

ABSTRACT

Title of dissertation: PREDICTORS OF SENSE OF BELONGING FOR STUDENTS WITH PSYCHOLOGICAL CONDITIONS

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The purpose of this study was to develop a portrait of students with psychological conditions, to determine the predictors of sense of belonging for these students, and to draw comparisons between the collegiate experiences of students with, and those without, psychological conditions. Using data from the 2009 Multi-Institutional Study of Leadership, a sample of students who self-reported having a psychological condition and a randomly selected comparative sample of students without psychological conditions were drawn. Descriptive statistics were used to develop a portrait of students with psychological conditions relative to gender, class standing, academic performance, and co-curricular student involvement. Chi-square tests for independence and independent groups t-tests were used to make comparisons between students with psychological conditions and those who did not report having a psychological condition. Using a hierarchical multiple regression, framed in Astin's (1993) I-E-O model, predictors of

sense of belonging were identified for students with psychological conditions and the comparative sample. Equality of beta coefficient testing was conducted to determine if the variables that predict sense of belonging for students who self-reported a psychological condition differed significantly from the predictors of sense of belonging for the comparative sample.

Results indicated that the distribution of students with psychological conditions differed significantly across categories related to gender, class standing, college GPA, and involvement in specific types of co-curricular activities. Additionally, students who self-reported a psychological condition reported lower perceptions of sense of belonging compared to those who did not. The regression analyses and equality of beta coefficient testing revealed that there are no significant differences between the variables that predict sense of belonging for students with psychological conditions and the comparative sample. Implications for practice and directions for future research emphasize the need for better understanding the issue of college student mental health and developing interventions that can be applied in and outside of the classroom to assist students with psychological conditions in collegiate success.

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PSYCHOLOGICAL CONDITIONS

by

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Dedication

To my best friend and the love of my life, Sean Loren Mackie.

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Chapter 1: Introduction

I could hear the mumbling over my shoulder becoming increasingly louder with each passing moment. Initially, I could not make out the words, but they soon became clear. “I don’t care who you work for. I don’t care how important you think you are. You’re a racist. Call the cops. I don’t care!” the classmate behind me was nearly yelling now. It was a surreal moment. It appeared he was having a conversation with someone none of us could hear or see. The professor, seemingly unaware of what was happening in the back of the room continued to lecture, while those of us sitting near this student glanced sideways at each other, fear creeping into our minds. Class ended minutes after the outburst at which time classmates gathered into a circle to discuss what had just happened. Amidst the chattering and nervous discussion a phrase was commonly repeated among group members: “I thought he was going to go Virginia Tech on us.”

Statement of the Problem

The Virginia Tech Shooting

In April 2007, the Virginia Tech shooting occurred leaving, 32 dead and 25 wounded (TriData Division, 2009). It was later determined that the shooter suffered from severe anxiety disorder, which played a role in the events that took place that day. From that point forward, it seems that mental health issues have captivated the media and taken center stage in society as a growing number of individuals experience mental health issues, ranging from mild to severe, diagnosed and undiagnosed. The Virginia Tech shootings were a reminder of the broader public health issue of mental illness (Hunt & Eisenberg, 2010) and have had a lasting impact on the landscape of higher education.

Mental Health in the Broader Society

General mental disorders are common in the United States. According to the National Institute of Mental Health (NIMH), approximately one quarter of the adult population, 26.2%, is eligible for diagnosis of one or more disorders (National Institute of Mental Health [NIMH], n.d., *a*). Of the individuals with a disorder, only 41.1% receive treatment in a given year (NIMH, n.d., *a*). Similarly, mental disorders are widespread among children and adolescence, classified as individuals who range in age from 13-18 years old (NIMH, n.d., *b*), with 46.3% experiencing a mental disorder.

Stigmatization and Mental Health

The number of expressions used to describe people who are regarded as mentally ill is almost as commonplace as the prevalence of mental disorders. Some phrases are meant to seem humorous such as *they don't have both oars in the water*. Other terms are implicit based on a situational context such as *going postal* or *going Virginia Tech*. Still, others are explicit such as calling an individual *psycho*, or saying someone is *off their meds*. No matter what variation of catchphrase is used, all share one thing in common: the negative and stigmatizing manner in which individuals perceived as experiencing a mental disorder are personified in today's society.

The media plays a role in perpetuating the negative stigmatization of individuals with mental illness (Corrigan et al., 2005). The media does so by reporting on a large number of stories related to mental illness, self-harm and harm to others, suicide, and mental illness as a legal defense (Corrigan et al., 2005). Frequently, these stories are located in the front section of the newspaper in a highly visible, easily accessible location for readers to find such information (Corrigan et al., 2005). Given the widespread nature

of mental disorders among the United States population, it is necessary to overcome stigmatization and create an inclusive society for such individuals. However, this is not simply a broader societal problem; there are increasing numbers of students on today's college campuses with mental health disorders (Bertram, 2010; Hunt & Eisenberg, 2010).

Stigmatization and College Campuses

The negative stigmatization of individuals with mental disorders that occurs in the larger society also occurs on college campuses. The appearance of being physically unkempt and a deficit in social-skills are among a number of indicators that signal mental illness to the general public (Bathje & Pryor, 2011). Individuals with mental health conditions have reported a number of negative responses from others such as being perceived as incompetent, damaged, helpless, and mentally retarded (Dickerson, Sommerville, & Origoni, 2002). Additionally, individuals with mental health conditions have been the target of fear and offensive comments from the general public (Dickerson et al., 2002). Such negative stigmatization can affect interpersonal relationships and make it difficult for individuals, particularly college students, to develop the peer connections that are critical for building a sense of community and belonging on their college campus. Among college students, representations of the mentally ill include characteristics that are both psychiatric and social in nature. College students attributed the following psychiatric characteristics to those they perceived as mentally ill: unbalanced, crazy, nervous, and dangerous (Bovina & Panov, 2006). Social characteristics such as being antisocial, strange, and solitary have also been attributed to those perceived as mentally ill (Bovina & Panov, 2006). The negative characterizations students have of people with mental health conditions causes them to put social distance

between themselves and others they perceived as suffering from some type of mental illness (Bovina & Panov, 2006). Thus, students who are perceived as mentally ill may find it more difficult to build relationships.

Changes in the Landscape of Higher Education

Threat Assessment Teams

Following the Virginia Tech shootings, the climate and landscape of higher education changed regarding campus safety, threat assessment, and policies and practices related to students who may be a threat to the campus community. While some universities had threat assessment teams in place, following the Virginia Tech shootings the national conversation on college campuses shifted to establishing threat assessment teams or improving existing ones. Threat assessment teams are commonly referred to as Behavior or Behavioral Intervention Teams (BIT) (Harrisburg Area Community College [HACC], 2012; University of South Carolina, n.d.) Behavior Evaluation Threat Assessment (BETA) teams (University of Colorado-Denver, 2012; University of Maryland, n.d.) or some other similar variation such as Threat Assessment Team (Virginia Polytechnic Institute and State Institution [Virginia Tech], 2013). The composition of these teams varies, but they often include staff members from the counseling center, campus safety/law enforcement, and student affairs/student life, in addition to faculty and academic officers, university legal counsel, human resources, and campus housing whenever appropriate (HACC 2012; University of Colorado-Denver, 2012; University of Maryland, n.d.; University of South Carolina, n.d.; Virginia Tech, 2013). Though the structure of threat assessment teams vary, at least one state has

developed specific legislation that dictates the composition, structure, and reach of threat assessment teams- the state of the Virginia.

Threat Assessment Legislation

In 2008, Virginia introduced legislation requiring all public state colleges and universities to have a threat assessment team on each of their campuses (Statute 23-9.2:10, Violence prevention committee; threat assessment team, 2008). Briefly stated, each public college or university in the state of Virginia must have a threat assessment team and policies and procedures in place to respond to behaviors by individuals who may be a threat to the campus community. The law states that members from the following functional areas be included: law enforcement/campus safety, student affairs, human resources, mental health/counseling center, and whenever possible, university counsel. The reach and authority of these threat assessment teams is further specified by the legislation. The Virginia State Legislation allows threat assessment teams access to certain criminal and health records of individuals they have deemed as a possible threat to campus safety or displaying significantly disruptive behaviors. In an effort keep college campuses safe, it would not be surprising if other states are not already in the process of developing legislation similar to that of the Virginia threat assessment team policy. However, in the absence of national policy, a cottage industry has developed to fill the gap in guidance and education for behavior intervention and threat assessment teams.

