related but independent to the academic mission of the university (B. Locke, personal communication, June 15, 2015). Regardless of this argument that psychological concerns are related but independent, the reality of the campus environment is that college counseling centers are more than mental health agencies and arguably help students in ways that tangibly relate to the university academic mission (Hunt, Watkins, & Eisenberg, 2012) and therefore should be able to
produce data that demonstrate the impact of their services on academic development (Varlotta, 2012).

It is a well-accepted notion that psychological concerns and distress influence students’ academic performance and progress. A recent study conducted by the American College Health Association (2012) found that 45% of college students found academics to be very difficult to handle. They reported the top three factors impacting their academic performance were: stress (27.5%), sleep difficulties (19.4%), and anxiety (19.1%). All of these concerns impacting their academic success were endorsed at greater rates than general physical sickness, which was defined by cold and sore throat (16.4%). In another study, 10.8% of students reported academic impairment (i.e., of 6 or more days in the past 4 weeks) that they attributed to their psychological health. In particular, students who screened positively for a current mental disorder were more likely to report academic impairment than students who did not screen positively for a current mental disorder (Keyes, et al., 2012). Similarly, Miller and Markman (2007) found that students’ scores on hopelessness depression items from the Beck Depression Inventory-II were significantly negatively correlated with self-report measures of academic motivation and performance. This relationship was mediated by a lack of promotion focus (i.e., a lack of focus on achieving success, as opposed to avoiding failure). Another study conducted in Australia with a sample of 6,479 students from two universities used the Kessler 10 screening tool to classify students as having low, moderate, high, or very high levels of psychological distress (Stallman, 2010). Significant differences in GPA were found between the distress-level groups, with progressively lower GPAs as psychological distress increased. When focusing on college counseling center clients specifically, 70%
of clients reported personal problems were affecting their academic progress (Turner & Berry, 2000). Research conducted using the Counseling Center Assessment of Psychological Services (CCAPS-62) and a briefer version (CCAPS-34), instruments both developed to assess college student mental health, found that academic distress, which is defined as students’ concerns related to their academic motivation, confidence, concentration, enjoyment, and ability to complete their course work, had the highest overall mean among counseling center clients and the second highest mean amongst a non-treatment seeking sample (Center for Collegiate Mental Health, 2010).

The findings above demonstrate that academic distress is both apparent in college students utilizing counseling services and the general student population. A recent study by Krumrei et al. (2010) found that students in counseling, however, appear to experience more academic interference than their non-clinical peers. Academic interference in this article was defined as the degree that one of the following problems areas influenced academics: mood difficulties, learning problems, food concerns, interpersonal conflict, career uncertainty, self-harm indicators, and substance abuse issues. Research has shown that although students might not seek counseling specifically for academic concerns, as many as 87% of students state that their personal concerns are impacting them academically, and 57% of these students reported moderate to severe academic interference (Krumrei et al., 2010). While a relatively large proportion of a nonclinical sample also reported academic interference, they endorsed predominantly mild levels of interference. Krumrei et al. (2010) stated, “This highlights that the degree to which problems interfere with social and academic functioning may be a key motivator for seeking treatment” (p. 278).
Although the degree to which problems effect academic functioning might be a key motivator for seeking out treatment, college counseling centers have yet to find a valid way to accurately reflect the outcome their services have on academic development. Previous research has primarily focused on two different academic outcomes: grade point average (GPA) and retention. A review of articles that examine the relationship between counseling, retention, and/or GPA is conducted and described below.

**Counseling & Academic Performance**

Numerous studies have focused on the relationship between counseling and academic performance as defined by cumulative grade point average (e.g. Illovsky, 1997; Lee, et al., 2009). The earliest study exploring this relationship was conducted over 80 years ago. A study conducted in the 1930’s found that first-year students who received counseling had overall better adjustment to the university and better grades than a control group (Campbell, 1965; Williamson & Bordin, 1940). A follow-up study conducted 25 years later using these same students from the original 1940 study found that overall the students in counseling had a statistically significant higher GPA and graduated from school in a shorter time frame (Campbell, 1965). These findings were later supported by a study conducted by Brown, Wehwe, Haslam and Zunker (1971) that found at-risk students (of withdrawing from school) who received counseling demonstrated improved changes in GPA as well as improved motivation to study (as cited in Giddan, et al., 1987, p. 8).

Although these initial studies showed a positive relationship between counseling and GPA, more recent research has produced less convincing results. A study conducted by Illovsky (1997) examined the impact of counseling on GPA by comparing counseling
center clients to the general student population. Academic performance (GPA) was measured at the end of the subsequent semester after which the client completed counseling. Findings revealed that the relationship between counseling and GPA was not statistically significant.

Further, Lee et al. (2009) examined the impact of counseling on GPA and number of enrolled credits for first-year and transfer students. The study explored this relationship for two separate incoming classes, 2004-2005 and 2005-2006, respectively. A total sample of 10,009 students was examined and divided into two groups: counseling group or no counseling group. Their results found that the relationship between counseling and cumulative GPA was not statistically significant when controlling for precollege academic performance.

Although early research demonstrated a positive relationship between counseling and GPA, more recent studies have not found statistical significance when exploring the relationship between counseling and improved GPA. The review of the literature demonstrates the complexity of examining the relationship between counseling and academic outcomes.

**Counseling & Retention**

The relationship between counseling and retention has also long been studied. Initially, however, early research focused specifically on counseling and graduation rates. Early longitudinal studies (e.g. Campbell, 1965; Volsky, Magoon, Norman, & Hoyt, 1965) revealed increased graduation rates for clinical students compared to non-clinical students (as cited in Wilson, 1997, p. 317). Campbell (1965) found that students who were in counseling graduated one-fourth faster than their non-clinical comparison. Frank
and Kirk (1975) expanded on that study and followed 2,400 students who attended Berkeley from 1966 to 1971. They found that students who utilized the counseling center had higher graduation rates after 4 years and were less likely to leave the university in poor academic standing (Frank & Kirk, 1975).

As accountability became a central concern of colleges and universities, administrators wanted to know how college counseling centers were financially beneficial to the overall mission of the university. Counseling centers started moving towards examining retention as a way to measure the impact counseling has on academic outcomes. Due to the number of studies exploring counseling and retention, recent articles have had confidence to state that there is a positive relationship between counseling and retention (e.g. Choi et al., 2010; Giddan, et al., 1987; Lee, et al., 2009; Sharkin, 2004; Turner & Berry; 2000; Wilson, et al., 1997). Below are widely cited articles exploring this relationship.

Research has shown that students who seek out counseling are retained at a higher rate than the general student population. One study revealed that 86% of students who sought out counseling to address retention concerns (withdrawing from school, worries of failure, transferring, etc.) were still enrolled at least one more semester (Bishop & Brenneman, 1986). Another study reported that 80% of upper-class students who attended counseling stayed enrolled in college compared to only 46-51% of students who did not attend counseling. However, for first year students, findings suggested that counseling might be associated with student attrition, not retention (Giddan et al., 1987).

Further, Wilson et al. (1997) conducted a widely cited article on counseling and retention. With a sample of 562, they explored the retention rate of clinical vs. non-
clinical students after a period of two years. Results demonstrated that students who participated in counseling had a 14% higher retention rate than those who did not participate in counseling. Corroborating evidence for this relationship can be found in two more recent studies. Retention rates for students who sought out counseling were 12% higher than for the general student population (Turner & Berry, 2000). Further, in 2009, Lee and colleagues conducted a study that focused specifically on first-year and transfer students. Results indicated that the relationship between counseling and student retention, defined as enrolling their second year was statistically significant at $p < .001$.

Although these results suggest that counseling promotes retention, other studies have demonstrated that results are not consistent across class standing. For example, one study found that counseling was positively associated with retention for freshmen and seniors but not sophomores and juniors (Illovsky, 1997). Illovsky (1997) also found that a client’s presenting concern mediated the relationship between counseling and retention, suggesting that counseling does not have equal retention effects across the host of issues for which students seek help.

Overall, based on the numerous research studies that have been conducted exploring the relationship between counseling and retention, many researchers state with confidence that there is a positive relationship between these two variables. However as pointed out above, there are still recent inconsistent findings based on academic level as well as difficulty comparing results across studies based on how retention is defined. Further research is needed to explore the relationship between counseling and retention.

**Use of Retention and GPA for College Counseling Outcome Research**
Although many researchers are trying to explore the relationship between counseling and academics, other researchers have expressed caution about using retention or GPA as a sole measure of outcome to examine this relationship (Choi et al., 2010; Illovsky, 1997; Sharkin, 2004).

Choi et al., (2010) state:

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 actually do for students but also proximal to the psychological changes attributable to the counseling (p. 298).

Arguments are raised by researchers about the potential methodological flaws of focusing only on one factor (GPA or retention) without exploring other measures of academic functioning.

**Use of academic performance and GPA.**

Concerns have been raised when using GPA to define the effect counseling has on academic functioning (Choi et al., 2010; Illovsky, 1997). It is assumed that counseling improves academic functioning and overall grade performance by addressing student distress. However, GPA is not always reflective of a student’s overall distress pertaining to their academic functioning. It is not safe to assume that a student with a high GPA experiences lower academic distress than another student. Many students who achieve high grades still experience a great deal of academic distress, and some students who are under-performing academically do not feel much distress (Schrader & Brown, 2008). Using GPA as a measure of improved academic functioning provides no information on
individual differences (Choi et al., 2010). Further, it is recognized that once a GPA is established after the first year, it grows increasingly harder to have an overall impact on how high or low the GPA is able to move over one or two semesters. Therefore, using GPA and improvements of GPA may not truly reflect how students are doing academically or the benefit they received academically as a result of counseling (Illovsky, 1997). Further, focusing solely on GPA may overlook the “ripple effect” that has been suggested to exist in the counseling relationship (Nafziger, Couillard, & Smith, 1999).

Nafziger, et al. (1999) argue that counseling may improve many areas of a student’s personal functioning including academic functioning. To be successful academically may require a certain level of personal functioning. Previous research has demonstrated that students who received counseling showed positive changes in quality of life satisfaction, which was more predictive of a measure of retention then using GPA (Nafziger et al., 1999). Nafziger et al. argue that not many students seek out services at the counseling center specifically for academic concerns. However, at intake students showed, on average, notable distress academically as measured by the College Adjustment Scale (CAS). After six sessions, there was moderate to large statistical significance \( (d=-.57) \) on the academic problems scale. Nafziger et al. suggest that these findings represent counseling is a “holistic construct” and that improvements in psychological and social functioning many have ripple effects on academic distress. Therefore, students do not have to specifically come to counseling for academic concerns to have their academics positively impacted by the counseling process.

Given that GPA does not provide consistent results and has been questioned in the literature as an effective measure of academic outcomes, it appears to truly reflect the link
that counseling has on academic progress examining other measures might be more accurate in determining the relationship.

**Use of retention as sole measure of outcome.**

Concerns have also been raised for relying only on retention as a measure of counseling center effectiveness. Within college counseling centers, retention is often not the direct goal or focus of sessions. Giddan et al. (1987) explained that counselors and therapists often view student withdraw or student retention as much more complex than the university’s overall financial goals. “Counselors are sometimes unsure of ‘good’ reasons to drop out, unclear over the criteria for withdrawal, reluctant to coerce a student to stay, yet committed to helping each student formulate a constructive plan for a period way from campus” (Giddan et al., 1987, p. 7). These thoughts are echoed in a recent article by Choi et al. (2010), where the authors point out that previous studies using retention rates as indices of counseling outcome make the assumption that receiving counseling has a direct impact on students’ enrollment rates and graduation. “Although student retention and graduation rates are important for higher education institutions, enhancing them is not necessarily a primary goal of personal counseling provided at counseling centers” (Choi et al., 2010, p. 298). Choi et al. (2010) go on to elaborate, “To view students’ enrollment and graduation as a direct result of counseling services ignores the complexity of retention issues, as well as the diverse personal concerns that bring students to counseling centers” (p. 298).

A further complication in integrating findings from previous studies is that the studies have all defined retention slightly differently, creating difficulties in comparing results across investigations. The study by Wilson et al. (1997) defined retention as
students who had either graduated or were still enrolled after two years while those who withdrew from the university within two years were considered non-retained. The study conducted by Illovsky (1997) defined retention as being enrolled at the end of the following semester after the initial data was collected. Further, DeBerard et al. (2004) examined incoming first-year students at the first week of class and then surveyed them again a year later to examine retention. Finally, the study conducted by Lee et al. (2009) which examined first-year and transfer students assessed retention by determining whether students registered in classes their third semester, which was the fall semester of the following year.

Adding to the complexity of using retention as the sole outcome measure is that previous research has demonstrated that the relationship between counseling and retention is not consistent across class standing or presenting concern (Illovsky, 1997; Lee et al., 1999). For example, one study found that counseling was positively associated with retention of first-year students and seniors but not sophomores and juniors (Illovsky, 1997). In addition, Illovsky (1997) also found that a client’s presenting concern mediated the relationship between counseling and retention, suggesting that counseling does not have equal retention effects across the host of issues for which students seek help.

Overall these concerns and discrepancies in the findings has brought into question the usefulness of examining retention solely to measure the impact college counseling has on academic functioning.

Using a Standardized Assessment as a Measure of Academic Distress

It is evident that continued research is needed to examine the effectiveness of college counseling on academic functioning. However recent arguments have provided
support for exploring academic functioning in ways beyond just retention and GPA. Recently research has started incorporating standardized instruments as a way to explore the relationship between counseling and academic functioning (e.g. Choi et al., 2010; Lockard et al., 2012; Nafziger et al., 1999).

Nafziger et al. (1999) reported that despite the need to explore the effectiveness of college counseling services, there is “limited research using psychometrically sound instruments to measure therapy outcomes in counseling centers has been reported in the literature” (p. 4). Nafziger et al., who were among the first researchers to use a standardized instrument to explore the impact that college counseling has on academics using the College Adjustment Scale found that the measure of academic functioning had medium “practical significance changes” after six sessions despite the fact that the counseling center didn’t provide formally focused academic counseling. Positive relationships have been found between academic functioning and personal functioning with both areas improving when counseling was rendered. Measures that focus only on GPA and retention could miss this indirect impact of counseling that can be accounted for by a standardized measure.

Nafziger et al. (1999) state:

The supplemental use of a quick, inexpensive measure…. which can be administered after every session would help researchers gather information on individuals who leave therapy after several sessions. Such continuous measurement could also help therapists evaluate the effectiveness and efficiency of their work and provide information on the appropriateness of session-limit policies for specific psychological issues and concerns. Future work could also
verify the potential global benefits of counseling on academic performance and student retention (p. 11).

Choi et al. (2010), whom expanded on the study conducted by Nafziger et al. (1999), examined the effectiveness of counseling at college counseling centers by examining how clinical gains from counseling contributed to students’ perceptions about problem resolution and academic functioning. Academic functioning was defined as, “the ability to manage—in wide range of cognitive, emotional, and behavioral respects—the various educational demands at an institution” (Choi et al., 2010, p. 299). Students completed the Student Adjustment to College Questionnaire (SACQ) at intake and then again after termination, allowing the researchers to track change in academic functioning scores while the students were receiving counseling. The Student Adaptation to College Questionnaire (SACQ) contains two academic subscales: Academic Adjustment and Institutional Attachment/Goal Commitment (Baker & Siryk, 1989). Results revealed that there is a relationship between psychological distress and academic functioning. Positive relationships were found between personal functioning and academic functioning with improvement in both areas after counseling.