Threat Assessment: A Cottage Industry

The National Behavioral Intervention Team Association (NaBITA) (National Behavioral Intervention Team Association [NaBITA], 2012) and the National Center for Higher Education Risk Management (NCHERM), otherwise referred to as NCHERM,

LLC. (National Center for Higher Education Risk Management [NCHERM], 2012) are seeking to fill the knowledge gap on issues related to campus threat, risk, and safety management. NaBITA operates as a non-profit association offering membership (at a cost), which allows individuals or institutions access to conferences, plenary sessions, and a variety of online resources related to the development and advancement of behavior intervention teams. NCHERM is a for-profit business that offers a variety of services, including consulting services, workshops, student programming, and legal representation on a number of risk management issues for an associated cost to the institution. The thriving existence of both organizations highlights the high priority of campus administrators and educators to better understand the underlying issues that lead to campus safety threats and how to best address them. The aforementioned literature illuminates the lasting impact of the Virginia Tech shootings as they not only brought mental health concerns front and center in the consciousness of the public, but also resulted in sweeping changes in the landscape of higher education. These policy changes have fundamentally altered the essence of *the typical college experience* to include an ongoing dialogue about mental health issues, campus safety, and risk management. To further contextualize the issue of college student mental health and the concept of sense of belonging, what follows is a review of key terms used in this study.

Definition of Key Terms

Sense of Belonging

Sense of belonging is perceptive and affective in nature, and reflects the extent to which individuals feel as though they are central to, and valued by, the community they are a part of (Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992). For college

students, such identification and affiliation with a campus community stems from students developing a support network that leads them to feeling connected to the social and academic experiences that comprise their collegiate experience (Maestas, Vaquera, & Zehr, 2007).

Mental Health and Mental Illness

Mental health is found to have an effect on one's physical, emotional, cognitive, and interpersonal functioning (Kitzrow, 2009). The National Alliance on Mental Illness (NAMI) (2011) defines mental illnesses as:

...Medical conditions that disrupt a person's thinking, feeling, mood, ability to relate to others and daily functioning. Just as diabetes is a disorder of the pancreas, mental illnesses are medical conditions that often result in a diminished capacity for coping with the ordinary demands of life." (NAMI, 2011)

NAMI's (2011) definition suggests that the construct of mental illness, and by extension the impact on one's mental health, is broad yet inclusive of conditions that effect cognitive and psychological functioning, as well as one's affect and ability to interact with others to the point that it greatly diminishes the capacity to cope and manage life's daily challenges.

Stigmatization

A stigma is a marker or indicator that signifies an individual as different or *other* from the larger social referent group (Baumann, 2007; Thornicroft, Rose, Kassam, & Sartorius, 2007). This established *otherness* results in negative attributions being made about an individual or particular group (Baumann, 2007; Thornicroft et al., 2007).

Thornicroft, Rose, Kassam, and Sartorius (2007) conceptualize stigma, and the

subsequent stigmatization of individuals or groups, as an umbrella term that captures the lack of informed knowledge about an individual or group, the attitudes and prejudice that stem from this lack of knowledge, and the discriminatory behaviors applied towards members of the stigmatized group.

Social Distancing

The emotional space individuals put between themselves and another in social situations is social distancing (Baumann, 2007). Low social distance is characterized by a sense of shared identity as members of the in-group, based on common group experiences, beliefs, and norms (Baumann, 2007). Comparatively, high social distance is characterized by interactions marked by detachment, and oftentimes feelings of fear of the *other* (Baumann, 2007). Social distance occurs when individuals are perceived as different or acting in a manner that is outside the acceptable norms and expectations of the in-group, as is the case for individuals with mental health conditions.

Students with Psychological Conditions

Throughout this study, the population of interest is referred to as “students with psychological conditions.” This term refers broadly to students who self-reported having a psychological, mental, or emotional condition lasting six months or longer. The use of the term *psychological condition* was intentionally broad so as to allow students the freedom to report a persistent condition without having to specify a particular diagnosis. The focus of the current study is to understand the possible impact a psychological condition has on a student’s collegiate experience and outcomes.

Significance of the Study

The social distancing that occurs as a result of negative social representations of individuals with mental health conditions is problematic as sense of belonging is related to a number of important collegiate outcomes, including academic performance and academic adjustment (Pittman & Richmond, 2008). As such, educators need to be aware of the experiences of students with mental health conditions and how to best support them in order for the college environment to provide a positive learning and social experience for all members of the campus community. Given the prevalence of mental health issues on college campuses, and the important role sense of belonging plays for college students and the associated outcomes, it is notable that there appears to be a dearth of literature as it pertains to intersection of mental health and sense of belonging among college students.

Existing literature has explored predictors of sense of belonging for students based on racial/ethnic identities (Hausmann, Ye, Schofield, & Woods, 2009; Johnson et al., 2007; Strayhorn, 2008), year in school (Hoffman, Richmond, Morrow, & Salomone, 2002; Johnson et al., 2007; Pittman & Richmond, 2007; Pittman & Richmond, 2008;), and at a variety of institutions such as community colleges (Hagerty, Williams, Coyne, & Early, 1996; Hagerty, Williams, & Oe, 2002), Hispanic Serving Institutions (Maestas et al., 2007), and four-year institutions (Hoffman et al., 2002; Johnson et al., 2007; Pittman & Richmond, 2007; Strayhorn, 2008). In addition to the student characteristics of race/ethnicity and year in school, gender (Cheng, 2004; Maestas et al., 2007), socioeconomic status (Cheng, 2004; Hagerty et al., 2002; Pittman & Richmond, 2007), and parental educational attainment (Maestas et al., 2007; Pittman & Richmond, 2007)

have been included in the existing studies relating to sense of belonging among college students. However, what has not been studied is sense of belonging for students with mental health issues. This is troubling given the increasing numbers of students with mental health issues who are now attending colleges and universities across the country (Bertram, 2010; Hunt & Eisenberg, 2010). Thus, exploring sense of belonging for students who experience mental health issues will provide a new perspective on a growing population of college students.

Purpose of the Study

Using data from the Multi-Institutional Study of Leadership (MSL), the current study has two main purposes. First, this study seeks to provide a descriptive portrait of students with mental health disorders. Stated another way, *who are students with mental health issues?* During the 2009 data collection of the MSL, students self-reported if they had a psychological condition that lasted six months or longer. Therefore, students who indicated that they indeed had a psychological, mental, or emotional condition lasting six months or longer comprise the sample for this study, identified throughout the study as *students with a psychological condition*. Second, it is important to determine what aspects of the collegiate environment are related to sense of belonging for students with a psychological condition. Sense of belonging is defined in this study by students' responses to the belonging climate scale. Three items comprise the scale: *I feel valued as a person at this school; I feel accepted as a part of the campus community; I feel I belong on this campus*. Based on the findings and results of this study, implications for practice and directions for future research strived to situate students with psychological conditions within the broader college student population. This is particularly important as student

affairs educators, while not trained as counseling professionals, need to be attuned to the experiences and needs of students with psychological conditions as it is likely that more and more students arriving on college campuses will experience a mental health issue at some point during their college education.

Research Questions and Hypotheses

The following research questions guided the study:

1. What does the descriptive profile of students with psychological conditions depict based upon gender, year in school, institution size and selectivity, academic performance, and student involvement compared to students who do not report having a psychological condition?
2. After controlling for students' input and demographic characteristics, what environmental variables predict sense of belonging for students with psychological conditions?
3. Do the predictors for sense of belonging differ between students with psychological conditions and those who do not report having a psychological condition?

Due to the impact of mental health on cognitive processes such as critical thinking, comprehension, and the application of learning strategies (American College Health Association [ACHA], 2010; Brackney & Karabenick, 1995; Furr, Westefeld, McConnell, & Jenkins, 2001), it was hypothesized that the comparative analysis would demonstrate the following results:

1. Academic performance, as measured by grade point average (GPA), for students with psychological conditions will be lower than that of students who

did not report having a psychological condition due to the impact of mental health on cognitive processes such as critical thinking, comprehension, and application of learning strategies.

2. Related to the aforementioned hypothesis, it is anticipated that the distribution of students who self-reported a psychological condition will decrease as class-level increases due to attrition during the earlier years in college resulting from academic challenges (Kitzrow, 2009).

Related to student involvement patterns, it was hypothesized that student involvement patterns would reflect that fewer students with psychological conditions will be involved in student organizations due to the impact of mental health issues on inter- and intra personal skills compared to students who do not have a psychological condition (Bovina & Panov, 2006; Choenarom, Williams, & Hagerty, 2005; Kitzrow, 2009).