Choi et al., (2010) argued that using an instrument to measure academic functioning while the client is in counseling is more likely to accurately reflect both a direct and indirect impact of personal counseling on academic functioning. However, these results from their study are based on a sample of 78 students. Further, 19% of the sample only had one session, which limits the ability of the researcher to say that counseling did indeed have an impact on academic functioning. Although this study conducted by Choi et al. utilized a standardized instrument for conducting research on
counseling and academic functioning, the instruments were only administered at the beginning of counseling and then after termination, limiting the ability for the researcher to examine how change occurs throughout the course of the semester. Choi et al. point out, “It would be most clinically relevant and academically beneficial to routinely monitor and track with a solid outcome measurement in each session….” (p. 302).

Both Nafziger et al. (1999) and Choi et al. (2010) recommend the use of routine assessment to track the impact that college counseling has on academic functioning. The CCAPS-62 and CCAPS-34 were created as a way to measure distress in areas specific of the college clinical population, including a measure of academic distress designed for repeated measure administration (Center for Collegiate Mental Health, 2010).

**Counseling Center Assessment of Psychological Symptoms.**

Locke et al. (2011) argue:

Academic performance is both a core concern and an example of how mental health is uniquely contextualized for college students. Academic performance is a complex construct that has multiple meanings. Many students are under pressure to perform academically and stress, sleep disturbances, interpersonal problems, and specific psychological problems can all impede academic performance. Conversely, academic stress can exacerbate problems in living across a variety of domains. Thus, the inclusion of items that measure academic performance and functioning is critical (p. 98).

The CCAPS-62 is a multi-dimensional, psychometric instrument designed to assess mental health in college students (Locke et al., 2011). The CCAPS-62, originally the CCAPS-70, is the result of gathering data from 135 college counseling centers. A
factor analysis and confirmatory analysis lead to the development of eight subscales: Depression, Generalized Anxiety, Social Anxiety, Eating Concerns, Substance Use, Family, Academic Distress, Hostility. The CCAPS-34 was released in September 2009 and is a 34-item instrument with seven subscales related to college student distress. The CCAPS-34 consists of the same subscales as the CCAPS-62, excluding family distress. Both the CCAPS-62 and CCAPS-34 contain a measure of academic distress. As mentioned previously, the Academic Distress subscale is defined as students’ concerns related to their academic motivation, confidence, concentration, enjoyment, and ability to complete their course work (Lockard et al., 2012).

Based on the CCAPS Technical Manual (2012), it is recommended that the CCAPS-62 or CCAPS-34 be given as a repeated measure, ideally at every session. A repeated administration of the CCAPS allows the instrument to be used as a tool for discussion with each client. If any changes are noticed from week to week, the counselor can address the changes with the client immediately in session versus waiting for a distant indicator of academic functioning such as GPA. Further, routine assessment can also help determine those students who are not improving academically as measured by the CCAPS and allow changes within session to be made. Being able to identify these treatment non-responders early on may improve overall retention and encourage more students to stay enrolled.

A recent research study demonstrated that academic distress can be monitored every session by administering the CCAPS-62 and CCAPS-34, which allows for change to be measured over the course of counseling (Lockard et al., 2012). Lockard et al. (2012) examined the impact that counseling has on academic distress as defined by the CCAPS
for both a clinical and non-clinical sample (PSYC 100 sample). Findings revealed that there was significant decrease over the course of 6 sessions for the clinical sample but no significant decrease in academic distress scores for the PSYC 100 sample. These findings provide preliminary support for use of the CCAPS as a measure of academic outcomes for counseling.

**Need for Continued Research**

As clinicians’ report that the severity of mental health concerns in college students is increasing (Benton, et al., 2003; Watkins, et al., 2012) and demands for counseling center accountability rise (Sharkin, 2004), there is a continued need to research the link between college counseling and academic outcomes. Although the usefulness of using retention as a single measure of college counseling outcome research has been questioned, a recent study (Lockard et al., 2012) has introduced the idea of using the CCAPS Academic Distress subscale as a way to explore the relationship between counseling and academics. Findings from Lockard et al. indicate that we are able to measure change in academic distress across clients during the course of treatment as an alternative to examining distal outcomes after termination.

Further, although the relationship between retention and counseling has been examined in several studies, research focusing on the factors that impact and/or influence retention has not been explored in the same detail. One of the gaps that exist in the literature examining retention in relation to counseling is a question such as: What factors influence this potential relationship? How do findings from a standardized instrument later reflect retention rates? The past studies focused on counseling and academic outcomes indicate that mental health concerns are relevant to academic performance and
academic functioning (e.g. Choi et al., 2010; Illovsky, 1997; Krumrei et al., 2010; Nafziger et al., 1999; Sharkin, 2004). They emphasize the importance of the counseling role in academic success and overall wellbeing for students experiencing psychological problems. According to Krumrei et al. (2010), “Mental health concerns are relevant to quality of life and academic performance. This emphasizes the importance of the counseling role in academic success and social well-being for students experiencing psychological problems. Furthermore, these are core issues for student retention efforts” (p. 278).

Previous studies that have examined the relationship between counseling and academic outcomes have not explicitly explored factors that influence or contribute to the relationship. Although counselors and administrators are interested in the actual relationship, it is also important to explore what contributes to the strength of the relationship in order to inform practice and policy decisions. Lee et al. (2009) recommended that future researchers explore the underlying mechanisms that contribute to the positive influence that counseling seems to have on student retention. In particular, further research is needed to explore what client factors (e.g. race/ethnicity, depression), if any, influence decreased academic distress and increased retention. In addition, exploring these factors in comparison to a PSYC 100 sample could potentially strengthen the argument that counseling assists students in ways academically above and beyond what is experienced in the general student population.

**Potential Moderators**

**Race/ethnicity.**
One of the criticisms of counseling outcome research is that often studies examine counseling center clients as a whole despite differences that can exist (Kearney, et al., 2005). One particular area of research where there is a gap is racial/ethnic minority college counseling outcomes. Kearney et al. (2005) argue, “although multicultural awareness is on the rise, there is still a remarkable dearth of research regarding the use of counseling services and outcomes for racial and ethnic minorities” (p. 273). All the studies mentioned above in the literature review for both retention and GPA were conducted on a primarily European American sample. Based on this literature review, a study has yet to focus specifically on counseling and academic outcome research for racial/ethnic minorities.

It should not be assumed that counseling has the same impact on academic distress for racial/ethnic minorities as European American college students. A study that explored graduation rates over the period of ten years revealed that although racial/ethnic minority enrollment increased over that time span, racial and ethnic minority students still only accounted for 10% of students graduating from college (Zea, et al., 1997). Further research has shown that racial/ethnic minority students have greater rates of attrition, lower cumulative GPA (Zea et al., 1997) and experience greater campus dissatisfaction (Wei, et al., 2011).

Although African Americans are more likely than ever to earn high school degrees and attend college, they continue to be much less likely than European Americans to graduate from college. According to Guiffrida and Douthit (2010), “This continued disparity between the educational attainments of Blacks and European Americans is clearly reflected in the significantly higher attrition rates experienced by Black college
students” (p. 311). Recent attrition rates indicate that only 40% of Black students who begin college will graduate compared to 61% of white students (Guiffrida & Douthit, 2010). Similar findings have also been found for Latino/a students. Research has shown that despite increases in college admission Latino/a students retention rates are still alarmingly lower than European American students. Latinos/as are among the least likely racial/ethnic group to complete their undergraduate degree (Astin & Oseguera, 2003; Erdur-Baker, Aberson, Barrow, & Draper, 2006).

It has been found that cultural minority groups tend to experience greater amounts of psychological distress compared to the general student population (e.g. Hayes et al., 2011; Mays & Cochran, 2001). It is thought this is could partially be due to minority stress. Minority stress theory, developed by Meyer (1995), suggests that members of cultural minority groups are “exposed to frequent and deleterious stressors, such as prejudice, oppression, and discrimination” (Hayes et al., 2011, p. 117). The theory suggests that because of a person’s minority status and their exposure to these unique stressors they can experience greater psychological distress (Effrig et al., 2011; Meyer, 2003).

Racial and ethnic minority college persistence is complicated by racially tense university environments (Wei et al., 2011). In a recent study, researchers found that racial/ethnic minority students are more likely to view predominantly white campuses as unwelcoming and discouraging, which can impact their academic experience and decision to remain in college (Wei et al., 2011). Given that college stressors and the college environment are different for racial/ethnic minorities, research exploring the role
that counseling has on academic distress specifically for racial/ethnic minorities is a welcome addition to the literature of counseling and academic outcomes.

**Depression.**

Rummel, et al. (1999) found that the majority of students who withdraw from the university are performing well academically. Approximately 1 in 4 of the students report that they leave to address personal problems (Kitzrow, 2003; Rummel et al., 1999). A 6-year longitudinal study found that college students’ personal and emotional adjustment was an important factor in retention and predicted attrition as well as or better than academic adjustment (Gerdes & Mallinckrodt, 1994). It is thought that if students participated in counseling to address personal concerns, they might have a greater chance of being retained (Turner & Berry, 2000). When clients are in counseling for personal concerns their academic progress should also be positively effected (Sharkin 2004; Wilson 1997).

One personal concern that is increasingly influencing students is depression. Very few studies, however, have focused specifically on the relationship between counseling, depression, and academic distress. Research has shown that the number of college students who reported they have suffered depression has risen 10-15% since 2000 (American College Health Association, 2008). Krumrei et al. (2010) examined nine institutions and over 3,800 students using the K-State Problem Identification Rating Scales (KPIRS). They found that most common concern amongst the clinical sample was mood difficulties (41%). In the 2011 National College Health Assessment (NCHA), more than one in three undergraduates reported “feeling so depressed it was difficult to function” at least once in the previous year (2012). Kelly, Roberts, and Bottonari (2007)
followed a sample of 60 depressed non-clinical college students over the course of a 9-week period. Participants in this study completed the Beck Depression Inventory II (BDI-II: Beck, Steer, & Brown, 1996). Kelly et al. found that the majority of the students were still depressed at the end of the nine weeks.

These findings are alarming given that depression has been found to have a negative impact on a college student’s academic performance. A recent study compared the GPA of 121 students during six months following a diagnosis of depression at the university’s student health center to the GPA of a control group selected from the overall student population. There was a significant, negative association between GPA and untreated depression (Hysenbegasi, Hass, & Rowland, 2005). Further, depression has been found to be a significant predictor of not only GPA but also the likelihood of dropping out from the university, even when controlling for prior academic performance and other variables (Eisenberg et al., 2009). When comparing the students who were depressed to a control group, they found that “depressed students reported missing a significantly greater number of classes (14.64 vs. 2.99), exams (1.36 vs. .10) and assignments (5.45 vs. .90). Students with depression also reported dropping a significantly greater number of courses (.74 vs. .09) and missing a greater number of social activities” (Hysenbegasi et al., 2005, p. 146).

Research has shown that when students attend counseling for their mental health concerns, they can see a positive impact on their personal well-being, academic success, and retention. A survey conducted by the University of Idaho Student Counseling Center (2000) found that 77% of students reported that they were more likely to stay in school because of counseling and that their academic performance would have declined without
counseling (as cited in Kitzrow, 2003). Ninety percent of the students reported that counseling helped reduce stress that was interfering with their schoolwork (Kitzrow, 2003). Given that there is a gap in the research specifically exploring the relationships between academic distress, counseling, depression, and retention, it is important to explore this relationship. Examining these relationships could have an impact on the treatment of clinical college students as well as outreach practices for the general student population.

**Comparison Samples**

Much of the research that has been conducted exploring the impact that counseling has on academic outcomes has included a non-clinical comparison, often consisting of the remaining general student body not enrolled in counseling at the college counseling center (e.g. Illovsky, 1997; Lee et al., 2009). It is expected that counseling centers should be able to demonstrate that they contribute to the academic success of their clients above and beyond the general student population. For example, retention studies have shown that retention rates for a clinical sample were 12% to 14% higher than for the general student population (Lee et al., 2009; Turner & Berry, 2000; Wilson et al., 1997). According to Krumrei et al. (2010), “The vast majority of those who presented for counseling services reported that their concerns interfered with their academic and social lives (at moderate to severe levels). While a relatively large proportion of the general student body also reported academic and social interference, they endorsed predominantly mild levels” (p. 278). Lockard et al. (2012) conducted a preliminary study examining academic distress change over the course of a semester for a clinical sample and PSYC 100 non-clinical sample. The PSYC 100 sample consisted of students who
completed the CCAPS-34 on a weekly basis over the course of 14 weeks for class credit. This study demonstrated that the clinical sample had significant decreases in Academic Distress subscale scores over the course of six sessions while the PSYC 100 sample showed relatively little to no change (Lockard et al., 2012).

Given that students in counseling appear to experience more academic distress (Krumrei, 2010; Lockard et al., 2012, Stallman, 2010), it is important to explore the influence that counseling has on reducing their level of academic distress and examine how this change in academic distress compares to a non-clinical sample. Comparing the results of academic distress from a clinical sample to a non-clinical sample will help to account for threats to internal validity, such as maturation and history (Lockard et al., 2012).

**The Present Study**

The academic success and degree attainment of postsecondary students remains a primary concern of many colleges and universities. Studies have recently shown that attrition rates have increased as much as 45% and the average number of years to attain a bachelor’s degree is over 6 years (Barefoot, 2004; Lotkowski, Robbins, & Noeth, 2004; Robbins, Lee, Oh, Button, 2009). According to Robbins, et al. (2009):

Due to the economic and social consequences of failed postsecondary student experiences, tremendous resources are invested from the student, institutional, and societal levels (Pathways to College Network, 2004). Colleges and universities spend considerable expenses on the identification and development of students in need of academic aids (e.g., providing developmental intervention programs) in an effort to ensure that students persist in attaining their degrees (cf. Hattie, Biggs,
& Purdie, 1996; Kulik, Kulik, & Shwab, 1983; Pascarella & Terenzini, 2005, for full review and discussion). Yet, surprisingly little is known about the effectiveness of the variety of college interventions on college performance and retention outcomes (Pascarella & Terenzini, 2005).

Over the last several decades, researchers have been interested in exploring the relationship between counseling and academic outcomes. This has typically been done by using retention and GPA as the measure of academics, which are the two criteria that often define college success (Robbins et al., 2009, Robbins et al., 2004). Previous studies exploring the impact of counseling on academics have produced inconsistent results (e.g. DeBerard, et al., 2004; Illovsky, 1997; Lee et al., 2009; Turner & Berry, 2000). Multiple researchers have implicated methodological shortcomings as a potential explanation for these inconsistencies (e.g., Choi et al., 2010; Illovsky, 1997). The literature thus far has shown no consistent significant relationship between counseling and GPA, demonstrating that GPA not an effective measure of the impact of counseling on academic outcomes.

Further, the relationship between counseling and retention has been found to be complex and in need of additional measures. Thus, researchers have been left searching for optimally valid means to explore the impact counseling has on academics. The CCAPS provides a way to measure change in academic distress during the course of treatment as an alternative to examining distal and multi-faceted academic outcomes after termination. No study thus far has utilized a standardized instrument over the course of counseling specifically focused on academic distress that has later explored the outcome of the instrument to retention. With increasing demands for postsecondary accountability, research such as this is crucial to making informed decisions on how to best promote
academic development and retention of students. Further, this research can aid in making informed policy decisions for the overall university and in particular college counseling centers. Nafziger et al. (1999) stated academic “outcome data can be used to support administrative decisions on such issues as session limits or fees” (p. 11). As college counseling center directors report an increase in college mental health severity addressing topics such as fees and sessions limits are integral in meeting the needs of a changing college population.

The purpose of this study was to explore the relationship between counseling, academic distress as measured by the CCAPS, and retention. Retention was defined as still being enrolled or graduated from the university 2 years after initial completion of the CCAPS. Braxton, Hirschy, and McClendon (2004) argue, “The onus of retention or persistence does not rest with the individual students” (p. 4). Based on this argument, retention is the responsibility of the institution. This study examined CCAPS Academic Distress subscale scores over the course of counseling for a clinical population at a single university and examined how those scores relate to retention. By examining the CCAPS subscale scores while the student was in counseling and comparing those outcomes at a later point to retention, we examined not only the immediate outcome of counseling but also the distal outcome (Hayes & Gelso, 2001). Further, we compared the results from the clinical sample to both a non-clinical sample for the intermediate measure and the general student body for the distal measure, allowing us to assess the role counseling is playing in both reducing academic distress and increasing retention. Finally, the study explored how race/ethnicity and depression impact both academic distress and later retention.

Hypotheses regarding academic distress and counseling.
A recent study conducted by Lockard et al., (2012) found that when examining academic distress over the period of six sessions using the CCAPS Academic Distress subscale the clinical sample experienced statistically significant decreases in scores while the PSYC 100 non-clinical sample experienced little to no change in their scores. This study, which was the first to use the CCAPS to examine change over time for academic distress, provides preliminary support that academic distress decreases while a student is in counseling above and beyond change seen in the PSYC 100 sample. This present study sought to replicate the results of the Lockard et al. study using a larger sample of both clinical and non-clinical students.

**Hypothesis 1a:** Students in counseling will experience decreased academic distress over the course of counseling.

**Hypothesis 1b:** These changes in academic distress for the clinical sample will exceed any changes found amongst a comparative non-clinical PSYC 100 sample.

**Hypotheses regarding academic distress, retention, and counseling.**

Research has shown that counseling has a positive impact on retention. In addition, three studies utilizing standardized instruments (Choi et. al, 2010; Lockard et al., 2012; Nafziger et al., 1999) have shown that counseling has a positive impact on academics, when assessed either during or at the end of treatment. However, no study has linked the results from a standardized instrument as an intermediate outcome to retention, which serves as a distal outcome. Given that academic distress and retention, when measured as sole outcome variables, both appear to yield positive results, it was hypothesized that an improvement in academic distress, as measured by the CCAPS, would be positively related to increased retention rates for a clinical sample.
In addition, based on a literature review, no study had examined retention rates within the clinical sample based on findings from the intermediate measure. Therefore, this study aimed to explore retention rates for clinical students who demonstrated an improvement in academic distress over the course of counseling versus students who did not see an improvement in academic distress over the course of counseling. Improvement for this study was defined as students whose scores on the Academic Distress subscale move from one cut-point on the CCAPS to a lower cut-point as judged by scores from the first administration to the last administration. Specifically, students who moved from the elevated cut-point to either the low or mild cut-point were considered improved as well as students who moved from the mild cut-point to the low cut-point (Center for Collegiate Mental Health, 2012).

**Hypothesis 2a:** Students who seek out counseling will be retained at the university at a greater rate than the general student body.

**Hypothesis 2b:** Clinical students who see an improvement in Academic Distress subscale scores over the course of treatment will have retention rates higher than clinical students who do not see an improvement in Academic Distress subscale scores.

**Hypotheses regarding academic distress and depression.**

Overall, very few studies have focused specifically on the relationship between counseling, depression, and academic distress despite the increase in the number of clients presenting with depression in college counseling centers (American College Health Association, 2008; Kitzrow, 2003). Research has shown that the most common concern among the clinical sample was mood difficulties (Krumrei et al., 2010). Further,
a recent study conducted by McAleavey et al. (2011) revealed that students who were diagnosed with some form of depression (e.g. Major Depressive Disorder, Dysthymia) were more likely to have elevated Academic Distress Subscale scores. Given that depression is negatively related to academic performance and retention (Hysenbegasi, et al., 2005), it was important to explore how counseling impacted both academic distress and depression and how this later related to retention.

**Hypothesis 3a:** There will be a positive correlation between the overall change in Academic Distress and the overall change in Depression for the clinical sample.

**Hypothesis 3b:** Students in counseling who improve on both their Academic Distress subscale and Depression subscale will have higher retention rates than students who do not improve on one or both subscales.

**Hypothesis 3c:** Changes on the Academic Distress subscale will predict retention rates of students in counseling above and beyond what can be predicted by changes on the Depression subscale.

**Hypotheses regarding academic distress for racial and ethnic minorities.**

There is a lack of research that focuses on counseling outcomes for racial and ethnic minorities. The majority of counseling research focused on academic outcomes has been conducted with a predominately white sample (Kearney et al., 2005). However due to different stressors, particularly minority stress, there is reason to believe that the level of academic distress and the impact that counseling has on academic distress for racial and ethnic minorities could be different. A preliminary, exploratory study examining the impact that counseling has on academic outcomes for racial/ethnic minorities in a clinical sample was conducted using the Academic Distress Subscale of the CCAPS (Lockard,
Hayes, & Locke, 2013). Results indicated that racial/ethnic minority students have a slower rate of change the first month of counseling compared to a European American sample. However, during the second month of counseling the racial/ethnic minority clients rate of change increased while the rate of change slowed down for the European American clients. These preliminary findings in addition to the lack of research focused on counseling outcomes for racial/ethnic minority students highlighted the need for research in this area.

**Hypothesis 4a:** Racial/ethnic minority students who seek out counseling will be retained at the university at a greater rate than the general student body.

**Hypothesis 4b:** Racial/ethnic minority students who see an improvement in Academic Distress subscale scores will have greater retention rates than the racial/ethnic minority sample that does not see an improvement in Academic Distress subscale scores.
Chapter 3

Methods

Participants

This study included three samples of students at a large, mid-Atlantic university: students receiving services at the campus counseling center (i.e., the clinical sample); students enrolled in an Introductory Psychology class (i.e., the PSYC 100 sample); and students from the general campus population (i.e., the general student body).

Clinical sample.

The clinical sample comprised undergraduate, non-international students who were seen for two or more individual counseling sessions and completed a minimum of two administrations of the CCAPS between fall semester 2010 and spring semester 2012. Of the initial 3,994 students who were seen at the counseling center between fall semester 2010 and spring semester 2012, 404 students met full criteria for inclusion in the study (individual counseling only, two or more administrations of the CCAPS, undergraduate, non-international students). The students included in the study attended an average of 7.6 sessions (SD=5.4) and completed an average of 5.6 CCAPS (SD=4.6) while in treatment. Of the 404 students, 246 (60.9%) were women, 155 (38.4%) were men, two students (0.5%) identified as transgender, and one student (0.2%) endorsed “prefer not to answer.” Two hundred sixty-nine students (66.6%) identified as White, 36 students (8.9%) identified as Asian American, 35 students (8.7%) identified as African American/Black, 30 students (7.4%) identified as Hispanic/Latino/a, 16 students (4%) identified as multiracial, 6 students (1.5%) identified as “other,” and one student (0.2%) identified as Native Hawaiian/Pacific Islander. Three students (0.7%) did not respond to the question
on race/ethnicity and 7 students (1.7%) endorsed “prefer not to answer.” The majority of the sample identified as heterosexual ($n=352; 87.1\%$), followed by bisexual ($n=10; 2.5\%$), gay ($n=9; 2.2\%$), lesbian ($n=4; 1\%$), and questioning ($n=2; 0.5\%$). Fourteen students ($n=14; 3.4\%$) did not respond to the question on sexual orientation and 13 students ($n=13; 3.2\%$) endorsed “prefer not to answer” or “prefer not to identify.” In regards to academic status, 22.2% ($n=89$) of students were freshmen/first-year students, 16.6% ($n=67$) were sophomores, 34.4% ($n=139$) were juniors, and 27% ($n=109$) were seniors. Further, one hundred and seven students identified as transfer students (26.5%) and 72 students (17.8%) identified as first generation students. A total of 235 students (58.2%) reported they had never received any form of mental health counseling prior to this current treatment, 162 students (40.2%) indicated that they had been in treatment previously, and 7 students (1.7%) did not report their previous counseling history. Furthermore, 303 students (75\%) reported they had never taken psychiatric medication, 100 students (24.7\%) reported they were currently taking and/or had previously taken medication for mental health concerns, and 1 student (.2\%) did not respond to the question about medication use. Finally, 370 students (91.6\%) reported they had never been hospitalized for mental health concerns while 28 students (6.9\%) reported a history of prior mental health hospitalization, and 6 students (1.4\%) did not respond to the question.

**PSYC 100 sample.**

The PSYC 100 sample consisted of students recruited from a psychology department subject pool to participate in a 14-week long study between spring semester 2011 and spring semester 2012. Students who completed more than one administration of
the CCAPS over the course of the 14 weeks and provided demographic data were included in the study. Of the initial 499 students who participated in this study as part of the psychology department subject poll, 311 students met full criteria for inclusion in the study (completed at least two administrations of the CCAPS, undergraduate, non-international students who were not receiving counseling during the 14 weeks of the study). The students included in the study completed an average of 12.6 administrations of the CCAPS ($SD=2.45$) over the course of the 14-week study. Of the 311 students, 218 (70.1%) were women and 93 (29.9%) were men. Two hundred forty-three students (78.1%) identified as White, 25 students (8%) identified as African American/Black, 18 students (5.8%) identified as Asian American, 14 (4.5%) identified as Hispanic/Latino/a, 6 students (1.9%) identified as multiracial, 3 students (1%) identified as “other,” and one student (0.3%) identified as Native Hawaiian/Pacific Islander. One student (0.3%) did not respond to the question on race/ethnicity and 7 students (1.7%) endorsed “prefer not to answer.” The majority of the sample identified as heterosexual ($n=294; 94.5$%), followed by bisexual ($n=8; 2.6$%), gay ($n=3; 1$%), lesbian ($n=1; 0.3$%), and questioning ($n=1; 0.3$%). Four students did not respond to the question on sexual orientation (1.3%). Of the 311 students, 55.3% ($n=172$) were freshmen/first-year students, 28.6% ($n=89$) were sophomores, 11.6% ($n=36$) were juniors, and 4.5% ($n=14$) were seniors. Five of the 311 students (1.6%) reported they were currently taking medication for mental health concerns. The mean age of the non-clinical students was 19 years old ($SD=2.32$). The age range was from 18 years old to 53 years old. Of the 311 students, 98% ($n=305$) were 22 years old or younger.
**General student body.**

The students from the general student body consisted of undergraduates who were enrolled for at least one semester between fall 2010 and fall 2013 and did not seek services at the university counseling center. Enrollment total during these semesters totaled 75,748 students. Of these 75,748 students, 41,143 (54.3%) identified as male while 34,599 (45.7%) identified as female. Six students (0%) did not provide information on their gender identity. Further, 55,664 students identified as White (73.5%), 4,053 students (5.4%) identified as Asian, 3,949 students (5.2%) identified as Hispanic/Latino/a, 3,556 students (4.7%) identified as African American/Black, 1,630 students (2.1%) did not disclose their race/ethnicity, 1,585 students (2.1%) identified as multiracial, 63 students (0.1%) identified as American Indian, and 49 students (0.1%) identified as Native Hawaiian/Pacific Islander. Demographic information about these students is limited given that only campus directory information is available without student consent according to the Family Education Rights and Privacy Act (FERPA). Directory information included information such as: name, dates of attendance, enrollment status (full-time, part-time, or not enrolled), date of graduation, and degrees received.

**Measures**

**CCAPS-62.**

The Counseling Center Assessment of Psychological Symptoms-62 (CCAPS-62) is a multi-dimensional instrument designed to assess mental health in college students (Locke et al., 2011). The CCAPS-62 consists of 62 items and eight subscales: Depression, Generalized Anxiety, Social Anxiety, Academic Distress, Eating Concerns,
Family Distress, Hostility, and Substance Use. Respondents are asked to rate how closely each statement applies to them within the past two weeks, from 0 (*not at all like me*) to 4 (*extremely like me*). Each subscale of the CCAPS has two interpretive thresholds, or cut-scores, which are used to facilitate interpretation of CCAPS scores in clinical practice.

The cut scores effectively divide each subscale into three ranges of distress: low, moderate, and high (Center for Collegiate Mental Health, 2015; McAleavey et al., 2012). Low scores are typical of college students who are not in counseling and are likely to indicate no, or minimal, distress in that area. Moderate scores are characteristic of college students who are in counseling. The high cut score was developed using DSM-IV diagnostic data. Scores in this range are typical of students in counseling who have been diagnosed with a particular disorder that is associated with a specific subscale (i.e., Depression, Generalized Anxiety, Social Anxiety, Eating Concerns, and Substance/Alcohol Use). For subscales that are not associated with a diagnosis (Academic Concerns, Family Distress, and Hostility), high cut points were set at the 70th (or next closest possible) percentile and 40th percentile for low cut points (Center for Collegiate Mental Health, 2012). For the purpose of the present study, the Academic Distress subscale was the primary subscale of focus, and the Depression subscale was of secondary importance.

The Academic Distress subscale consists of five questions, such as “I’m unable to keep up with my schoolwork,” and “I am not able to concentrate as well as usual.” The subscale is scored by averaging responses to the five questions. Low scores indicate less academic distress (Center for Collegiate Mental Health, 2010). Internal consistency for the Academic Distress subscale was estimated to be .82 (Center for Collegiate Mental
The Academic Distress subscale has been found to correlate significantly with the Academic Adjustment scale of the Student Adaptation to College Questionnaire, $r = -.69$ (Byers & Goossens, 2002; McAleavey et al., 2012). The test-retest reliability of the CCAPS-62 was examined using a non-clinical undergraduate sample. For the Academic Distress subscale, the 1-week retest ($n=175$) reliability estimate is .83, and the 2-week retest ($n=175$) reliability estimate is .76 (Center for Collegiate Mental Health, 2012). The mean, which was derived from 142,560 college students who sought counseling, is 1.83 with a standard deviation of 1.02. The Academic Distress cut points for the CCAPS-62 are 1.42 (40%) for the low cut-point and a 2.40 (71%) for the high cut point.