The dearth of literature exploring sense of belonging as it pertains to college students with psychological conditions does not allow for a directional hypothesis to be made related to the variables that predict sense of belonging for the sample in this study and how those predictors may differ from students who do not have a psychological condition.

Chapter 2: Literature Review

The literature review that supports the content and design of the current study consists of two main components: sense of belonging and college student mental health. Scholarship pertaining to sense of belonging is organized in the following manner: First, an overview of how researchers have defined and explained sense of belonging in the literature establishes the foundation from which sense of belonging was conceptualized in this study. Next, interdisciplinary literature was used to determine the relationship between sense of belonging, cognitive and affective meaning making, and the outcomes associated with sense of belonging for the college student population. Third, personal characteristics and environmental influences that predict sense of belonging for the college student population were reviewed. Lastly, a summary of the landscape of sense of belonging literature establishes the unique contributions this study can make by exploring sense of belonging for college students with psychological conditions.

As stated in Chapter 1, the goal of this study was to situate college student mental health within the broader campus community, rather than a clinical setting. Thus, the literature reviewed pertaining to college student mental health emphasizes the types of mental health issues, frequency of occurrence, and outcomes associated with mental health issues for college students; rather than attempting to define the pathology or predictors of mental health issues among college students. Therefore, an overview of mental health issues and college students is followed by the outcomes effected by one's mental health, including peer relationships, college adjustment, and academic performance. Chapter 2 concludes with establishing the connection between sense of

belonging and mental health through a theoretical framework that guides the study and is the lens through which the findings were viewed.

Sense of Belonging: An Overview

Sense of belonging is a basic human need (Baumeister & Leary, 1995; Hagerty et al., 2002), fundamental to motivation (Baumeister & Leary, 1995), psychological (Hagerty et al., 1992; Hagerty et al., 2002; Hausmann et al., 2009), and social functioning (Hagerty, et al., 2002). The notion of sense of belonging is affective, evaluative, and perceptive in nature (Hagerty et al., 1992), and is more complex than the construct of social support (Hagerty et al., 1996). Thus, it is not surprising that sense of belonging influences individuals' thoughts, behaviors, and emotions (Baumeister & Leary, 1995). Though the term *sense of belonging* is often found in the literature, scholars have also referred to this concept as relatedness (Pittman & Richmond, 2008), connectedness (Hill, 2006; Pittman & Richmond, 2008), and adjustment (Tao, Dong, Pratt, Hunsberger, & Pancer, 2000). Whether one uses the term *sense of belonging* or *connectedness*, there appears to be agreement about what it means to have a sense of belonging.

Broadly, the term sense of belonging captures the belief that one is identified with, or has membership within, a particular group or community (Hausmann et al., 2009; Pittman & Richmond, 2008). For college students, sense of belonging reflects the extent to which they are integrated or feel affiliation with the campus environment (Hausmann et al., 2009; Hoffman et al., 2002; Maestas et al., 2007; Pittman & Richmond, 2007; Strayhorn, 2008). Perhaps more important than simply feeling affiliation with a group or environment, sense of belonging leads individuals to feel as though they are valued or important within the environment or social referent group (Hagerty et al.,

1992). Sense of belonging is important at various strata in society. Individuals, families, and communities are all affected by sense of belonging (Hill, 2006). It has been proposed that individuals who perceive a decreased sense of belonging within their social community or environment experience challenges with psychological functioning and social interactions (Hagerty et al., 2002). Further, Baumeister and Leary (1995) hypothesize that a lack of belonging results in stress, maladjustment, and possible health problems. Therefore, it is important to further expand upon outcomes associated with sense of belonging.

Why is Sense of Belonging Important?

What follows is an overview of sense of belonging, including how it is defined and established amongst individuals. Next, outcomes associated with sense of belonging will be discussed, followed by what individual qualities, characteristics, traits, and experiences are related to, and predictive of, sense of belonging. Finally, a brief review of the methods used and the populations studied in existing literature on sense of belonging concludes the literature review on sense of belonging.

Sense of belonging has been explored across multiple disciplines: sociology (Hoffman et al., 2002; Johnson et al., 2007), psychology, psychiatry, and nursing (Hill, 2006; Hoffman et al., 2002). Interdisciplinary literature defines sense of belonging as individuals' perceptions that they are an integral part of the environment due to their participation as a member of the community (Hagerty et al., 1992). Sense of belonging is the affective feeling or perception that one is valued or important within the environment or social referent group (Hagerty et al., 1992).

In order to belong, Baumeister and Leary (1995) propose that individuals need frequent, pleasant interactions with others. *Pleasant interactions* reflect a durable interpersonal bond between two people in which an element of care and concern exists (Baumeister & Leary, 1995). Individuals' perceptions that they belong influence the ways in which they interpret and make sense of situations and events, and influences emotional and affective states (Baumeister & Leary, 1995). When individuals experience themselves as a key part of their environment and social referent groups, cognitive and emotional information is processed as inherently positive. Similarly, when one perceives a lack of belonging, the cognitive and emotional processing that builds the schema for interpreting life's experiences is inherently negative. Hagerty, Lynch-Sauer, Patusky, Bouwsema, and Collier's (1992) use of model cases attempts to clarify the mechanisms and contexts by which individuals are willing and/or able to engage in building a sense of belonging within the social, physical, and spiritual facets of their lives.

Hagerty et al. (1992) identified two attributes specific to experiencing a sense of belonging. First, individuals must feel valued and important to the referent group (Hagerty et al., 1992). Second, they must experience fit, or congruency, between themselves and the referent group (Hagerty et al., 1992). Having clearly defined the attributes of sense of belonging, antecedents and consequences were identified. Antecedents are the factors, characteristics, or qualities that allow a phenomenon to occur (Hagerty et al., 1992). In this case, the phenomenon is sense of belonging and the antecedents are: emotional and physical energy for involvement, willingness and ability to engage in meaningful interactions, and the opportunity for mutually shared characteristics (Hagerty et al., 1992). The energy levels, ability, and willingness vary

based upon the person's emotional and psychological condition. For instance, Hagerty et al. (1992) suggests that a clinical condition such as depression may influence one's energy, motivation, willingness, and capacity to engage in meaningful interactions with the referent group, resulting in a decreased ability to build a sense of community, compared to others unaffected by depression. Three consequences related to sense of belonging exist.

Sense of belonging results in the following three consequences: involvement with the referent group in social, spiritual, or physical contexts; the belief that the involvement or engagement is meaningful; the development of a framework of emotional and behavioral responses predicated on the sense of belonging (Hagerty et al., 1992).

Baumeister and Leary (1995) and Hagerty et al. (1992) establish sense of belonging as being related to, and influencing, a variety of psychological and emotional outcomes. A number of studies support their suppositions and strengthen the connection between sense of belonging and the psychological and emotional outcomes associated with it.

Sense of Belonging and Psychological/Emotional Outcomes

Scholars have identified positive results associated with sense of belonging, as well as the negative outcomes resulting from a lack thereof. Positive perceptions of sense of belonging are related to psychological and emotional outcomes such as increased self-worth, and decreased feelings of anxiety, depression, social withdrawal, and somatic complaints (Lee & Robbins, 2000; Pittman & Richmond, 2007; Pittman & Richmond, 2008). Pittman and Richmond's (2008) study provides a more in-depth analysis of the effects of sense of belonging on college students' psychological and emotional states.

The purpose of Pittman and Richmond's (2008) study was to explore how sense of belonging and quality of friendships influence students' college adjustment. The study was predicated on the theory that students will experience increased stress and emotional distress if they fail to have a connection with a group or community (Pittman & Richmond, 2008). Freshmen enrolled in an introductory psychology class at a regional state university were invited to participate in the study during the fall semester. Of those invited, 79 participated in the study. Data collection occurred at two points: once during the fall semester, then again during the spring. Participants completed five self-report questionnaires on demographics, university belonging, relationships with friends, self-competence, and problem behaviors. All instruments, with the exception of the demographic questionnaire, were subjective self-report Likert scales.

The demographics questionnaire collected information on age, ethnicity, gender, grades, living arrangements, employment, parental income, occupation, and educational level. Four instruments were used in this study: the Psychological Sense of School Membership (PSSM); the Inventory of Parent and Peer Attachment (IPPA); the Self-Perception profile for College Students, and the Young Adult Self-Report (YASR). First, the PSSM (Goodenow, 1993 as cited in Pittman & Richmond, 2008) measured sense of belonging within the college community setting. Originally used with middle school students, but adapted for use with a college-aged population, the PSSM was used by the authors in a previous study and yielded good internal consistency and concurrent validity. Second, the IPPA (Armsden & Greenberg, 1987, as cited in Pittman & Richmond, 2008) evaluated participants' relationships with friends at the university. Third, Pittman and Richmond (2008) sought to measure students' reports of scholastic competence, social

acceptance, and self-worth, referred to as self-competence, via the Self-Perception profile for College Students (Neeman & Harter, 1986, as cited in Pittman & Richmond, 2008). Finally, problem behaviors were measured with the YASR (Achenbach & Rescorla, 2003, as cited in Pittman & Richmond, 2008). Students reported on their internalizing and externalizing problem behaviors. Internalizing behaviors include anxiety, depression, being withdrawn, or experiencing physical somatic symptoms. Externalizing behaviors are behaviors construed by the observer as intrusive, aggressive, or breaking the rules.