The Depression subscale consists of 13 questions including: “I feel isolated and alone,” and “I feel sad all the time.” The subscale is scored by averaging responses to the 13 questions. Low scores indicate fewer symptoms of depression. Internal consistency for the Depression subscale was estimated to be .92 (Center for Collegiate Mental Health, 2015). The Depression subscale was found to correlate significantly with the Beck Depression Inventory, $r=.89$ and the Patient Health Questionnaire-9, $r=.77$ (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Kroenke, Spitzer, & Williams, 2001; McAleavey et al., 2012). For the Depression subscale, the 1-week retest ($n=175$) reliability estimate is .88, and the 2-week retest ($n=175$) reliability estimate is .92 (Center for Collegiate Mental Health, 2012). The mean, which was established using the same normative sample as the Academic Distress subscale, is 1.56 with a standard deviation of .94. The cut points for the Depression subscale CCAPS-62 are 1.09 for the low cut-point and 1.70 for the high cut point.
**CCAPS-34.**

The Counseling Center Assessment of Psychological Symptoms-34 (CCAPS-34) is a 34-item short form of the CCAPS-62 with seven subscales related to college student distress. The CCAPS-34, which was designed as a brief assessment instrument, consists of the same subscales as the CCAPS-62, excluding Family Distress; the Substance Use subscale is renamed Alcohol Use to reflect its exclusive focus on alcohol. The Academic Distress subscale contains four questions that appear on the CCAPS-62. The correlation between the CCAPS-62 and the CCAPS-34 on the Academic Distress subscale is .98. The internal consistency estimate is .82 (Center for Collegiate Mental Health, 2010). For the CCAPS-34 Academic Distress subscale, the test-retest coefficients, which were derived from a non-clinical sample, are .79 for one week and .74 for two weeks (Locke et al., 2012). The mean, which was established using 233,615 college students who sought counseling, is 1.85 with a standard deviation of 1.11. The Academic Distress cut points for the CCAPS-34 are a 1.45 (40%) for the low cut-point and a 2.50 (72%) for the high cut point.

The Depression subscale of the CCAPS-34 contains six items that appear on the CCAPS-62. The correlation between the CCAPS-62 and the CCAPS-34 on the Depression subscale is .96. The internal consistency estimate is .89 (Center for Collegiate Mental Health, 2015). The test-retest coefficients, which were also developed from a non-clinical sample, are .87 for one week and .86 for two weeks (Locke et al., 2012). The mean, based on the same normative sample in the paragraph above, is 1.42 with a standard deviation of 1.03. The Depression subscale cut points for the CCAPS-34 are 1.00 for the low cut-point and a 1.75 for the elevated cut point.
Standardized Data Set.

The Standardized Data Set (SDS) encompasses questions typically asked of students seeking counseling services, including questions about clients’ gender, age, race/ethnicity, grade point average, and previous counseling experience (Center for Collegiate Mental Health, 2012b).

Retention.

For the current study, retention was examined for the three subsequent semesters after a student initiated treatment at the university counseling center. Retention was defined as still being enrolled at the mid-Atlantic university during the semester of interest or having completed all degree requirements during that semester.

Procedure

Clinical sample.

As part of the routine intake process, the CCAPS-62 and SDS were administered to all clients seeking treatment at the university counseling center. Upon completing the CCAPS-62 and SDS immediately prior to their initial visit, clients met with a counselor to complete an intake interview. Students who subsequently received individual counseling with a doctoral level intern, graduate assistant, or doctoral level practicum student were administered the CCAPS-34 before each subsequent appointment. The initial CCAPS-62 scores were rescored as CCAPS-34 scores to be able to compare administrations over the course of treatment.

Any student who completed the CCAPS at least twice and was seen for more than one individual session between fall semester 2010 and spring semester 2012 was included in the study. Exclusionary criteria included graduate students, individuals receiving group
counseling, and international students. Though it is important for future studies to include these students, they were outside the realm of the present study for methodological reasons. In particular, the focus of this study was on the impact of counseling on academic distress and retention for undergraduate students. Including graduate students who potentially have different factors that impact academic distress and retention could potentially confound findings. Further, including students who participated in both group counseling and individual counseling could inflate change scores due to receiving multiple modes of treatment. Finally, including international students could potentially inflate intake scores and deflate change scores as international students have to adjust not only to the overall American culture but also a new academic culture (Lockard et al., 2012). Further, although Academic Distress scores are inversely correlated with self-reported GPA, international students reported experiencing greater academic distress than non-international students (2.03 vs. 1.89), even though self-reported GPAs tend to be higher for international students (3.29) than non-international students (3.12) (CCMH, 2009). Thus, it is possible that the Academic Distress subscale captures a different construct for international students than for non-international students.

**PSYC 100 sample.**

The PSYC 100 sample consisted of students recruited from a psychology department subject pool to participate in a 14-week study. Students were recruited each semester to participate in the study beginning in spring semester 2011 through spring semester 2012. No participants were recruited during summer semesters due to the low number of students enrolled in summer courses. For the first week of the study, students completed a brief demographic questionnaire and then the CCAPS-62 online.
Subsequently, every 7 days the students were prompted to complete the CCAPS-34 online for a total of 13 administrations. Initial CCAPS-62 subscale scores were converted to CCAPS-34 subscale scores in order to be consistent with the clinical sample. Exclusionary criteria included students who were receiving some form of counseling during the 14-week period as well as international students. Including students who were receiving mental health counseling could inflate change scores for both the Academic Distress and Depression subscales. Further, to keep the clinical sample and PSYC 100 sample comparable, international students were again excluded due to the potential variables confounding change scores.

**General student body.**

Retention and graduation data were gathered from the registrar’s office for students enrolled from fall 2010 to fall 2013. Retention rates were calculated for the general student body to compare to the clinical sample. Students in the clinical sample were removed from the general student body sample to prevent their data from being calculated in more than one sample.

**Data collection timeline.**

Data collection for this study spanned a three-year period, which began at the start of fall semester 2010 and concluded at the end of fall semester 2013. There were two phases to the data collection process. The first phase was the collection of data from the CCAPS and SDS from the clinical sample and PSYC 100 sample. This portion of the data collection began fall semester 2010 and was completed in spring semester 2012. The second phase of the study consisted of gathering retention data. For each clinical student who completed the CCAPS and SDS, retention data was then examined for the three
subsequent semesters after the student completed the initial CCAPS. Given that retention was defined as a student being retained at the university or meeting graduation requirements for his/her degree within two years of initially completing the CCAPS, retention data was examined starting at the end of fall semester 2010 through fall semester 2013, at which time data collection was considered complete and analyses were conducted. The retention rates of clinical students were calculated one subsequent semester after the students sought treatment, two subsequent semesters after the student sought treatment, and three subsequent semesters after the student sought treatment. These rates were then compared to the retention rates of the sample of students derived from the general student body.

To thoroughly outline the timeline for this study, students who completed their initial CCAPS assessment in fall 2010 first had their retention data examined starting that subsequent semester (spring 2011) to determine if they withdrew or graduated that semester. Their retention data was examined each subsequent semester through the end of spring semester 2012. Further, students who completed their initial CCAPS in spring 2011 had retention data that was first examined during fall semester 2011 and continued each semester through the end of fall semester 2012. Students who completed the CCAPS initially during fall semester 2011 had their retention data examined through spring semester 2013. Lastly, for those students who completed their initial CCAPS during spring semester 2012, their retention examination concluded fall semester 2013.

To link students’ CCAPS scores to their retention information, the principal investigator worked with the registrar’s office to access a list of the names of all students enrolled from fall 2010 to fall 2013. Given that students at the counseling center who
completed the CCAPS over the course of counseling are given a unique identification number to protect their confidentiality, the principal investigator worked with an honest broker within the counseling center to determine the names of students who sought counseling during the time period described above. The honest broker removed identifiable information for each client who sought services at the counseling center during the designated time and created a new client identification number. The honest broker also created a client identification number for the registrar data so that that students who sought out counseling could have their information linked to their data obtained from the registrar’s office in a confidential, non-identifiable manner. The honest broker then merged the registrar data and counseling center data. Upon linking the client data and the registrar data, the honest broker had no further involvement in the project. The principal investigator then coded the retention status of both students who sought treatment and the retention status of the general student body to determine retention rates for both samples.

Data Analytic Strategy

**Hypotheses regarding academic distress and counseling.**

As mentioned in chapter 2, the aim of the first hypothesis was to examine if Academic Distress subscale scores changed over the course of counseling for the clinical sample and examine if this change was statistically different than the PSYC 100 sample.

To explore this hypothesis, multilevel linear modeling (MLM) was considered an appropriate statistical approach to examine change for both the clinical sample and PSYC 100 sample. For the first part of this hypothesis, which was aimed at exploring if students in counseling experience decreased academic distress over the course of counseling, I
proposed to examine a three level hierarchical model in which the CCAPS repeated measures data (level 1) was nested within each client (level 2) that was nested within the therapist (level 3). According to Adelson and Owen (2012):

Statistically speaking, when clients are treated by the same psychotherapist they are likely to exhibit some degree of relatedness to each other, which can violate the assumption of independence—a basic assumption of most traditional statistical procedures like analysis of variance (ANOVA) or multiple regression analyses (p. 1).

Adelson and Owen go on to state, “MLMs are advantageous as they address the hierarchical structure of psychotherapy data by adjusting for and modeling the fact that clients of the same psychotherapist are indeed connected” (p. 1).

For the second part of this hypothesis, which was aimed at exploring if change in academic distress for the clinical sample exceeded the change found amongst the comparative PSYC 100 sample, a two level hierarchical model was apparent. Level 1 was the CCAPS repeated measures Academic Distress subscale scores, which were nested within each student (Level 2).

A first step in MLM is to calculate the intra-class correlation (ICC), which ranges from 0 to 1.0 and describes the proportion of total variance that depends on group membership (e.g., the degree to which variance at level 1 depends upon group membership at level 2). In building the model for the current hypothesis, the ICC was less than .02, meaning that less than 2 percent of the variability in the Academic Distress change scores was due to the nested structure of the data. In particular, individual therapists only accounted for 2% of the change in Academic Distress subscale scores
experienced by clients over the course of treatment. As such, continuing with MLM was not warranted (Lee, 2000) and therefore for the first part of the hypothesis a one sample t-test was used to examine the change between the initial Academic Distress subscale score and the final Academic Distress subscale score for the clinical sample and an independent sample t-test was used for the second part of hypothesis one to determine if statistically significant differences exist between Academic Distress change scores for the clinical sample and PSYC 100 sample.

**Hypotheses regarding academic distress, retention, and counseling.**

The second hypothesis was aimed at exploring the difference in retention rates between the clinical sample and the general student body as well as how improvements in the Academic Distress subscale score relate to retention. To examine the first part of this hypothesis, which hypothesized that students who seek counseling will be retained at a greater rate than the sample of the general student body, three independent sample t-tests were conducted to determine statistical significance between retention rates for the clinical and the comparative student sample one semester after students sought out treatment, two semesters after students sought out treatment, and finally three semesters after students sought out treatment.

For the second part of this hypothesis, an independent chi-square test was used to examine if students in counseling who experienced an improvement in Academic Distress had higher retention rates than students in counseling who do not see an improvement in Academic Distress. To conduct this analysis, two categorical subgroups were created from the clinical sample labeled improved and not improved. Improvement for this study was defined as students whose scores on the Academic Distress subscale moved from one
cut-point to a lower cut-point from the first administration of the CCAPS to the last administration of the CCAPS. For the analysis, the clinical students who met criteria for improvement were coded a “1” while the students who did not meet criteria for improvement were coded a “0.” Further, students who were retained were coded a “1” while those not retained were coded a “0.” Three chi-square tests were run in order to examine the relationship between counseling outcomes and retention for one semester after the student initiated treatment, two semesters after the student initiated treatment, and three semesters after the student initiated treatment.

**Hypotheses regarding academic distress and depression.**

Given that previous findings that have shown that the Academic Distress subscale and Depression subscale are positively correlated (McAleavey et al., 2012), the aim of the third hypothesis was to examine the relationship between change scores on both subscales as well as explore how changes in depression and academic distress impact retention. To explore the first part of the hypothesis which was aimed at examining the strength of the relationship between the change scores in Academic Distress and the change scores in Depression for the clinical sample over the course of treatment, a bivariate Pearson correlation was run to determine if the change in scores on one subscale were related to the change in scores on the other subscale.

To examine the second part of this hypothesis, it was proposed to divide the clinical group into four subgroups: Improved on both Academic Distress and Depression, Improved on Academic Distress only, Improved on Depression only, and Did not Improve. It was proposed the relationship between these counseling outcomes and retention (retained vs. not retained) would be examined using an omnibus 4x2
independent chi-square test. Although a 4x2 chi-square independent test (Improved on Academic Distress Only, Improved on Depression Only, Improved on both Academic Distress and Depression, or Did not Improve; Retained vs. Not Retained) was proposed, initial findings revealed that one cell had an expected count lower than five, which impacts the validity of the findings (McHugh, 2013). Therefore, Improved on Depression Only and Improved on Academic Distress Only were combined into one group (Improved on One Subscale Only), which resulted in running a 3x2 chi-square test. For the analysis, the clinical students who did not meet criteria for improvement on the Depression subscale or the Academic Distress subscale were coded as a “0,” students who experience improvement on one subscale were coded as a “1” and those students experienced improvement on both subscales were coded as a “2”. Further, students who were retained were coded as a “1” while those not retained after coded as a “0.” Retention status was coded for all three semesters after students sought out treatment so that the 3x2 chi-square could be run for each subsequent semester of interest.

For the third part of the hypothesis, which was aimed at examining if changes on the Academic Distress subscale predict retention rates of students in counseling above and beyond what can be predicted by changes on the Depression Subscale, a hierarchical binary logistic regression was conducted. Hierarchical regression examines “the influence of several predictor variables in a sequential way, such that the relative importance of a predictor may be judged on the basis of how much it adds to the prediction of a criterion, over and above that which can be accounted for by other important predictors” (Petrocelli, 2003, p. 9). Based on that information, the following variables were examined in the order presented: change scores in Depression from initial administration
to last administration and change scores in Academic Distress from initial administration to last administration. The two predictors were entered in this order to determine if the change in the Academic Distress subscale scores accounted for variance in retention rates above and beyond what is accounted for by change in the Depression subscale.

**Hypotheses regarding academic distress for racial and ethnic minorities.**

The goal of the fourth hypothesis was to explore racial and ethnic minority academic distress and how changes in academic distress later relate to retention. For the first part of the hypothesis, which hypothesized racial/ethnic minority students who seek out counseling will be retained at the university at a greater rate than the racial/ethnic minority general student body, a 2x2 chi-square analysis was conducted to determine statistical significance between retention rates for the clinical sample and the comparative student sample. For the second part of this hypothesis, a 2x2 chi-square analysis was proposed to see if there were significant differences in retention rates for racial/ethnic minority students who experienced improvement on the Academic Distress subscale and those students who did not; however, initial findings revealed that one cell had an expected count lower than five, which impacts the validity of the findings (McHugh, 2013). Therefore for the second part of this hypothesis, Fisher’s exact test was used. This is a statistical test that can be used for data in a two by two contingency table as an alternative to the chi-square test when the sample size is too small (Simon, 2000).
Chapter 4

Results

Preliminary Analyses

The purpose of the following section is to familiarize the reader with the data by way of descriptive statistics. Figure 1 depicts the samples included in this study.

Figure 1

*Overview of the Clinical Sample and the PSYC 100 Sample Included in the Analyses*
Table 1

Demographic Variables by Sample

<table>
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<th>A</th>
<th>B</th>
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<td>Woman</td>
<td>246 (60.9%)</td>
<td>175 (60.8%)</td>
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<td>76 (59%)</td>
<td>99 (62.3%)</td>
<td>54 (60.7%)</td>
<td>40 (58%)</td>
<td>59 (60.8%)</td>
<td>102 (58.3%)</td>
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<td>45 (69.2%)</td>
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<tr>
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<td>0 (0%)</td>
<td>0 (0%)</td>
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<td>0 (0%)</td>
<td>0 (0%)</td>
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<tr>
<td>Prefer not to Answer</td>
<td>1 (0.2%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
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<tr>
<td>Bisexual</td>
<td>10 (2.5%)</td>
<td>8 (2.8%)</td>
<td>8 (3.1%)</td>
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<td>4 (2.5%)</td>
<td>4 (4.5%)</td>
<td>1 (1.4%)</td>
<td>3 (3.1%)</td>
<td>6 (3.4%)</td>
<td>5 (4%)</td>
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<tr>
<td>Gay</td>
<td>9 (2.2%)</td>
<td>8 (2.8%)</td>
<td>6 (2.4%)</td>
<td>3 (2.3%)</td>
<td>5 (3.1%)</td>
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<td>2 (1.6%)</td>
<td>3 (1%)</td>
<td>1 (1.5%)</td>
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<td>Heterosexual</td>
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<td>248 (86.1%)</td>
<td>221 (86.7%)</td>
<td>110 (85.3%)</td>
<td>138 (86.8%)</td>
<td>77 (86.5%)</td>
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</table>

*Note: Sample A=Full clinical sample; Sample B= Clinical sample of students “academically distressed;” Sample C= Clinical sample of students who are “academically distressed” and “depressed;” Sample D= Clinical sample of students who are “academically distressed” and “improved;” Sample E: Clinical sample of students who are “academically distressed” and did not improve;” Sample F: Clinical sample of students who improved on both the Academic Distress subscale and the Depression subscale; Sample G: Clinical sample of students who are “academically distressed” and “depressed” and improved on one subscale; Sample H: Clinical sample of students who are “academically distressed” and “depressed” and did not improve on either subscale; Sample I: Clinical sample of students who completed treatment within one semester; Sample J: Clinical sample of students who are “academically distressed” and completed treatment within one semester; Sample K: Full PSYC 100 Sample; Sample L: PSYC 100 Sample of students who are “academically distressed.” *=descriptive variable not applicable for that sample.
Table 2
*Session Attendance & CCAPS-34 Subscale Means by Sample*

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<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
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<td>7.59 (SD= 5.49; range 2-43)</td>
<td>7.74 (SD= 5.7; range 2-45)</td>
<td>8.82 (SD= 5.5; range 2-45)</td>
<td>6.60 (SD= 5.32; range 2-45)</td>
<td>9.28 (SD= 6.0; range 2-45)</td>
<td>7.30 (SD= 4.87; range 2-22)</td>
<td>6.63 (SD= 5.7; range 2-45)</td>
<td>5.70 (SD= 3.13; range 2-15)</td>
<td>5.60 (SD= 3.01; range 2-13)</td>
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<td><strong>Average CCAPS</strong></td>
<td>5.56 (SD= 4.62; range 2-37)</td>
<td>5.57 (SD= 4.8; range 2-39)</td>
<td>6.60 (SD= 4.67; range 2-25)</td>
<td>4.70 (SD= 4.41; range 2-39)</td>
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<td>2.68 (SD= .71; range 1.50-4)</td>
<td>2.68 (SD= .76; range 1.50-4)</td>
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### Initial CCAPS Subscale Scores

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<td>2.17</td>
<td>2.17</td>
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</tr>
</tbody>
</table>

**Note:** Sample A=Full clinical sample; Sample B= Clinical sample of students “academically distressed;” Sample C= Clinical sample of students who are “academically distressed” and “depressed;” Sample D= Clinical sample of students who are “academically distressed” and “improved;” Sample E= Clinical sample of students who are “academically distressed” and did not improve;” Sample F= Clinical sample of students who improved on both the Academic Distress subscale and the Depression subscale; Sample G: Clinical sample of students who are “academically distressed” and “depressed” and improved on one subscale; Sample H: Clinical sample of students who are “academically distressed” and “depressed” and did not improve on either subscale; Sample I: Clinical sample of students who completed treatment within one semester; Sample J: Clinical sample of students who are “academically distressed” and completed treatment within one semester; Sample K: Full PSYC 100 Sample; Sample L: PSYC 100 Sample of students who are “academically distressed.” *=decriptive variable not applicable for that sample.
Table 3

**CCAPS-34 Cut-Scores by Sample**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
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<td>n=159</td>
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<td>n=175</td>
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<td><strong>Academic Distress Initial Cut Score</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>High</td>
<td>170 (42.1 %)</td>
<td>170 (59%)</td>
<td>156 (61.2 %)</td>
<td>80 (62%)</td>
<td>90 (56.6 %)</td>
<td>56 (62.9 %)</td>
<td>38 (55.1 %)</td>
<td>62 (63.9 %)</td>
<td>69 (39.4 %)</td>
<td>69 (55.6 %)</td>
<td>14 (4.5%)</td>
<td>14 (21.5%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>118 (29.2 %)</td>
<td>118 (41%)</td>
<td>99 (38.8 %)</td>
<td>49 (38%)</td>
<td>69 (43.4 %)</td>
<td>33 (37.1 %)</td>
<td>31 (44.9 %)</td>
<td>35 (36.1 %)</td>
<td>55 (31.4 %)</td>
<td>55 (44.4 %)</td>
<td>51 (16.4%)</td>
<td>51 (78.5%)</td>
</tr>
<tr>
<td>Low</td>
<td>116 (28.7%)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>51 (29.1%)</td>
<td>*</td>
<td>246 (79.1%)</td>
</tr>
<tr>
<td><strong>Academic Distress Final Cut Score</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>High</td>
<td>131 (32.4 %)</td>
<td>119 (41.3%)</td>
<td>107 (42%)</td>
<td>*</td>
<td>119 (74.8%)</td>
<td>*</td>
<td>28 (40.6%)</td>
<td>79 (81.4%)</td>
<td>55 (34.1%)</td>
<td>51 (41.1%)</td>
<td>21 (6.8%)</td>
<td>17 (26.2%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>114 (28.2 %)</td>
<td>93 (32.3%)</td>
<td>86 (33.7%)</td>
<td>53 (41.1%)</td>
<td>40 (25.2%)</td>
<td>34 (38.2%)</td>
<td>34 (49.3%)</td>
<td>18 (18.6%)</td>
<td>55 (31.4%)</td>
<td>47 (37.9%)</td>
<td>56 (18%)</td>
<td>24 (36.9%)</td>
</tr>
<tr>
<td>Low</td>
<td>159 (39.4%)</td>
<td>76 (26.4%)</td>
<td>62 (24.3%)</td>
<td>76 (58.9%)</td>
<td>*</td>
<td>55 (61.8%)</td>
<td>7 (10.1%)</td>
<td>*</td>
<td>65 (37.1%)</td>
<td>26 (21%)</td>
<td>234 (75.2%)</td>
<td>24 (36.9%)</td>
</tr>
<tr>
<td>Improved on AD Cut Score over treatment</td>
<td>129 (32%)</td>
<td>129 (44.8%)</td>
<td>111 (43.5%)</td>
<td>129 (100%)</td>
<td>*</td>
<td>89 (100%)</td>
<td>22 (31.9%)</td>
<td>*</td>
<td>48 (27.4%)</td>
<td>48 (38.7%)</td>
<td>29 (9.3%)</td>
<td>29 (44.6%)</td>
</tr>
<tr>
<td>Did not Improve /Change on AD cut score over treatment</td>
<td>275 (68.1%)</td>
<td>159 (55.2%)</td>
<td>144 (56.5%)</td>
<td>*</td>
<td>159 (100%)</td>
<td>0 (0%)</td>
<td>47 (68.1%)</td>
<td>97 (100%)</td>
<td>127 (72.6%)</td>
<td>76 (61.3%)</td>
<td>282 (90.7%)</td>
<td>36 (55.4%)</td>
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<tr>
<td>High</td>
<td>210 (52%)</td>
<td>187 (64.9%)</td>
<td>187 (73.3%)</td>
<td>74 (57.4%)</td>
<td>113 (71.1%)</td>
<td>64 (71.9%)</td>
<td>46 (66.7%)</td>
<td>77 (79.4%)</td>
<td>87 (49.7%)</td>
<td>79 (63.7%)</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Moderate</td>
<td>106 (26.2%)</td>
<td>68 (23.6%)</td>
<td>68 (26.7%)</td>
<td>37 (28.7%)</td>
<td>31 (19.5%)</td>
<td>25 (28.1%)</td>
<td>23 (33.3%)</td>
<td>20 (20.6%)</td>
<td>55 (31.4%)</td>
<td>34 (27.4%)</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Low</td>
<td>88 (21.8%)</td>
<td>33 (11.5%)</td>
<td>*</td>
<td>18 (14%)</td>
<td>3 (9.4%)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>70 (40%)</td>
<td>11 (8.9%)</td>
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<td>*</td>
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<tr>
<td><strong>Depression Final Cut Score</strong></td>
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<td></td>
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</tr>
<tr>
<td>High</td>
<td>118 (29.2%)</td>
<td>103 (35.8%)</td>
<td>97 (38%)</td>
<td>11 (8.5%)</td>
<td>92 (57.9%)</td>
<td>*</td>
<td>11 (15.9%)</td>
<td>86 (88.7%)</td>
<td>53 (30.3%)</td>
<td>49 (39.5%)</td>
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<td>*</td>
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<tr>
<td>Moderate</td>
<td>104 (25.7%)</td>
<td>82 (28.5%)</td>
<td>76 (29.8%)</td>
<td>40 (31%)</td>
<td>42 (26.4%)</td>
<td>28 (31.5%)</td>
<td>37 (53.6%)</td>
<td>11 (11.3%)</td>
<td>52 (29.7%)</td>
<td>41 (33.1%)</td>
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<td>*</td>
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<tr>
<td>Low</td>
<td>182 (45%)</td>
<td>103 (35.8%)</td>
<td>82 (32.2%)</td>
<td>78 (60.5%)</td>
<td>25 (15.7%)</td>
<td>61 (68.5%)</td>
<td>21 (30.4%)</td>
<td>*</td>
<td>70 (40%)</td>
<td>34 (27.4%)</td>
<td>*</td>
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<tr>
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<td>136</td>
<td>40</td>
<td>47</td>
<td>89</td>
<td>47</td>
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<td>Depression Cut Score over treatment</td>
<td>Sample A</td>
<td>Sample B</td>
<td>Sample C</td>
<td>Sample D</td>
<td>Sample E</td>
<td>Sample F</td>
<td>Sample G</td>
<td>Sample H</td>
<td>Sample I</td>
<td>Sample J</td>
<td>Sample K</td>
<td>Sample L</td>
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<tr>
<td></td>
<td>(43.8%)</td>
<td>(47.2%)</td>
<td>(53.3%)</td>
<td>(31%)</td>
<td>(100%)</td>
<td>(68.1%)</td>
<td>(39.4%)</td>
<td>(39.5%)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Did not Improve/Change on Depression cut score over treatment</td>
<td>227 (56.2%)</td>
<td>152 (52.8%)</td>
<td>119 (46.7%)</td>
<td>89 (69%)</td>
<td>112 (70.4%)</td>
<td>0%</td>
<td>22 (31.9%)</td>
<td>97 (100%)</td>
<td>106 (60.6%)</td>
<td>75 (60.5%)</td>
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</table>

Note: Sample A=Full clinical sample; Sample B= Clinical sample of students “academically distressed;” Sample C= Clinical sample of students who are “academically distressed” and “depressed;” Sample D= Clinical sample of students who are “academically distressed” and “improved;” Sample E: Clinical sample of students who are “academically distressed” and did not improve;” Sample F; Clinical sample of students who improved on both the Academic Distress subscale and the Depression subscale; Sample G: Clinical sample of students who are “academically distressed” and “depressed” and improved on one subscale; Sample H: Clinical sample of students who are “academically distressed” and “depressed” and did not improve on either subscale; Sample I: Clinical sample of students who completed treatment within one semester; Sample J: Clinical sample of students who are “academically distressed” and completed treatment within one semester; Sample K: Full PSYC 100 Sample; Sample L: PSYC 100 Sample of students who are “academically distressed.” *=descriptive variable not applicable for that sample.
Primary and Ad Hoc Analyses

Hypothesis 1:

Hypothesis 1a.

A one-sample t-test was used to examine the first part of hypothesis one. It was hypothesized that students in counseling would experience a significant decrease in Academic Distress subscale scores from their initial administration of the CCAPS to their final administration of the CCAPS. For the clinical sample, which comprised 404 students, results of the one sample t-test supported the hypothesis that scores on the Academic Distress Subscale decrease significantly over the course of counseling from the initial administration ($M=2.08$, $SD=1.11$) to the final administration ($M=1.77$, $SD=1.13$), $t_{403}=6.00$, $p<.001$, Cohen’s $d=0.28$, indicating a small effect.

Changes in Academic Distress subscale scores were then examined for students who began and ended treatment within the same semester. This specific sample was examined in order to later compare the Academic Distress change scores to a PSYC 100 sample, which had repeated measures of the CCAPS collected over the course of one semester. For this sample, the results of the one sample t-test also supported the hypothesis that scores on Academic Distress decrease from the first administration ($M=2.04$, $SD=1.09$) to the last administration ($M=1.77$, $SD=1.09$) over the course of counseling, $t_{174}=4.25$, $p<.001$, Cohen’s $d=0.25$, indicating a small effect.

Hypothesis 1a ad hoc.

To build upon these findings, a one-sample t-test was used to examine if Academic Distress subscale scores significantly change over the course of treatment for students in counseling who are “academically distressed.” As mentioned earlier, “academically distressed” was defined as students whose initial score on the Academic
Distress subscale on the CCAPS was at or above the moderate cut-score. The results of the one sample t-test supported the hypothesis that students who are “academically distressed” experience a statistically significant improvement in their Academic Distress subscale scores over the course of counseling from their first administration ($M=2.64$, $SD=.74$) to their last administration ($M=2.09$, $SD=1.05$), $t_{288}=9.7$, $p<.001$, Cohen’s $d=.61$, indicating a large effect. To make the clinical sample comparable to the PSYC 100 sample, which was examined later, change in Academic Distress was then examined for students who began and ended treatment within the same semester. Findings from the one-sample t-test revealed that there were significant differences from the initial Academic Distress subscale score ($M=2.58$, $SD=.77$) and the final Academic Distress subscale score ($M=2.14$, $SD=.97$), $t_{123}=6.12$, $p<.001$, Cohen’s $d=.47$, indicating a medium effect. Overall, both these findings confirm that students who seek out treatment and are “academically distressed” at their initial session experienced decreased academic distress over the course of counseling.

**Hypothesis 1b.**

An independent sample t-test was used next to examine the second part of hypothesis one, which stated that changes in Academic Distress for the clinical sample would exceed changes in Academic Distress subscale found amongst a comparative PSYC 100 sample. Results from the t-test revealed that there were significant differences in the Academic Distress change scores between the clinical sample ($M=.27$, $SD=.84$) and the PSYC 100 sample ($M=-0.01$, $SD=.68$), $t_{302.991}=3.81$, $p<.001$, Glass’ $\Delta=.34$, indicating a medium effect size. Glass’ $\Delta$ is an alternative effect size measure used when there are differences in sample size and standard deviations, making it the most conservative report of effect size for this analysis. Findings revealed that those students who sought out
counseling experienced a greater decrease in academic distress than those students who were not in treatment.