Overall, Pittman and Richmond's (2008) study resulted in a number of relevant and important findings associated with the collegiate population. First, sense of belonging to the university is related to self-perceptions and social acceptance. Specifically, students who reported a higher sense of belonging were more likely to attribute positive self-perceptions related to their social acceptance on campus. Similarly, those who reported higher levels of sense of belonging also reported higher levels of scholastic competence (Pittman & Richmond, 2008). Whereas sense of belonging was positively related to perceptions of social acceptance and scholastic competence, it was inversely related to internalizing behavior problems. Students who experienced positive changes in their sense of belonging while in college demonstrated decreased levels of internalizing behavior problems over time. Pittman and Richmond (2008) caution readers that they did not establish a causal link between the independent variables of friendship quality and sense of belonging to the dependent variable of adjustment to college. The use of a longitudinal design provided a more accurate picture of change over time; however, the use of self-reports is a subjective measure that might be better

supplemented by objective measures such as grade reports and behavior observations in the residence halls (Pittman & Richmond, 2008). In spite of the limitations acknowledged by the authors, this study has many strengths and extends current literature on sense of belonging as it pertains to the psychological and emotional states of college students.

Pittman and Richmond's (2008) results highlighted the link between sense of belonging and self-perceptions among the college student population, as well as the important role sense of belonging plays in reducing psychological distress, as measured in the study as internalized problem behaviors. These findings are consistent with Baumeister and Leary's (1995) hypothesis that sense of belonging influences individuals' emotional and affective states. Pittman and Richmond's (2008) findings also provide support for Hagerty et al.'s (1992) framework of antecedent and consequences associated with sense of belonging, particularly as sense of belonging influences individuals' framework of emotional and behavioral responses. This was demonstrated by the finding that positive changes in sense of belonging over time were associated with decreased internalized behaviors (i.e. anxiety, depression, physical symptoms.) In addition to the emotional and affective outcomes associated with sense of belonging, there are a number of collegiate outcomes influenced by this construct.

Sense of Belonging and Academic Outcomes

Sense of belonging, as it pertains to college students, is the extent to which the student integrates into the campus environment (Hoffman et al., 2002) or the "psychological sense of identification and affiliation with the campus community" (p.650, Hausmann et al., 2009). Sense of belonging among college students has been

associated with improved academic performance (Hausmann et al., 2009; Pittman & Richmond, 2007; Pittman & Richmond, 2008), success with, and time spent, studying (Meeuwisse, Severiens, & Born, 2010; Strayhorn, 2008), and GPA (Hausmann, et al., 2009; Strayhorn, 2008). Students who reported higher levels of sense of belonging had stronger performance in the aforementioned areas compared to those who reported lower levels of sense of belonging. Strayhorn's (2008) study determined that grades and amount of time spent studying were positive predictors sense of belonging. Similarly, Hausmann, Ye, Schofield, and Woods (2009) determined that sense of belonging positively contributed to academic performance and GPA. The results of these studies point to the relationship that exists between academic performance and sense of belonging for college students.

Some of the positive relationship associated with academic performance indicators and sense of belonging may be attributable to the extent to which sense of belonging positively impacts students' academic motivation (Freeman, Anderman, & Jensen, 2007) and contributes to feelings of being more academically competent (Hoffman et al., 2002; Pittman & Richmond, 2007; Pittman & Richmond, 2008). Moreover, improved academic performance, motivation, and feelings of academic competency resulting from sense of belonging may lead to additional outcomes scholars have found to be related to sense of belonging, including satisfaction (Hausmann et al., 2009), commitment (Hausmann et al., 2009), and persistence (Cross-Brazzell, 2001; Hausmann et al., 2009; Hoffman et al., 2002).

Pittman and Richmond's (2007) study demonstrates the important role sense of belonging has on both psychological and collegiate outcomes. The purpose of the study

was to determine the effect of sense of belonging on the psychological and academic performance of college students. The authors hypothesized that students with a stronger sense of belonging would have higher GPA's, scholastic competency, work orientation, and psychological adjustment, when controlling for background characteristics (Pittman & Richmond, 2007). A demographic questionnaire and five additional Likert scale instruments were employed in measuring school belongingness, relationships with parents and friends, academic success and work orientation, self-worth and perceived scholastic competency, and problem behaviors (Pittman and Richmond, 2007).

As in the Pittman and Richmond (2008) study discussed previously under the heading *Sense of Belonging and Psychological/Emotional Outcomes*, the PSSM, IPPA, Self-Perception Profile for College Students, and the YASR were used in this 2007 study. Pittman and Richmond measured two additional variables in this study. Academic success was measured by a questionnaire designed by Pittman and Richmond (2007) to determine the predominant grades students received; and the Psychosocial Maturity Index (Greenberger, 1984 as cited in Pittman & Richmond, 2007) captured late adolescents' functioning in school and work environments.

Pittman and Richmond (2007) recruited 266 late adolescents (college students) ranging in age from 18-19 years old. Students were enrolled in an introductory psychology class during the second semester of their freshmen year at a regional state university. Through their analysis, Pittman and Richmond determined that students who reported higher levels of sense of belonging had better academic performance, felt more scholastically competent, and had higher self-worth than those reporting lower levels of sense of belonging. Furthermore, the authors determined that even when accounting for

the influence of demographic and personal characteristics such as gender, race and ethnicity, and socioeconomic status, students who reported greater levels of sense of belonging reported lower levels of externalizing behaviors (Pittman and Richmond, 2007). Interestingly, in this study quality of friendships (i.e. the extent to which trust, understanding, and connectedness are present in the friendship) had a greater influence on internalizing behaviors than did sense of belonging.

The authors acknowledge the limitations associated with a cross-sectional study and their reliance upon self-report questionnaires for this study (Richmond & Pittman, 2007). It should also be noted that the strict use of first-year students makes it difficult to generalize results beyond this population. Limitations aside, Pittman and Richmond (2007) demonstrate the important connection between sense of belonging and academic and psychological functioning. Given the important role sense of belonging plays in students' academic performance and psychological and emotional functioning it is important to gain a better understanding of what predicts sense of belonging among college students.

What Influences Sense of Belonging?

Generally, among college students, sense of belonging is positively related to perceptions of being valued, cared for, and accepted within their college community and negatively related to feelings of loneliness and depression (Cheng, 2004). In addition to exploring what sense of belonging influences, a great deal of literature examines the student characteristics and types of college environments that contribute to building one's sense of belonging.

Socioeconomic Status

Among the general population, socioeconomic status (SES) has been positively related to sense of belonging with individuals from higher-income backgrounds reporting greater levels of sense of belonging and individuals from low-income backgrounds experiencing lower levels of sense of belonging (Stewart et al., 2009). This finding is consistent with the college-bound population as well. In a study aimed at determining the ways in which childhood experiences contribute to sense of belonging for adult, community college students, Hagerty, Williams, and Oe (2002) also found finances to be a relevant variable. Among the variables studied, which included parental caring, financial problems within the household, and participation in athletics during high school, financial problems and athletics were found to be significantly related to sense of belonging (Hagerty et al., 2002). Specifically, financial problems within the household were inversely related to sense of belonging later in life as an adult (i.e. greater perceptions of financial problems contributed to decreased sense of belonging), whereas participation in athletics during high school positively contributed to sense of belonging (Hagerty et al., 2002). A number of studies support this finding. Hagerty, Williams, Coyne, and Early (1996) found income to be inversely related to sense of belonging among low-income women attending community college. Similarly, Maestas, Vaquera, and Zehr (2007) determined that paying for college, as measured by students' perception of level of difficulty associated with paying for college expenses, was negatively related to sense of belonging for students attending Hispanic Serving Institutions (HSI). Overall, students who reported greater perceptions of financial problems or difficulty paying for school reported lower levels of sense of belonging. Beyond socioeconomic status,

several other variables were examined in regard to their influence on sense of belonging among college students: gender, race/ethnicity, and high school GPA.