**Hypothesis 1b ad hoc.**

Given that mean of the first administration of Academic Distress subscale for the PSYC 100 sample was .82 ($SD= .76$) concerns about floor effect emerged. Floor effect arises when a data-gathering instrument has a lower limit to the data values than it can reliably specify. Floor effects occasionally occur in psychological testing when a psychological trait has a minimum standard score that may not distinguish some people who differ in their responses on the test item content (Groth-Marnat, 2009). Given there was concern for the student’s inability to endorse decreased Academic Distress over the course of the 14-week study because of the low initial mean, it was deemed appropriate to look at Academic Distress change scores for students who were considered “academically distressed” for the clinical sample and PSYC 100 sample. Again, the clinical sample began and ended treatment within the same semester. Findings revealed that there were not significant differences in the academic distress change experienced between the clinical ($M=.48$, $SD=.81$) and PSYC 100 sample of “academically distressed” students ($M=.34$, $SD=.79$), $t_{187} = .85$, $p=.40$. Findings revealed that “academically distressed” students who sought out counseling did not experience a greater change in their Academic Distress subscale scores when compared to the “academically distressed” PSYC 100 students.

**Hypothesis 2:**

The second hypothesis aimed to explore the difference in retention rates between the clinical sample and the general student body as well as how improvements in the Academic Distress subscale relate to retention for the clinical sample.
Hypothesis 2a.

A 2x2 independent chi-square test was used to examine the first part of hypothesis two, which stated students who seek out counseling will be retained at the university at a greater rate than the general student body. The independent chi-square was run to determine if any student who received treatment at the counseling center, as defined by two or more appointments, had higher retention rates than the general student body one semester after seeking treatment, two semesters after seeking treatment, and finally three semesters after seeking treatment. The results of the chi-square for one semester after students sought out treatment were significant, $X^2 (1, n=50,002)=9.63, p=.002$. The effect size was $\Phi=.01$, indicating a small effect. However, the findings were not in the anticipated direction as hypothesized, which was that students who sought out treatment would be retained at a greater rate than the general student body. Findings revealed that the general student body was retained at a significantly greater rate than the students who sought out counseling one semester after treatment was initiated (92.8% vs. 88.7%, respectively). A chi-square test exploring if students in counseling were retained at a greater rate than the general student body two semesters after seeking treatment was not statistically significant, $X^2 (1, n=43,379)=.05, p=.82$. The results did not support the hypothesis that students in counseling would be retained at a greater rate than the general student body two semesters after they sought out treatment. Students who sought out treatment were retained at a rate of 85.6% two semesters after seeking treatment while the general student body was retained at a rate of 85.1%, resulting in no significant difference. The independent chi-square test exploring if students in treatment were retained at a greater rate than the general student body after 3 semesters was also not supported, $X^2 (1, n=40,760)=.28, p=.60$, indicating that there were no statistically
significant differences in retention rates between students who sought out counseling (79.4%) and the general student body (80.5%) three semesters after students sought out treatment. Overall, findings revealed that the general student body was retained at a statistically significant greater rate one semester after students sought out counseling but that the difference in retention rates had small clinical significance. There were not significant differences in retention rates between the clinical sample and the general student body after the second or third semester following treatment.

Table 4
Retention Rates by Semester

<table>
<thead>
<tr>
<th>Sample</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Clinical Sample</td>
<td>88.7%</td>
<td>85.6%</td>
<td>79.4%</td>
</tr>
<tr>
<td>General Student Body</td>
<td>92.8%</td>
<td>85.1%</td>
<td>80.5%</td>
</tr>
</tbody>
</table>

*a = statistically significant difference at p< .01

**Hypothesis 2b.**

It was hypothesized for the second part of hypothesis two that clients who experienced an improvement in Academic Distress subscale scores over the course of treatment would have retention rates higher than clients who did not see an improvement in Academic Distress subscale scores. An independent chi-square test was run to examine if students who began treatment “academically distressed” and saw improvement over the course of counseling on the Academic Distress subscale were retained at a greater rate than clients who entered treatment “academically distressed” and did not experience improvement over the course of counseling. Improvement was defined as a change in scores on the Academic Distress subscale above the moderate or high cut-point to a score below a lower cut score (i.e., a change in scores from High to Moderate, High to Low, or Moderate to Low). Findings revealed that students who saw an improvement in their
Academic Distress subscale scores over the course of counseling were retained at a greater rate one semester post-treatment than students who did not see an improvement in Academic Distress scores over the course of counseling (93.8% vs. 84.6%), $X^2 (1, n=285)=5.974, p=.015$, $\phi=.15$, indicating a small positive relationship. When looking at differences in retention two semesters after students sought out counseling, findings revealed that students who saw an improvement in their Academic Distress subscale scores over the course of counseling were not retained at a greater rate than students who did not see an improvement in their Academic Distress subscale scores (90% vs. 84%), $X^2 (1, n=269)=2.58, p=.10$. Finally when examining retention rates 3 semesters after students sought out treatment, findings revealed that students who saw an improvement in Academic Distress subscale scores were not retained at a significantly greater rate than students who did not see an improvement in their Academic Distress subscale scores, (84% vs. 77%), $X^2 (1, n=258)=3.99, p=.05$. Overall, students who experienced an improvement in Academic Distress (as defined by moving from one cut score to another cut score) over the course of treatment had significantly higher retention rates one semester following treatment than students who did not experience an improvement in Academic Distress; however, this increase in retention was not significant for the second or third semester following treatment. This relationship was also explored for students in treatment who began and ended treatment within the same semester. The same pattern of findings was observed for students who completed treatment within one semester.
Table 5
*Retention Rates by Sample*

<table>
<thead>
<tr>
<th>Sample</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Sample who Improved on Academic Distress</td>
<td>93.8%&lt;sup&gt;a&lt;/sup&gt;</td>
<td>90%</td>
<td>84%</td>
</tr>
<tr>
<td>Clinical Sample who did not Improve on Academic Distress Subscale</td>
<td>84.6%&lt;sup&gt;a&lt;/sup&gt;</td>
<td>84%</td>
<td>77%</td>
</tr>
</tbody>
</table>

<sup>a</sup>= statistically significant difference at p< .01

**Hypothesis 2b ad hoc.**

Given that students who were academically distressed and saw an improvement in their scores over the course of counseling had statistically significant retention rates that were higher than students in counseling that did not see an improvement on their Academic Distress subscale scores, the retention rates of both these groups were compared to the general student body that first semester following treatment. Findings from the 3x2 independent chi-square test revealed that there were significant differences in retention rates amongst the three groups (clients who improved, clients who did not improve, and the general student body), $X^2 (1, n=49,008)=15.58, p=.001$, phi coefficient $\Phi=.02$, indicating a small positive relationship. Clients who did not experience an improvement in their academic distress over the course of counseling had significantly lower retention rates one semester after seeking treatment (84.6%) than both clients who experienced improvement over the course of counseling (93.8%) and the general student body (92.8%); however there were no difference in retention rates between clients who were “academically distressed” and experienced improvement over the course of counseling and the general student body (93.8% vs. 92.8%, respectively).
Table 6
*Retention Rates by Sample*

<table>
<thead>
<tr>
<th>Sample</th>
<th>Semester 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Sample who Improved on Academic Distress</td>
<td>93.8%(^b)</td>
</tr>
<tr>
<td>Clinical Sample who did not Improve on Academic Distress Subscale</td>
<td>84.6%(^{ab})</td>
</tr>
<tr>
<td>General Student Body</td>
<td>92.8%(^a)</td>
</tr>
</tbody>
</table>

\(^{ab}\) = statistically significant difference at \(p < .01\)

**Hypothesis 3:**

Hypothesis 3 was aimed at exploring the relationship between academic distress and depression as well examining if and how this relationship impacts the retention of students.

**Hypothesis 3a.**

The first part of hypothesis 3 was to examine the strength of the relationship between changes in the Academic Distress subscale and changes in the Depression subscale over the course of treatment. It was hypothesized there would be a positive correlation between the Academic Distress subscale change score and the Depression subscale change score for the clinical sample. Results from the bivariate correlation revealed that the two variables were positively correlated, \(r(404) = .49, p < .01\), indicating that a change on one subscale is related to a change on the other subscale over the course of counseling.

**Hypothesis 3b.**

The second part of hypothesis 3 was to explore how improving on the Academic Distress subscale and the Depression subscale over the course of counseling relate to retention. It was hypothesized that students in counseling who improve on both the Academic Distress subscale and Depression subscale will have higher retention rates than students who do not improve on one or both subscales. Students included in this analysis
were those students who entered treatment “academically distressed” and “depressed.” Students who were considered “depressed” had a cut-score that was at or above the moderate cut point. For the 3x2 independent chi-square test, findings revealed that there were not significant differences in retention rates amongst the three groups (Did not Improve, Improved on one subscale, Improved on both subscales), $X^2 (2, n=285)=5.21, p=.07$. Clients who did not experience an improvement on either the Academic Distress subscale or Depression subscale had a retention rate of 83.5%, while students who improved on one of the subscales had a retention rate of 90.8%, and students who experienced an improvement on both subscales had a retention rate of 93.3%; however these differences in retention rates were not significantly different from one another.

When examining retention rates two semesters after students sought out counseling, there were not statistically significant differences between students who did not experience improvement on the subscales (82.4%), students who saw improvement on one subscale (87.8%), and students who saw an improvement on both subscales (89.4%), $X^2 (2, n=269)=2.20, p=.34$. Finally when examining three semesters after students sought services, the 3x2 chi-square again revealed no significant differences in retention rates between the three groups, $X^2 (2, n=258)=2.54, p=.28$. Clients who did not experience improvement on either subscales had a 72.7% retention rate while students who saw improvement on one subscale had an 80.5% retention rate, and students who saw an improvement on both subscales had an 81.7% retention rate. Overall when looking at how retention rates for clients are related to improvement on Academic Distress and Depression, findings indicated that experiencing improvement on both subscales does not significantly increase students’ retention rates above and beyond those students who only see an
improvement on one subscale or students who do not experience an improvement on either subscale.

Table 7  
*Retention Rates by Semester*

<table>
<thead>
<tr>
<th>Sample</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Sample who Improved on Academic Distress and Depression</td>
<td>93.3%</td>
<td>89.4%</td>
<td>81.7%</td>
</tr>
<tr>
<td>Clinical Sample who Improved on one subscale</td>
<td>90.8%</td>
<td>87.8%</td>
<td>80.5%</td>
</tr>
<tr>
<td>Clinical Sample who did not improve</td>
<td>83.5%</td>
<td>82.4%</td>
<td>72.7%</td>
</tr>
</tbody>
</table>

**Hypothesis 3c.**

For the third part of hypothesis three it was hypothesized that changes on the Academic Distress subscale would predict retention rates of students in counseling above and beyond what could be predicted by changes on the Depression subscale. To examine this hypothesis, a hierarchical binary logistic regression was used. Block one was changes on the Depression subscale score from the initial administration of the CCAPS to the final administration of the CCAPS, block two was changes in Academic Distress from the initial administration to the final administration, and then block three was the interaction of the Depression change score and the Academic Distress change score. Given previous findings demonstrated that students in counseling who improve on Academic Distress have retention rates higher one semester following treatment than students who do not improve on Academic Distress, retention was examined one semester post treatment. A test of the full model against a constant only model was not statistically significant (Table 9), indicating that the predictors as a set did not reliably distinguish between students who were retained or not retained ($\chi^2 (1) = .01, p = .92$). This finding indicated that change in
Depression is not significantly predictive of retention and adding changes in Academic Distress to the model does not create a better predictive model. The same hierarchical linear regression was examined for the sample of students who entered treatment “academically distressed.” Findings from that regression revealed that the full model against a constant only model was not statistically significant (Table 10), again indicating that the predictors as a set did not reliably distinguish between students who were retained or not retained one semester following treatment ($\chi^2(1) = .41, p = .52$). Finally, the same hierarchical regression was explored for students who entered treatment both “academically distressed” and “depressed,” which was defined as students who had an initial CCAPS score that fell within the moderate to high cut scores. The full model for this sample (Table 11) was also not statistically significant, ($\chi^2(1)_1 = 1.49, p = .22$).

Table 8

*Results of Blocked Logistic Regression Exploring the Effects on Retention of Academic Distress, Depression, and their Interaction*

<table>
<thead>
<tr>
<th>Block</th>
<th>β</th>
<th>SE</th>
<th>Wald</th>
<th>OR</th>
<th>Inverse OR</th>
<th>Likelihood Ratio Chi-square</th>
<th>Model Pseudo R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression Change</td>
<td>.02</td>
<td>.16</td>
<td>.010</td>
<td>1.02</td>
<td>.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression Change</td>
<td>-.10</td>
<td>.18</td>
<td>.28</td>
<td>.91</td>
<td>1.10</td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>Academic Distress Change</td>
<td>.22</td>
<td>.17</td>
<td>1.62</td>
<td>1.25</td>
<td>.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction Block</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.126</td>
</tr>
<tr>
<td>Depression Change</td>
<td>-.10</td>
<td>.18</td>
<td>.27</td>
<td>.91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Distress Change</td>
<td>.25</td>
<td>.19</td>
<td>1.71</td>
<td>1.28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression Change X Academic Distress Change</td>
<td>-.04</td>
<td>.11</td>
<td>.13</td>
<td>.72</td>
<td>1.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* OR = $e^\beta$. Inverse OR = 1/OR.
Table 9

Results of Blocked Logistic Regression Exploring the Effects on Retention of Academic Distress, Depression, and their Interaction for “academically distressed” clinical sample

<table>
<thead>
<tr>
<th>Block 1</th>
<th>β</th>
<th>SE</th>
<th>Wald</th>
<th>OR</th>
<th>Inverse OR</th>
<th>Wald</th>
<th>OR</th>
<th>Inverse OR</th>
<th>Chi-square</th>
<th>Likelihood Ratio</th>
<th>Model Pseudo R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression Change</td>
<td>.12</td>
<td>.19</td>
<td>.41</td>
<td>1.13</td>
<td>.88</td>
<td>2.79</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 2</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression Change</td>
<td>-.06</td>
<td>.21</td>
<td>.08</td>
<td>.94</td>
<td>1.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Distress Change</td>
<td>.36</td>
<td>.21</td>
<td>2.79</td>
<td>1.43</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Interaction Block

<table>
<thead>
<tr>
<th>Block 1</th>
<th>β</th>
<th>SE</th>
<th>Wald</th>
<th>OR</th>
<th>Inverse OR</th>
<th>Wald</th>
<th>OR</th>
<th>Inverse OR</th>
<th>Chi-square</th>
<th>Likelihood Ratio</th>
<th>Model Pseudo R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression Change</td>
<td>-.05</td>
<td>.21</td>
<td>.06</td>
<td>.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Distress Change</td>
<td>.43</td>
<td>.24</td>
<td>3.28</td>
<td>1.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression Change X</td>
<td>-.10</td>
<td>.13</td>
<td>.62</td>
<td>.91</td>
<td>1.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. OR = e^β. Inverse OR = 1/OR.