Gender

The influence of gender on sense of belonging has resulted in mixed findings. Among demographic variables explored, gender, specifically being female, was found to be a significant positive predictor of sense of belonging for Hispanic/Latino students, but not for students who identified as African American, Asian Pacific American, Multiracial/Multiethnic, or White/Caucasian (Johnson et al., 2007). Hagerty et al. (1996) and Freeman, Anderman, and Jensen (2007) did not find a significant correlation between gender and sense of belonging among largely White samples within a community college and public institution, respectively.

Race and Ethnicity

A number of studies have determined that sense of belonging differs across racial and ethnic identities (Johnson et al., 2007; Maestas et al., 2007; Stewart et al., 2009; Strayhorn, 2008). Johnson et al. (2007) determined that race differentially influenced sense of belonging, with White students demonstrating the greatest sense of belonging, followed by Multiracial/Multiethnic students, Hispanic/Latino students, Asian Pacific American students, and lastly, African American students. Similarly, Strayhorn (2008) found that Latino students reported lower feelings of sense of belonging compared to their White peers. Still, other studies seem to indicate that the relationship between race or ethnicity and sense of belonging is not as clear.

For instance, respondents in Stewart et al.'s (2009) qualitative study suggested that socioeconomic status, more so than race or ethnicity, influenced their sense of

belonging with others in their community. Hagerty et al.'s (1996) study also provided some contradictory findings as it pertains to the connection between race and ethnicity and sense of belonging. While it is commonly accepted that majority students report greater perceptions of sense of belonging in general, among respondents in a largely white sample, race was not significantly related to sense of belonging (Hagerty et al., 1996). These mixed findings indicate that the conceptualization of race and the suggested influence on sense of belonging may be influenced by other contextual factors not taken into account by the measure of race and/or ethnicity alone.

High School GPA

Johnson et al. (2007) and Freeman et al. (2007) determined that high school GPA was not significantly related to sense of belonging among first-year students across a variety of racial and ethnic identities. Findings from Johnson et al.'s (2007) study indicated that high school GPA was not a significant predictor for any of the students in the study, which included those who identified as African American, Asian Pacific American, Hispanic/Latino, Multiracial/Multiethnic, and White/Caucasian. Similarly, Freeman et al.'s (2007) study determined that high school GPA was not significantly related to sense of belonging among first-year students at a public institution.

Institutional Characteristics

Institutional characteristics such as selectivity and Carnegie classification often show little impact on collegiate outcomes (Pascarella & Terenzini, 2005), which also appeared to be the case in Johnson et al.'s (2007) study. Johnson et al. (2007) determined that selectivity was not a significant predictor for any of the students in the sample. However, given that a majority of the students in the sample were participants in a

number of Living Learning programs, the effects of institutional selectivity on sense of belonging may have been mediated by the unique environment created through participation in a Living Learning Program. Johnson et al. (2007) included institutional characteristics because they believed it could be an important environmental influence on sense of belonging. Although the results were not significant, the aforementioned Hagerty et al. (1996) study also seems to suggest that institutional context and characteristics could uniquely impact sense of belonging.

Hagerty et al. (1996) determined that among students in a largely White sample, race was not significantly related to sense of belonging. What makes this finding particular interesting is that the sample, though largely White, was drawn from a community college. While it would be an over-generalization to suggest that the community college environment was solely responsible for the findings in Hagerty et al.'s (1996) study, it stands to reason that institutional characteristics should not be overlooked.

Academic Environments

While the influence of high school academic performance on sense of belonging is open for debate, it seems there are several academically based indicators that are related to sense of belonging. Participation in academic support programs (Maestas et al., 2007), time spent studying, and grades, especially for Latino students (Strayhorn, 2008) contribute positively to sense of belonging.

Faculty and Peer Interactions

Faculty and peer interactions are an important influence on sense of belonging. Students who had positive interactions with faculty members, which led to the belief that

faculty members cared for them and their development, reported a stronger sense of belonging than those who did not (Freeman et al., 2007; Hoffman et al., 2002; Johnson et al., 2007; Maestas et al., 2007). Similar patterns were discovered among peer-to-peer interactions. Positive informal relationships with peers in which students perceived social support and acceptance from others greatly influenced their sense of belonging within their campus community (Freeman et al., 2007; Hagerty et al., 1996; Hoffman et al., 2002; Maestas et al., 2007). Further, interactions with diverse peers, individuals different from one's self, also contributed to increased sense of belonging for students who identified as Hispanic/Latino (Johnson et al., 2007; Strayhorn, 2008). Student's social interactions continued to be important among a number of factors within the residence hall and living environments.

Housing

Overall, living in campus housing was found to be related to sense of belonging, but the findings are mixed. Maestas et al. (2007) determined that living in campus housing is indeed an important part of the college experience that contributes to students' sense of belonging. However, there were particular characteristics of the residence hall environment that proved to be relevant to students' sense of belonging. The extent to which students perceived the residence hall environment to be socially and academically supportive was pertinent to their sense of belonging.

Johnson et al. (2007) determined that African American, Asian Pacific American, Hispanic, and White students who experienced the residence hall environment to be socially supportive reported a greater sense of belonging (Johnson et al., 2007). However, a socially supportive residence hall did not have a significant relationship to

sense of belonging for students who identified as Multiethnic or Multiracial (Johnson et al., 2007); yet, perceptions of the residence hall as academically supportive were positively related to perceptions of sense of belonging for Multiracial and Multiethnic students.

Similar to Johnson et al.'s (2007) findings, Strayhorn (2008) found that living on-campus was not significant to Latino students' sense of belonging. This is contradictory to Maestas et al.'s (2007) determination that living in campus housing is indeed an important part of the college experience that contributes to students' sense of belonging. Just as living environment differentially influenced sense of belonging, literature suggests that the influence of co-curricular involvement on sense of belonging is also differential based on students' racial and ethnic identities.

Co-Curricular Involvement

Overall, participation in social clubs, community activities (Hagerty et al., 1996), and holding leadership positions on-campus (Maestas et al., 2007) contribute to students' sense of belonging. More specifically, a number of studies determined that participation in religious organizations and services (Hagerty et al., 1996; Johnson et al., 2007), involvement in fraternities and sororities (Johnson et al., 2007; Maestas et al., 2007), and participation in intramural sports (Johnson et al., 2007) contribute to sense of belonging. The type of co-curricular involvement and its influence on sense of belonging is different based on students' social identities; in particular race, ethnicity, and gender. A closer look at the findings indicates that fraternity and sorority involvement predicts sense of belonging for White students (Johnson et al., 2007) and those attending Hispanic Serving Institutions (Maestas et al., 2007). Asian Pacific Americans and women's sense of

belonging was related to their participation in religious clubs and services (Johnson et al., 2007).

Sense of Belonging Research: Samples and Methods

An overwhelming amount of scholarship on sense of belonging focused on college students has been gathered via self-report measures and analyzed using quantitative methodologies (Cheng, 2004; Freeman et al., 2007; Hagerty et al., 1996; Hagerty et al., 2002; Hausmann et al., 2009; Hoffman et al., 2002; Johnson et al., 2007; Maestas et al., 2007; Meeuwisse et al., 2010; Pittman & Richmond, 2007; Pittman & Richmond, 2008; Strayhorn, 2008). Moreover, a great deal of the literature explores what influences sense of belonging for non-majority students (Hausmann et al., 2009; Johnson et al., 2007; Maestas et al., 2007; Meeuwisse et al., 2010; Strayhorn, 2008) and first-year students (Freeman et al., 2007; Hausmann et al., 2009; Hoffman et al., 2002; Johnson et al., 2007; Meeuwisse et al., 2010; Pittman & Richmond, 2007; Pittman & Richmond, 2008). Public institutions (Cheng, 2004; Freeman et al., 2007; Hausmann et al., 2009; Hoffman et al., 2002; Pittman & Richmond, 2007; Pittman & Richmond, 2008) and community colleges (Hagerty et al., 1996; Hagerty et al., 2002) are often the settings in which these studies take place. The results of these studies illuminate what specific aspects of the college environment and the collegiate experience are important for building a sense of belonging among diverse types of students. However, a review of the literature demonstrates that some key social identities have been omitted from the landscape of scholarship on sense of belonging.

Studies have focused on the differential experiences of individuals based on race and ethnicity and year in school (i.e. first-year students), yet it appears that disability

status has not been explored as it pertains to sense of belonging on college campuses. Noticeably missing from the current landscape is an exploration of the factors and variables that influence sense of belonging for individuals with psychological conditions. Given the prevalence of mental health issues on college campuses, this is surprising. Yet, it creates an opportunity to better understand mental health issues as they pertain to college campuses nationwide, as well as the illnesses and distress today's college students are facing.