Table 10

Results of Blocked Logistic Regression Exploring the Effects on Retention of Academic Distress, Depression, and their Interaction for “academically distressed” and “depressed” clinical sample

<table>
<thead>
<tr>
<th>Block 1</th>
<th>β</th>
<th>SE</th>
<th>Wald</th>
<th>OR</th>
<th>Inverse OR</th>
<th>Chi-square</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression Change</td>
<td>.26</td>
<td>.22</td>
<td>1.46</td>
<td>1.3</td>
<td></td>
<td></td>
<td>.49</td>
</tr>
</tbody>
</table>

Block 2

<table>
<thead>
<tr>
<th>Block 1</th>
<th>β</th>
<th>SE</th>
<th>Wald</th>
<th>OR</th>
<th>Inverse OR</th>
<th>Chi-square</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression Change</td>
<td>.10</td>
<td>.25</td>
<td>.15</td>
<td>1.10</td>
<td></td>
<td></td>
<td>.94</td>
</tr>
<tr>
<td>Academic Distress Change</td>
<td>.32</td>
<td>.23</td>
<td>1.96</td>
<td>1.38</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Interaction Block

<table>
<thead>
<tr>
<th>Block 1</th>
<th>β</th>
<th>SE</th>
<th>Wald</th>
<th>OR</th>
<th>Inverse OR</th>
<th>Chi-square</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression Change</td>
<td>.16</td>
<td>.26</td>
<td>.41</td>
<td>1.18</td>
<td></td>
<td></td>
<td>.97</td>
</tr>
<tr>
<td>Academic Distress Change</td>
<td>.50</td>
<td>.27</td>
<td>3.51</td>
<td>1.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression Change X</td>
<td>-.21</td>
<td>.14</td>
<td>2.29</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. OR = e^β. Inverse OR = 1/OR.
Hypothesis 3c ad hoc.

For further exploration of this relationship, the final subscale scores were examined for the sample of students who entered treatment “academically distressed” and “depressed” to determine if the final Academic Distress subscale score and final Depression subscale score predicted retention. To examine this relationship, a hierarchical binary logistic regression was run where block one was the final Academic Distress subscale score, block two was the final Depression subscale score, and block three was the interaction of the final Academic Distress subscale score and the final Depression subscale score (Table 12). The first block of the logistic regression model indicated differences in retention of students in the clinical sample based on final Academic Distress subscale score (LR $\chi^2(1)=8.08, p < .01$), with a goodness-of-fit Nagelkerke Pseudo $R^2$ of 0.06. The log likelihood for the observed data was maximized at -171.85. The second block of the logistic regression model was not significant, (LR $\chi^2(1)=.10, p = .80$), indicating that adding the final Depression subscale score to the model did not enhance the predictive ability of the model. Despite that, the model itself was still significant (LR $\chi^2(1)=.817, p = .02$), with a goodness-of-fit Nagelkerke Pseudo $R^2$ of 0.06, indicating that when the model controlled for final Depression subscale score the final Academic Distress subscale score still had an influence on predicting retention. The third block of the logistic regression model with the interaction term was significant at $p = .05$ (LR $\chi^2(1)=3.83; $ Nagelkerke $R^2=0.028$).

Generally speaking, the coefficients and odds ratios listed in Table 12 indicated the effect of a change in each estimator on the probability (or odds) of retention. The unstandardized coefficients listed in the table could be interpreted similarly to those produced by linear regression methods, but, because of the nature of the logistic
regression equation, the results were in terms of log odds, which were difficult to interpret. Therefore, it was easier to understand logistic regression results that were reported in terms of odds ratios, calculated by exponentiating the beta for each predictor.

In the first block, the OR of Final AD Score was less than one, so was converted to an inverse OR of 1.78, showing that students who scored one point higher on their final Academic Distress score were almost twice as likely to not be retained to the next semester. The significance of the second model (including both Academic Distress and Depression) indicated that, taking the effect of the final Depression subscale score into account, students who scored one point higher on their final Academic Distress score were still almost twice as likely (Inverse OR = 1.70) to not be retained to the next semester. The third block suggested that there may have been an interaction between the two final subscale scores that also matters ($\beta = -0.438, p = .05$), such that the influence of the final Academic Distress subscale score on retention varied for students based on their final Depression score. To illustrate this relationship, the effect of the final Academic Distress subscale score on the predicted probability of retention based on discrete values of the final Depression subscale score was graphed (Figure 2). This revealed that at high values of Academic Distress, the final score on Depression has a large effect on the probability of retention such that those with higher depression scores are much less likely to be retained when they also had high levels of Academic Distress.
Table 11

Results of Blocked Logistic Regression Exploring the Effects on Retention of Academic Distress, Depresssion, and their Interaction

<table>
<thead>
<tr>
<th>Block</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>OR</th>
<th>Inverse OR</th>
<th>Likelihood Ratio</th>
<th>Chi-square</th>
<th>Model Pseudo R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.078**</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Academic Distress</td>
<td>-0.58</td>
<td>0.21</td>
<td>7.43**</td>
<td>0.56</td>
<td>1.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.10</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Academic Distress</td>
<td>-0.53</td>
<td>0.26</td>
<td>4.26*</td>
<td>0.59</td>
<td>1.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>-0.08</td>
<td>0.26</td>
<td>0.10</td>
<td>0.92</td>
<td>1.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Academic Distress X Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.83*</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>Academic Distress</td>
<td>0.000</td>
<td>0.36</td>
<td>0.000</td>
<td>1.00</td>
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<td></td>
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<td></td>
<td>Depression</td>
<td>1.14</td>
<td>0.68</td>
<td>2.832~</td>
<td>3.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Academic Distress X Depression</td>
<td>-0.44</td>
<td>0.22</td>
<td>3.968*</td>
<td>0.65</td>
<td>1.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. OR = e^β. Inverse OR = 1/OR.
~p < .1 *p ≤ .05 **p < .01

Figure 2

Retention Probability based on Final Academic Distress Score and Final Depression Score

Probability of Being Retained One Semester After Initiating Treatment for Clients "Academically Distressed" and "Depressed"
Hypothesis 4:

The goal of the fourth hypothesis was to examine academic distress for racial/ethnic minority students and explore how changes in academic distress later relate to retention.

Hypothesis 4a.

The first part of hypothesis 4, which hypothesized that racial/ethnic minority students who seek counseling will be retained at the university at a greater rate than racial/ethnic minority students in the general student body, was not supported, $X^2 (1, n=8473)=2.04, p=.15$. Findings revealed that racial/ethnic minority students who sought counseling were not retained at a greater rate one semester post-treatment than racial/ethnic minority students comprising the general student body (87.9% vs. 91.6%, respectively). Findings also did not support the hypothesis that racial/ethnic minority students (81.9%) in counseling would be retained at a greater rate than the racial/ethnic minority general student body (80.6%) two semesters after they sought out treatment., $X^2 (1, N= 7644)= 0.12, p=.73$. Finally, results did not support the hypothesis that racial/ethnic minority students in treatment would be retained at a greater rate than the general student body after three semesters (76.2% v. 75.6%, respectively), $X^2 (1, n=7,264)=0.03, p=.87$. Collectively, findings revealed that the racial/ethnic minority students were retained at a comparable rate to the racial/ethnic minority general student body for three semesters following treatment.

Table 12
Racial/Ethnic Minority Student Retention Rates by Semester

<table>
<thead>
<tr>
<th>Sample</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Sample</td>
<td>87.9%</td>
<td>81.9%</td>
<td>76.2%</td>
</tr>
<tr>
<td>General Student Body</td>
<td>91.6%</td>
<td>80.6%</td>
<td>75.6%</td>
</tr>
</tbody>
</table>
Hypothesis 4b.

For the second part of this hypothesis, a 2x2 chi-square analysis was conducted to see if there were significant differences in retention rates for racial/ethnic minority “academically distressed” students who sought out treatment and experienced improvement on the Academic Distress subscale and those students who did not one semester, two semesters, and finally three semesters after seeking treatment. Findings revealed that students who saw an improvement in their Academic Distress subscale scores over the course of counseling were not retained at a greater rate one semester post-treatment than students who did not see an improvement in Academic Distress scores over the course of counseling (93.3% vs. 82.4%, \(p=.20\), Fisher’s exact test). When looking at differences in retention two semesters after students sought out counseling, findings revealed that students who saw an improvement in their Academic Distress subscale scores over the course of counseling were not retained at a greater rate than students who did not see an improvement in their Academic Distress subscale scores (88.9% vs. 72.3%, \(p=.09\), Fisher’s exact test). Finally, when examining retention rates 3 semesters after students sought out treatment, findings revealed that students who saw an improvement in Academic Distress subscale scores were not retained at a significantly greater rate than students who did not see an improvement in their Academic Distress subscale scores, (81.5% vs. 63.6%, \(p=.11\), Fisher’s exact test). Overall, racial/ethnic minority students who experienced an improvement in Academic Distress over the course of treatment as defined by moving from one cut score to another cut score do not have retention rates that are statistically different than racial/ethnic minority students who do not experience an improvement in Academic Distress.
Table 13
*Racial/Ethnic Minority Students Retention Rates by Semester*

<table>
<thead>
<tr>
<th>Sample</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Sample who Improved on Academic Distress</td>
<td>93.3%</td>
<td>88.9%</td>
<td>81.5%</td>
</tr>
<tr>
<td>Clinical Sample who did not Improve on Academic Distress Subscale</td>
<td>82.4%</td>
<td>72.3%</td>
<td>63.6%</td>
</tr>
</tbody>
</table>
Chapter 5
Discussion

The purpose this study was to explore the relationship between counseling, academic distress, and retention. Specifically, this study examined how academic distress changed for clients over the course of treatment and how changes in academic distress later related to retention. Overall, the findings from this study, which will be discussed in depth throughout the discussion demonstrated that complex nature of capturing the relationship between counseling and academic outcomes. To begin with, findings from this study demonstrated that academic distress decreased over the course of counseling; however the client change for those “academically distressed” did not exceed change experienced by the “academically distressed” PSYC 100 sample. Results on retention revealed that students who did not “improve” on academic distress over the course of treatment had lower retention rates than both the clients who “improved” as well as the general student body, noting the importance of decreased academic distress on retention.

Further, depression and racial/ethnic minority status were explored as moderators. A complex relationship was revealed between counseling, academic distress, and depression such that those with higher Depression scores were much less likely to be retained when they also had high levels of Academic Distress. Additionally, results focused on racial/ethnic minority clients revealed some preliminary differences in the percentage of students being retained for those who “improved” on academic distress over the course of treatment versus those who did not. Overall, the purpose of this study was to address a gap that exists between counseling and academic outcomes in an empirically valid manner with the aim of equipping counseling centers with data to demonstrate their impact on the academic mission of the university. Thus, the following
discussion will highlight the importance of examining the relationship between counseling, academic distress, and retention in nuanced ways.

A few recent studies have demonstrated that counseling positively impacts academic distress (Lockard et al., 2013; Lockard et al., 2012). Lockard et al. (2012) introduced using repeated measures of the CCAPS Academic Distress subscale as a way to examine the impact of counseling over time, introducing the CCAPS as valid way to assess academic change over the course of treatment. Findings from that initial study revealed that counseling does decrease academic distress over the course of treatment above and beyond what was experienced by a PSYC 100 comparison. It was recommended that future research examine academic distress among samples of students over a series of semesters and for a period longer than six sessions. This present study expanded on the Lockard et al. (2012) findings by including clients and PSYC 100 students from multiple semesters while additionally exploring outcomes for students who were considered “academically distressed.” Initial findings revealed in general, academic distress decreases over the course of treatment. This held true for both the overall sample of clients and the sample of clients who were considered “academically distressed.” These findings further replicated the Lockard et al. (2012) study by revealing that the average change on the Academic Distress subscale for clients exceeded the change experienced on the Academic Distress subscale for the PSYC 100 sample.

The link between counseling and decreased academic distress became more nuanced, however, when the current study examined change on Academic Distress for both clients and PSYC 100 students who were “academically distressed.” Findings revealed that clients who were “academically distressed” did not experience statistically greater change on their Academic Distress subscale scores over the course of counseling.
compared to the “academically distressed” students who comprised the PSYC 100 sample. The previous study referenced above (Lockard et al., 2012) that had examined Academic Distress over the course of counseling between clients and the PSYC 100 sample did not take into account the CCAPS cut-scores when examining change, which were implemented in 2012 after the manuscript had been accepted for publication (Center for Collegiate Mental Health, 2015; McAleavey et al., 2012). The findings from this current study add complexity to the previous findings that assert counseling decreases academic distress and casts doubt on the degree to which counseling is a mechanism of change for academic outcomes. These findings highlight the need for additional research to examine the nuanced findings and further explore the relationship, specifically focusing on what factors lead to the academic distress change for both a treatment seeking and non-treatment seeking sample.

It has been highlighted by prior research that academic concerns are an issue for treatment seeking students as well as non-treatment seeking students. A survey from the American College Health Association (2012) revealed that almost half of the college student population and 70% of counseling center clients reported difficulty with their academics, mainly stemming from personal concerns. For the current study, 71% of clients met criteria for being “academically distressed” as opposed to 21% of the PSYC 100 sample. This increased prevalence amongst counseling center clients could potentially be influenced by the impact of personal concerns on academics. Kumrei et al. (2010) revealed 57% of counseling center clients reported moderate to severe academic interference resulting from personal concerns while the nonclinical sample endorsed predominantly mild levels of interference from personal concerns. Thus, it is possible that what is influencing the increased academic distress for both samples comprise different
factors. For example, the PSYC 100 students who were “academically distressed” may not have been performing well at the start of the semester but made academic adjustments over the semester to decrease their academic distress, while students in counseling who were “academically distressed” focused on addressing personal, mental health concerns such as depression, which in turn potentially relieved their academic distress. Future studies exploring how other CCAPS subscale scores (e.g., Depression, Anxiety) change in relation to the Academic Distress subscale score for both a treatment seeking and non-treatment seeking sample would be beneficial. Being able to determine if there are differences that exist on various subscales amongst these two samples could potentially support the argument that different factors drive the change in academic distress while arguing against other phenomena, such as regression towards the mean. Additionally, adding a qualitative component to a study that explores what factors both the client sample and PSYC 100 sample attribute to decreased academic distress seems warranted to identify potential differences that exist between the samples.

Despite these potential differences, it is important to acknowledge this current finding aligns with prior research that has revealed engaging in college counseling is not related to improved academic performance (e.g., Illovsky, 1997; Lee et al., 2009). Studies have shown that the relationship between counseling and cumulative GPA is not correlated, particularly when controlling for precollege academic performance (Illovsky, 1997; Lee et al., 2009). Lee et al. (2009) also found that there was no significant difference between a clinical sample and general student body when examining credit discrepancy, defined as the number of registered credits vs. completed credits for a given semester. Although these studies focused on student GPA and credit discrepancy as the measure of academic performance, the Academic Distress subscale has been found to be
inversely related to GPA, such that the higher the Academic Distress score the lower the GPA (CCMH, 2009). These findings taken together suggest that counseling is not directly related to improved academic outcomes as defined by grades, credits or measured Academic Distress, particularly when comparing a non-treatment seeking sample to a treatment seeking sample, thus suggesting the relationship between counseling and academic outcomes is perhaps more complicated and nuanced than capturing it through a single academic lens.