College Student Mental Health

Increasing numbers of students who experience mental health issues are attending colleges and universities (Bertram, 2010), making the issue of college student mental health highly salient to today's campus educators. Students who experience mental distress are members of the campus community; they live in residence halls, participate in classroom environments, and interact with other students (Bertram, 2010; Kitzrow, 2009). As a result, students' mental health impacts individuals with mental health concerns, as well as their roommates, classmates, and friends (Bertram, 2010; Kitzrow, 2009). Typical issues of transition to the college environment such as making friends, critical thinking, and time management prove challenging for the average college student, but for those dealing with mental distress, the transition can be considerably more difficult (Anderson & Ongsoco, 2010). So, while students with mental health issues are capable of completing college level coursework (Bertram, 2010), psychological conditions can make it difficult to successfully transition into the campus community. At times, mental health conditions cause students to isolate themselves from others (Bertram, 2010) or interfere with cognitive, emotional, or interpersonal functioning

(Kitzrow, 2009) making it difficult to make friends, manage coursework, and cope with the daily stresses associated with college life. Given the potential impact mental health has on academic performance, it is not surprising that the long-term effects can lead to lower retention and graduate rates for these students (Kitzrow, 2009). Though college student mental health has been documented as a growing trend and concern, how mental health is defined is a bit less clear.

Mental Health Defined

Mental health is found to have an effect on one's physical, emotional, cognitive, and interpersonal functioning (Kitzrow, 2009). Thus, it stands to reason that mental health is a multi-faceted construct, not easily measured by a single item or scale. A review of the literature pertaining to college students suggests that the term *mental health* is universally understood, as a specific definition for the term is not cited (see Anderson & Ongsoco, 2010; Gollust, Eisenberg, & Golberstein, 2008; Hunt & Eisenberg, 2010; Kitzrow, 2009; Zivin, Eisenberg, Gollust, & Golberstein, 2009). The National Alliance on Mental Illness (NAMI) (2011) defines mental illness as:

...Medical conditions that disrupt a person's thinking, feeling, mood, ability to relate to others and daily functioning. Just as diabetes is a disorder of the pancreas, mental illnesses are medical conditions that often result in a diminished capacity for coping with the ordinary demands of life.” (NAMI, 2011)

NAMI's (2011) definition suggests that the construct of mental illness is broad, but inclusive of conditions that affect cognitive and psychological functioning, as well as one's affect and ability to interact with others to the point that it greatly diminishes the individual's capacity to cope and manage life's daily challenges. While researchers do

not cite a common definition of mental illness, there are variables consistently measured in studies exploring college student mental health.

Conditions commonly included within studies of college student mental health are: substance abuse (alcohol and drugs) (ACHA, 2010; Gollust et al., 2008; Kitzrow, 2009; Soet & Sevig, 2006), depression (ACHA, 2010; Brackney & Karabenick, 1995; Gollust et al., 2008; Soet & Sevig, 2006; Zivin et al., 2009); anxiety (ACHA, 2010; Gollust et al., 2008; Soet & Sevig, 2006; Zivin et al., 2009), eating disorders (ACHA, 2010; Gollust et al., 2008; Kitzrow, 2009; Zivin et al., 2009), self-injury (ACHA, 2010, Gollust, et al., 2008; Zivin et al., 2009), suicidal thoughts (ACHA, 2010; Zivin et al., 2009), and attempted suicide (AHCA, 2010).

Studies on the topic of college student mental health have explored the phenomenon of mental health broadly by examining the prevalence of mental health conditions (ACHA, 2010; Furr et al., 2001; Hunt & Eisenberg, 2010; Soet & Sevig, 2006), feelings associated with mental health such as sadness, anger, and loneliness (ACHA, 2010), and how these feelings contribute to psychopathology (Furr et al., 2001). In addition to determining the prevalence, feelings, and causes associated with psychopathology among college students, researches have sought to know more about help seeking behaviors (Soet & Sevig, 2006) and the treatment and diagnosis of conditions (ACHA, 2010; Soet & Sevig, 2006). Finally, studies have examined the sociocultural implications of mental health through studies on stigmatization (Bathje & Pryor, 2011; Bovina & Panov, 2006; Thornicroft et al., 2007). The impact of mental health on collegiate outcomes has been researched as well. Though college students experience mental distress related to adjustment to college or other life experiences, for a

large proportion of college students, these mental health issues appear to be more persistent (Zivin et al., 2009). A number of studies conducted within the past ten years show that college student mental health issues are more than a passing phase.

Studies on College Student Mental Health: A Review of the Past Ten Years

In a study of college students at four different colleges and universities, Furr, Westefeld, McConnell, & Jenkins (2001) surveyed students at a large Midwestern research university, a southeastern state university consisting of primarily commuter students, a community college offering technical and college preparatory programs in the southeast, and a small private liberal arts school in the southeast. A little more than half of the respondents (53%) reported experiencing what they believed to be depression since beginning college (Furr et al., 2001). The largest proportion of students reporting such feelings was from the southeastern state university with a large commuter population. Among the most frequently cited causes of depression were: issues with grades, feelings of loneliness, money problems, and relationship issues with a significant other (Furr et al., 2001). Additionally, hopelessness, parental problems, and feelings of helplessness contributed to feelings of depression (Furr, et al., 2001). Beyond depression, earlier research explored college students' perceptions and experiences with suicide.

In an effort to generate data about college student suicide that was generalizable to a broader population, Westefeld et al. (2005) identified a number of reasons students attempted suicide. According to students' self-reported data, stress related to school, relationship and family issues, financial stress, and experiencing feelings of depression, hopelessness, and anxiety were frequently cited (Westefeld et al., 2005). Though students agreed or strongly agreed that suicide was a problem across campuses

nationwide (42% of student respondents), a very small proportion (10% of respondents) agreed or strongly agreed that suicide was a problem on their campus (Westefeld et al., 2005). The findings highlight the disparity between students' perceptions, and the reality of suicide. Although students perceived suicide to be more of a generalized issue, not specific to their campus, nearly a quarter of respondents had contemplated suicide, and 5% had actually attempted suicide while in college (Westefeld et al., 2005). This suggests that students are either unaware of, or unwilling to acknowledge the prevalence of mental health issues within their local campus community. While the authors attempted to create generalizable data, it might be more accurately stated that they created regionally based data, having used schools in the Midwest, Ohio Valley, South East and South Central parts of the U.S. Nevertheless, the study provides insight into students' perceptions of mental health issues as a generic problem, but their tendencies to under-recognize it on their own campus.

While the students in Westefeld et al.'s (2005) study made distinctions between general perceptions and what occurs on their campus, Soet & Sevig (2006) collected data in which students shared details about their current mental health status and practices. Of the college students sampled, nearly one-third reported engaging in counseling at some point in their lifetime, and 20% of respondents reported being in counseling at the time of the survey (Soet & Sevig, 2006). Depression was the most commonly diagnosed mental health issue, followed by eating disorders, anxiety, and attention deficit hyperactivity disorder (Soet & Sevig, 2006). Within the sample of college students who participated in this study, 7% reported taking medication at the time of the study, while nearly 15% reported having taken medication for a mental health issue at some point in their lives

(Soet & Sevig, 2006). These findings suggest that there could be a growing awareness of mental health issues and an increase in willingness among college students to share their experiences and current status regarding their mental health. Several studies have examined the impact of mental health on a variety of college experiences, in particular peer relationships, academic performance, and adjustment to college.

The Impact of Mental Health on Collegiate Outcomes

Scholars posit that psychological variables and mental health conditions negatively impact academic success and social outcomes associated with the collegiate experience (Dixon & Kurpius, 2008; William, Hargrove, Johnson, & Deal, 2006). This assumption has led to studies that examined the relationship between college student mental health and academic performance, cognitive functioning, the transition to college, and building relationships with peers. Academic performance has been defined in a number of ways. Grades earned on assignments, projects, and in courses (ACHA, 2010) are measures of academic performance. Cognitive functioning has been specified in the literature as critical thinking and comprehension skills (Brackney & Karabenick, 1995), and students' ability to utilize learning strategies and resource management skills (Brackney & Karabenick, 1995). Collegiate outcomes that tend to be related to inter- and intrapersonal skills such as building relationships with peers (Bovina & Panov, 2006; Kitzrow, 2009) and transition to college (Anderson & Ongsoco, 2010) are among the outcomes emphasized in the current literature. In all of the aforementioned studies, the outcomes were negatively impacted by mental health conditions. Issues with cognitive functioning and academic performance were attributed to mental health conditions (ACHA, 2010; Brackney & Karabenick, 1995; Furr et al., 2001). Mental health

conditions made it difficult for students to build interpersonal relationships (ACHA, 2010; Bovina & Panov, 2006; Choenarom et al., 2005) and effected how well students adjusted to college (Anderson & Ongsuco, 2010).