Although several studies revealed no direct link between counseling and academic performance (as defined by GPA, credit completion, etc.), there has been a well-established series of findings that demonstrated counseling is positively related to increased retention (i.e. Ewing, 1997; Illovsky, 1997; Lee et al., 2009; Turner & Berry, 2000; Wilson et al., 1997). However, the present study did not replicate those results. Instead, this current study revealed that the general student body was retained at a greater rate than the client sample one semester after treatment was initiated (92.8% vs. 88.7%, respectively). Though the effect size was small and these differences dissipated after the first semester, this finding is nonetheless inconsistent with the prior literature referenced above (i.e. Ewing, 1997; Illovsky, 1997, Lee et al., 2009; Turner & Berry, 2000, Wilson et al., 1997). This shift in findings, particularly for the first semester, could be interpreted as a lack of evidence supporting the positive impact of counseling on academic outcomes. Or alternatively, given that clients are more distressed than non-treatment seeking populations on 7 of the 8 CCAPS subscales (CCMH, 2010), this finding could provide evidence that counseling centers are doing their job by keeping distressed “at-risk” students retained at comparable rates to the general student body.
Most of the studies that have focused on the impact of counseling on retention are approximately 20 years old with one of the more recent studies (Lee et al., 2009) being conducted approximately 7 years ago. Collectively, these prior studies have reported clients experience a 12%-14% increase in retention compared to a general study body (Ewing, 1997; Illovsky, 1997, Lee et al., 2009; Turner & Berry, 2000, Wilson et al., 1997). In particular, the study by Illovsky (1997) that revealed counseling was significantly related to retention reported that students in counseling had a 75% retention rate one semester following treatment as opposed to 68% retention rate for the general student body. The current national retention rate for first-time undergraduate students for one year at a 4-year institution is approximately 80%, which has slowly but steadily risen from 2006 to 2013 (76.5% to 79.6%; U.S. Department of Education, NCES, 2015). The average retention rate for the general student body in this study was approximately 85%, which 5% higher than the national average. These retention rates indicate that the university in this study is already facilitating high rates of student success, regardless of a student’s utilization of the counseling center. Further, the prior studies conducted 10-20 years ago had distinctively lower retention rates for the general student body (e.g., 68% reported by Illovsky, 1997) to serve as a comparison for the client sample. The existence of such a high retention rate in this sample may be producing a ceiling effect for this study, effectively making it difficult to evaluate the effect of counseling on retention, which based on previous research has been considered to be an established relationship.

It is also important to acknowledge in the last decade counseling center administrators and clinicians have been reporting an increase in symptom severity amongst counseling center clients (Brunner, Wallace, Reymann, Sellers, & McCabe, 2014). Notably, 94% of center directors reported seeing increases in the severity of client
concerns, including crises requiring immediate response, psychiatric medication issues, clinical depression, learning disabilities, and self-injury issues (Gallagher & Taylor, 2014). This is further supported by the most recent annual report from CCMH (2016) revealing a 30% increase in students seeking services over the last five years and an increase in self-reported serious suicidal ideation and non-suicidal self-injury. Given the notable increase in client severity and the finding that students in treatment are overall more distressed than non-treatment seeking students (CCMH, 2016; CCMH, 2010), it might be expected that clients have lower retention rates one semester post-treatment compared to the general student population and that the shift in findings underscores the increased severity amongst counseling center clients that has been anecdotally noted by counseling center administrators and clinicians and further supported by CCMH data in recent years (CCMH, 2016).

The goal of college counseling centers is focused on the psychological health of the students and their ability to function within the university academic environment. It is not uncommon for a clinician to make the recommendation for a student to withdraw from a class or even from the semester when it is deemed beneficial for the psychological health and overall well-being of the student (Sharkin, 2015). Choi et al. (2010) note, “Although student retention and graduation rates are important for higher education institutions, enhancing them is not necessarily a primary goal of personal counseling provided at counseling centers” (Choi et al., 2010, p. 298). Giddan et al. (1987) highlights the role of clinicians in student retention, stating “Counselors are sometimes unsure of ‘good’ reasons to drop out, unclear over the criteria for withdrawal, reluctant to coerce a student to stay, yet committed to helping each student formulate a constructive plan for a period away from campus” (Giddan et al., 1987, p. 7). Given that students are presenting
at counseling centers with increased severity and the central goal of counseling centers is to promote psychological health, it might be expected that clinicians are increasingly having discussions with students to help them evaluate the best academic decision for their mental health, which might result in the student withdrawing for the semester and possibly subsequent semesters to address mental health concerns.

Despite the complex role college counseling centers serve in the retention of students, it is apparent that the majority of students are entering treatment with academic distress. As previously noted, 71% of clients in this sample met criteria to be considered “academically distressed” while nationally, clinicians endorsed academic performance as a primary presenting concern for approximately 30% of clients (CCMH, 2016; CCMH 2015). Therefore, exploring the role that counseling centers play in retention of students who are “academically distressed” seemed warranted to further understand the nuanced relationship between counseling and academic outcomes. Findings from the current study revealed that clients who entered treatment “academically distressed” and experienced improved academic distress (moving from a higher cut score to a lower cut score) over the course of counseling had significantly greater retention rates (93.8%) one semester post-treatment than clients who did not experience an improvement in academic distress (84.6%). When these retention rates were then compared to the general student body, results revealed that clients who did not experience an improvement in academic distress also had retention rates (84.6%) significantly lower than the general student body (92.8%). These findings highlight that students who enter treatment “academically distressed” and do not experience a decrease in academic distress over the course of counseling are at greater risk to withdraw that first semester after treatment was initiated.
Although the effect size for these differences in retention rates was small and generally speaking the retention rates of students who did not improve were still notably high (84.6%), this finding is still likely to be viewed as important by campus administrators and decision makers where decisions within the university are often influenced by increasing competition in the marketplace and cost-benefit analysis (Baker, 2012; Scofield et al., in press, Varlotta, 2012; Watson, 2014). Given the steadily rising cost of college tuition, there is a substantial loss in revenue for the university when students do not return for a subsequent semester and/or transfer to another university. If counseling centers can attest that they contribute to the retention of students by demonstrating they help keep distressed “at risk” students retained who otherwise generally have greater attrition, then counseling centers can make the argument that they are not only economically beneficial to the university but they promote the university academic mission in a tangible way.

Despite this argument, it is important to acknowledge that 71% of clients entered counseling “academically distressed” but only 32% of those students met criteria to be considered “improved.” Given that students who experienced improvement in academic distress had higher retention rates highlights the importance of determining what factors differentiate students who express decreased academic distress vs. those who do not. Future studies exploring the contributing factors appear to be warranted. Additionally these findings suggest that clinicians should monitor clients’ academic distress over the course of treatment, specifically for those students who are “academically distressed.” Exploring what factors are influencing students’ distress, particularly if students are not experiencing an improvement, appears to be a fruitful area of reflection and discussion.
Research has found that one of the potential contributing factors to academic distress/academic performance are mental health concerns. The National Alliance on Mental Illness (NAMI) reported that 64% of students that leave college and no longer attend do so for mental health related reasons. Hysenbegasi et al. (2005) found that students battling with depression reported a decrease in approximately half of a letter grade compared to non-depressed students while Eisenberg and colleagues (2009) also found negative associations between depression and GPAs. At the same time, studies have revealed improving mental health is a protective factor against academic impairment for students (De Luca, Franklin, Yueqi, Johnson, & Brownson, 2016; Keyes et al., 2012). Prior research on the CCAPS subscales revealed a moderate, positive correlation between initial Academic Distress subscale scores and initial Depression subscale scores (McAleavey et al., 2012); however have not looked at if change over the course of treatment between these two subscales is related. For this current study, findings revealed the change scores between Academic Distress and Depression were moderately, positively correlated \((r=.49)\), indicating that often as one subscale changes the other subscale changes in the same direction. However, when examining the impact of change on retention for both these subscales, results indicated that students who improved on both subscales did not have greater retention rates (93.3%) than students who only improved on one subscale (90.8%) or neither subscale (83.5%) one semester after treatment was initiated. It is noteworthy though that there was a 10% increase in retention between those who improved on both subscales and those who improved on neither; however the rates were not statistically significant potentially due to the small sample size and lack of power. As mentioned previously though, a 10% increase in
retention is likely to be viewed as a valuable difference to campus administrators who often are looking for ways to retain students and expand the university.

Consistent with the previous findings, when exploring the predictive ability of Academic Distress and Depression change scores on retention, the change variables did not produce a significantly predictive model of retention. However, the regression model that focused on the final subscale scores of both Academic Distress and Depression was significant, such that students who scored one point higher on their final Academic Distress score were almost twice as likely to not be retained the subsequent semester. Additionally the model revealed that the interaction of the two final subscale scores impacted retention. Specifically, the influence of the final Academic Distress subscale score on retention varied for students based on their final score of Depression such that at high values of Academic Distress, the final score on Depression had a large effect on the probability of retention. Likewise, those with higher Depression scores were much less likely to be retained when they also had high levels of Academic Distress. For example, students who had a final subscale score of “4” on both subscales had a .43 probability of being retained the following semester while students who had a final Depression subscale of “4” and final Academic Distress subscale of “3” had a .81 probability of being retained. Further, students who have a final Depression subscale score of “0” and final Academic Distress subscale score of “4” had a .90 probability of being retained. These findings highlight that it is the interaction of the severity of the final subscale scores that had a greater influence on retention than the influence of one subscale alone. These findings potentially strengthen the argument that a cyclical pattern develops between depression and academic distress, where over time they both intensify each other (DeRoma et al., 2009; Eisenberg et al., 2009).
There are multiple theories that have been devised attempting to explain the cyclical relationship. For example, one theory asserts depression impacts students’ academic self-efficacy, impacting their motivation and attitude towards academics, which in turn increases the students’ depression due to perceived failure (DeRoma et al., 2009; Ellis et al., 1997; Multon et al., 1991). Further research is needed to explore such theories and examine what factors influence distress in both realms as well as what factors decrease distress in both areas. Despite that, findings from this study highlight the importance of clinicians routinely checking in with clients who endorse academic distress and/or depression about if the existence of one concern is influencing the emergence of /or exacerbating the other concern. Monitoring CCAPS subscales, particularly Academic Distress and Depression over the course of treatment and reflecting with clients on how the scores have changed/not changed can encourage clinicians and clients to have more in depth discussion about a possible cyclical pattern and factors influencing client distress, thus leading to a discussion about options (e.g., reducing credits) and resources on campus that may be additional assistance (e.g., math lab, academic advisors, etc.). These types of discussions and interventions seem imperative given that clients who are high on Academic Distress and high on Depression at the end of treatment are at a greater risk of withdrawing from school.

Research has also highlighted that students who identify as racial/ethnic minorities are at increased risk for withdrawing from school (NCES, 2009). Prior studies have suggested that university counseling centers are in a position to serve as a support service for racial/ethnic minority students on campus by promoting students’ well-being and academic success. A recent study by Lockard et al. (2013) provided support for this idea by revealing that academic distress decreases over the course of treatment regardless
of a student’s race/ethnicity, signifying that counseling center clinicians are likely attending appropriately to academic distress across different racial/ethnic minority students. The current study expanded on this recent finding by examining race/ethnicity as a potential moderator for the relationship between academic distress and retention, specifically focusing on comparing retention rates of racial/ethnic minority clients to that of the racial/ethnic minority general student body. Findings revealed racial/ethnic minority clients were not retained at a greater rate than the racial/ethnic minority general student body one semester after initiating treatment (87.9% vs. 91.6%, respectively). This finding was consistent two semesters after initiating treatment as well as three semesters after initiating treatment. When the impact of counseling on retention was examined for racial/ethnic minority clients who entered treatment “academically distressed,” findings revealed that there were no significant differences between the retention rates of the racial/ethnic minority students who experienced an improvement in academic distress over the course of counseling vs. those who did not one semester after treatment was initiated (93.3% vs. 82.4%, respectively). Again these findings were consistent for two semesters after treatment had been initiated (88.9% vs. 72.3%, respectively) and three semesters after treatment had been initiated (81.5% vs. 63.6%, respectively).

Although these findings were not statically significant, it is notable that for racial/ethnic minority clients who experienced improved Academic Distress over the course of treatment had a 10.9% increased retention rate one semester after initiating treatment, a 16.6% increased retention rate two semesters after initiating treatment, and a 17.9% increased retention rate three semesters after initiating treatment compared to those racial/ethnic minority clients who did not experience an improvement in Academic Distress.
Distress. The lack of significance could potentially be attributed to the low sample size and lack of power to determine statistical significance within this sample. These preliminary findings suggest further research examining the retention rates of racial/ethnic minority clients is warranted, particularly exploring the relationship between retention and decreased academic distress. Studies thus far that have examined racial/ethnic minority retention have revealed self-esteem, academic self-efficacy, and perceptions of the university environment were factors that predicted retention. Clinicians are in a unique position to advocate for and create a supportive environment that fosters healthy self-esteem and academic self-efficacy while respecting individual differences (Rigali-Oiler & Kurpius, 2013). Determining if differences in retention rates exist between racial/ethnic minority clients who experience an improvement in academic distress vs. those who do not creates an avenue for clinicians to explore the role they play in providing support for racial/ethnic minority clients. These findings once again are likely deemed important by college and university administrators, particularly as the representation of racial and ethnic minority students in higher education continues to be a significant concern and universities work to address issues of diversity, inclusion, and equal access on college campuses (Castanellos, Gloria, Besson, Harvey, 2016).

**Limitations and Future Research**

It is important to acknowledge the limitations of this study that affect the generalizability of the findings. First, the institution studied had one of the highest average annual retention rates in the country. This produced a potential ceiling effect (i.e., it is hard to improve on) and may also have served to exaggerate negative academic outcomes when comparing clients to the general student body (e.g., clients have a lower retention rate than the general student body one semester post-treatment). Therefore, an
institution with a more representative retention rate could provide greater capacity for
detecting the impact of counseling on retention. Further, it is unknown why students
sought out treatment or what the focus of session consisted of over the course of
treatment. Therefore, we do not know if students discussed academic concerns, felt their
academics were problematic, or even if they viewed counseling as beneficial to their
academic progression. Likewise, we do not know for students who experienced a
decrease in academic distress what factors influenced a relief in concerns, such as the
therapeutic alliance or behavioral modifications. A future direction in this area of research
is to ascertain the reason(s) the students sought out treatment and examine which aspects
within counseling helped to account for their reduction in academic distress. It is also
important to acknowledge the majority of the clinicians in this study comprised trainees
(i.e. interns, graduate assistants, practicum students). At the time of data collection,
repeated administration of the CCAPS had not been implemented fully amongst the
counseling center staff and was only required for training-level clinicians. Given the
training nature of the clinicians, it is possible they were assigned “higher functioning”
clients, potentially impeding the range of issues and severity of issues within the clinical
sample used for this study. If the sample was comprised of a more “high functioning”
client sample, their graduation rates may not be have been fully representative of clients
as a whole. In addition, it is well understood that counseling centers may refer complex
cases requiring long-term treatment out to community providers, which again potentially
impacted the range of issues and severity of issues within the client sample, resulting in
inflated retention rates. Further, given only trainees were required to repeatedly
administer the CCAPS-34 over the course of treatment resulted in a smaller final sample
size than is typical when looking at multiple semesters of students who sought out
services at this university counseling center. This smaller sample size impacted the ability to conduct particular analyses, specifically when looking at students who were “academically distressed” and “depressed” as well as racial/ethnic minority clients. Redoing those analyses with a larger sample size would be a beneficial next step so more fine-grained analyses can be conducted. Finally, due to the de-identified nature of the PSYC 100 sample, the principal investigator did not have access to the retention rates of the PSYC 100 sample. Therefore, the finding that both clients and PSYC 100 students who were “academically distressed” experienced similar decreases in Academic Distress over time was not able to be further explored to determine if/how those two specific samples differed on their retention rates, which would be a fruitful area of future research.
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