Mental Health and Academic Performance

Brackney and Karabenick (1995) posited that individuals suffering from psychopathology may experience difficulty with the cognitive functioning necessary to complete academic tasks required for college level coursework. As a result, students with psychological conditions may have difficulty navigating the steps involved in performing well academically. They may find it challenging to outline the processes necessary for completing tasks, or have trouble managing their time and resources for successful completion of tasks. Similarly, as a result of decreased cognitive functioning, students may be unable to determine how much effort should be spent on tasks or when it is necessary for them to seek assistance when material is not clear to them (Brackney & Karabenick, 1995). Brackney and Karabenick (1995) determined that indeed, an indirect association between psychopathology and academic performance exists. It appears that students' self-efficacy, motivation, and resource management are affected by psychopathology, which in turn impacts academic performance (Brackney & Karabenick, 1995). To be clear, the literature reviewed is not in any way discussing or making inferences related to the intellectual abilities of students with psychological conditions, but rather the unique ways in which a psychological condition can pose difficulties with academic skills such as time management, organization and planning, and other academic resource management. The difficulties in executing these important academic skills and

tasks are related to the reported academic performance, and are not at all related to an individual's intellectual abilities.

Mental Health and Peer Relationships

Bovina and Panov (2006) investigated the attributions made by college students towards individuals with mental health issues. Participants were of two groups: psychology majors and non-psychology majors. Some distinctions and commonalities existed between the social representations and beliefs held by college students of the mentally ill. Psychology students attributed social characterizations such as antisocial, strange, and solitary to individuals perceived as mentally ill more frequently than non-psychology majors. Comparatively, non-psychology majors attributed psychiatric characteristics such as unbalanced, crazy, nervous, dangerous, and schizophrenic to students with mental health issues. Non-psychology majors believed these psychiatric characteristics to be indicative of an individual's social status within society more frequently than did psychology majors (Bovina & Panov, 2006). Non-psychology majors also viewed the mentally ill as a carrier for particular diseases (Bovina & Panov, 2006). However, members of both groups had negative attitudes towards individuals with mental illness and, as a result, placed a great deal of social distance between themselves and those believed to be mentally ill (Bovina & Panov, 2006). These findings suggest that irrespective of their course of study, college students may be more likely to avoid students they perceive as having some form of mental illness due to negative attitudes and representations. The resulting outcome for students with mental health issues is that they may find it difficult to make friends and develop relationships with peers in their immediate communities and college campus (Bovina & Panov, 2006). Bathje and

Pryor's (2011) study on the effects of public stigmatization on self-stigmatization by individuals suffering with mental health distress may provide an explanation for the negative attitudes college students hold towards individuals with mental health issues.

Public stigma is the societal response informed by the negative stereotypes that society holds about certain types of individuals, or individuals with particular characteristics (Bathje & Pryor, 2011). Representations of the mentally ill include attributions of the individual as schizophrenic, unbalanced, crazy, and antisocial among other things (Bovina & Panov, 2006). Societal representations of mental illness are the foundation from which self-stigmatization stems from. Self-stigma is the psychological impact of internalizing the attributes that society holds of the individual (Bathje & Pryor, 2011). Some individuals will internalize the negative stereotypes to a greater extent than others, therefore there are varying degrees to which people will experience self-stigmatization. For instance, among the college student population, Bathje and Pryor (2011) concluded that the extent to which students experienced self-stigmatization, and the psychological consequences connected to believing negative things about themselves, was related to how aware they were of the public stigma and associated representations. The findings of this study highlight the connection between society's negative attitudes about the mentally ill and the negative consequences that these conceptualizations have on individuals with mental health issues.

Mental Health and College Adjustment

It is necessary to understand the associated stress and its impact on students' mental health outlook and adjustment to college. Stress is related to the perceived fit between the person and the environment. Lazarus and Folkman (1984) states that stress:

...emphasizes the *relationship* between the person and the environment, which takes into account characteristics of the person on the one hand, and the nature of the environmental event on the other... the relationship is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being (p. 21).

Hence, individuals' perceptions of stress are determined by their ability to cope with, or navigate, the environment and the associated contextual influences. The better able one is to cope, the less stress experienced; environmental situations that place higher demands, or exceed an individual's coping skills creates increased levels of stress. Psychological symptoms such as anxiety and depression may result from conditions of stress (Collins, 2006).

Stress is negatively related to college adjustment. Higher levels of stress are related to lower levels of reported adjustment to college for both men and women (Anderson & Ongsuco, 2010). Further, stronger beliefs about one's ability to cope with stressors and life situations are related to decreased perceived levels of stress and increased college adjustment (Anderson & Ongsuco, 2010). The relationship between stress, coping skills, and college adjustment is especially important when contextualized to students with psychological conditions. As NAMI's (2011) definition of mental illness suggests, mental illness poses the potential for decreased capacity to develop and manage interpersonal relationships, and challenges in coping with life's daily tasks. Therefore, while all students experience varying levels of stress associated with college adjustment, for those with a psychological condition, college adjustment poses far greater challenges as these students may find it even more difficult to build relationships and seek out the

assistance needed. As such, it is crucial to take into consideration the unique challenges associated with the *typical college experience* and how they are not so typical for students with psychological conditions.

The aforementioned studies point to the impact mental health has on students' college experience. More recently, the American College Health Association (ACHA) has created the National College Health Assessment II (NCHA II), known as the ACHA-NCHA II instrument. This instrument is the largest known comprehensive data set used to better understand college students' habits, behaviors, and perceptions on a number of health topics, including mental health (ACHA, 2010). Results published in the ACHA's National College Health Assessment II (ACHA-NCHA II) 2010 executive summary confirm and expand upon what previous researchers have found.

Results from the ACHA-NCHA II

The findings from the ACHA-NCHA II (ACHA, 2010) provide context and details pertaining to the types of conditions students are experiencing and the impact on their collegiate experience. Approximately 17% of students reported being diagnosed or treated by a professional within the last 12 months for a mental health condition. Of that 17%, 8.3% were diagnosed or treated for depression; 9.2% for anxiety; 0.9% for anorexia, 0.8% for bulimia; 1.0% for substance abuse or addiction (ACHA, 2010). However, the number of students who reported experiencing feelings associated with mental health represented a larger proportion of the population.

Feelings associated generally with mental health are: hopelessness, emotional exhaustion, overwhelming anxiety, or feelings of depression that made it hard to function (ACHA, 2010). At the time of data collection, 43.9% of students felt things were

hopeless, 83.6% felt overwhelmed by all they had to do, 77.9% felt emotionally exhausted, and another 54.4% reported feeling very lonely at some point within the past 12 months (ACHA, 2010). Of particular interest is the proportion of students who reported feeling so depressed that it was difficult to function, and the proportion of students who said they felt overwhelming anxiety at some point within the last 12 months (ACHA, 2010). Although 28.4% and 46.4% reported strong feelings of depression and anxiety respectively, a much smaller proportion of students indicated they had been diagnosed or treated by a professional for depression (8.3%) or anxiety (9.2%) within the past 12 months (ACHA, 2010). Additionally, the ACHA-NCHA II asked students to report thoughts and behaviors related to self-injury, considering suicide, and attempted suicide within the last 12 months. Of these three experiences, 6.0% reported having seriously considered suicide, 5.1% intentionally harmed themselves, and 1.3% had attempted suicide (ACHA, 2010).

The ACHA-NCHA II 2010 (ACHA, 2010) executive summary discussed the impact of mental health conditions on academics. Of the students who responded to the survey, 10.0% reported depression and 16.4% reported anxiety as having an impact on their academics (ACHA, 2010). Academic impact was defined as receiving a lower grade on an exam or important project, receiving a lower grade or an incomplete in a course, dropping the course entirely, or experiencing significant disruption while working on a thesis, dissertation, research, or practicum (ACHA, 2010). Fewer students indicated that alcohol use (3.7%), drug use (1.6%), and eating disorders (1.1%) had impacted their academics, but it was still a factor in their success (ACHA, 2010). In summary, the data from the NCHA-ACHA II (ACHA, 2010) survey suggests that mental health conditions

of depression, anxiety, eating disorders, and alcohol and drug use impact college students' academic performance. Moreover, greater proportions of students reported that they had experienced symptoms of the aforementioned conditions, though fewer had been diagnosed or treated by a professional. Lastly, the data indicates that although self-injury, suicidal thoughts, and attempted suicide are not classified as a specific condition, rather as thoughts or behaviors associated with mental health, they are an issue on college campuses not to be overlooked.

The strengths of the ACHA-NCHA II (ACHA, 2010) are that it is the largest known survey on college student health and has completed at least two cycles of data collection (2008 and 2010); the instrument and measures were refined following the 2008 data collection (ACHA, 2010). The study consists of a large sample of 30,093 students with a response rate of 30.91%, and includes many important variables for college student health. However, there are some limitations associated with this data set. First, the data reported is descriptive in nature (frequencies and percentages), which provides little insight into the specific nature, context, or cause of the feelings or behaviors reported. Additionally, the data, as it has been reported, is not detailed by institution type, size of campus population, race/ethnicity, or class standing; thus, it is difficult to know if any of these variables influenced the findings. The cross-sectional, self-report nature of the instrument is a snapshot in time and relies on students to accurately remember feelings and experiences from as far back as 12 months prior to taking the survey. This retrospective data collection could result in over or under reporting based on the student's current frame of mind and willingness to report this kind of information. However, asking students to report the frequency of an experience of feelings, rather than

specific contextual information may offset any response bias related to answering questions about one's mental health condition. Limitations withstanding, the ACHA-NCHA II (ACHA, 2010) provides generalizable data regarding the types of mental health conditions and issues students are experiencing, and the frequency with which they occur as a means of informing college educators as to the challenges students are facing.

Mental Health and Sense of Belonging

Interdisciplinary literature draws some connections between one's mental health state and sense of belonging within a community. Choenarom, Williams, and Hagerty (2005) examined the relationship between sense of belonging and depression among adults with and without a history of depression. What they determined was that in general, individuals who were depressed reported lower feelings of sense of belonging within their immediate context than did non-depressed individuals (Choenarom et al., 2005). Further, sense of belonging was a significant predictor of depression for individuals who experienced clinical depression at some point in their lives, but who were not currently in a depressive episode (Choenarom et al., 2005). Choenarom et al.'s (2005) findings suggest that for individuals with mental illness, their condition may impact the extent to which they experience a sense of belonging within their immediate context, and in turn, their sense of belonging is predictive of future episodes of mental health distress.

Aneshensel and Sucoff (1996) examined the environmental factors within a neighborhood context that influenced mental health for adolescents. In their model they propose that two factors influence individuals' mental health: the presence of threatening conditions within a neighborhood and social cohesion. Aneshensel and Sucoff (1996)

hypothesized that social cohesion, the extent to which adolescents perceive themselves as socially connected with others in the neighborhood, can off-set the impact of threatening conditions. Furthermore, they hypothesized that experiencing one's environment as threatening has an impact on mental health outcomes. In this study, threatening environments included crime, graffiti, or other such factors. The results suggested that as the neighborhood is perceived as more threatening, symptoms of depression and anxiety become more prevalent. Further, social cohesion is negatively associated with one's mental health outcomes; increased perceptions of social cohesion are related to decreased negative mental health outcomes. While this study explores social cohesion within a threatening neighborhood context, the notion of neighborhood can be extended to include a college community consisting of residence halls, classroom experiences, and various environments. In doing so, it contextualizes sense of belonging (social cohesion as Aneshensel & Sucoff (1996) refer to it) and the influence the environment has on it.

Theoretical Framework

Sense of belonging is perceptive and affective in nature, and reflects the extent to which individuals feel central to, and valued by, the community they are a part of (Hagerty et al., 1992). Such identification and affiliation with a campus community stems from students developing a social network that leads to them feeling connected to the social and academic experiences that comprise their collegiate experience (Maestas et al., 2007). Given that sense of belonging is predicated on building relationships with others, it is necessary to explore perceptions of mental illness within society and how those perceptions influence interpersonal interactions with others (see Bovina & Panov, 2006).

Social Representations of Mental Illness

It has been suggested that a lack of knowledge or personal experience regarding the onset, diagnosis, and treatment of mental disorders leads to negative stereotypes and prejudices towards individuals with mental illness (Baumann, 2007). This gap in personal knowledge is filled by the social representations and public portrayals of the mentally ill. The media portrays individuals with mental health condition as dangerous, and likely to cause harm to themselves and others (Corrigan et al., 2005). Additionally, mental illness is often associated with crime and violence (Corrigan et al., 2005). Negative representations of mental illness effect the ways in which people relate to, and interact with, people with mental health conditions. People with mental illness are treated as though they are incompetent, damaged, helpless, “mentally retarded” (Dickerson et al., 2002, p. 190), potentially dangerous (Dickerson et al., 2002), lazy, or deserving of their condition (Byrne, 2000). Subsequently, the negative stereotypes facilitate the stigmatization and social exclusion of individuals with mental illness.

Stigmatization and Social Distancing

The stereotypes about mental illness used by society, and perpetuated by the media, establish an in-group/out-group mentality (Baumann, 2007; Byrne, 2000), resulting in individuals with mental illness being classified as *other* or strange (Baumann, 2007). Similar to racial stereotypes that allow individuals in the racial majority to dismiss and ignore the needs and rights of others, negative stereotypes about mental illness are used to justify social exclusion (Byrne, 2000). Social exclusion occurs in the subtle form social distancing.

The emotional space individuals put between themselves and another in social

situations is social distancing (Baumann, 2007). Low social distance is characterized by a sense of shared identity as members of the in-group, based on common experiences, beliefs, and norms (Baumann, 2007). Comparatively, high social distance is characterized by interactions marked by detachment and oftentimes feelings of fear of the *other* (Baumann, 2007). Social distance occurs when individuals are perceived as different or acting in a manner that is outside the acceptable norms and expectations of the in-group, as is the case for individuals with mental health conditions. Though stigmatization and social exclusion is discussed as it pertains to broader society, these issues are prevalent in the collegiate setting as well.

Among the college student population, a number of negative attributions are made about individuals with mental health conditions. In general, students characterize these individuals as unpredictable, aggressive, or strange (Bovina & Panov, 2006), but their attributions extend to specific psychiatric and social descriptors. Crazy, paranoid, hysteric; antisocial, stupid, and mentally retarded (Bovina & Panov, 2006) are the labels used in reference to individuals with mental health conditions. However, students make distinctions within their decisions to stigmatize and socially distance themselves.

Though students generally put greater social distance between themselves and others they perceived as mentally ill (Bovina & Panov, 2006), the type of condition and perceived locus of control over their condition influenced students' actions related to social distancing. Students stigmatize and discriminate differently among disabilities: individuals with a psychiatric condition were viewed more negatively than were individuals with physical diagnoses such as cancer (Corrigan et al., 2000). Moreover, the extent to which students believe individuals are capable of controlling their

circumstances and condition influenced blaming and social distancing (Corrigan et al., 2000). The more students believed someone could control their mental health condition the more they blamed the individual for their circumstances and avoided them socially. Using Tinto's (1993) theory of student departure, expanding sense of belonging to include the concept of integration provides an avenue for exploring how stigmatization and social distancing impact sense of belonging and the associated academic and personal outcomes for students with psychological conditions.

Tinto's Theory of Student Departure

A number of researchers characterize sense of belonging as a student's integration into the campus or college system (Hoffman et al., 2002; Strayhorn, 2008). Pascarella and Terenzini (2005) specified integration as the extent to which students share the normative cultures, values, beliefs, and behaviors of the academic and social systems of the institution, as defined by the faculty, staff, and peers at the institution. The match between a student's culture and that of the institution is crucial; close alignment appears to be indicative of greater identity and group membership, while weak alignment may suggest a lack of membership and perceptions that one does not belong (Pascarella & Terenzini, 2005). The importance of this integration is illustrated in Tinto's (1993) theory of student departure.

Tinto (1993) posited that the college environment is comprised of two systems, one social and one academic. Students' academic and social achievement is influenced by the extent to which they integrate into both systems (Tinto, 1993). In recognizing that two distinct systems exist, it is possible for a student to be differentially integrated into each. Integration requires that individuals, to some extent, adapt to the community's

values, norms, and attitudes (Tinto, 1993). The more so that this occurs, the more likely one is to experience feelings of community and belonging with others (Tinto, 1993).

This sense of belonging, and the academic and social achievements that accompany it, is a function of the interactions with, and behaviors on the part of peers, faculty, and others within the environment (Tinto, 1993). If interactions are positive, encouraging, and supportive, and lead to the development of social bonds and networks, then the student is likely to experience academic and personal success (Tinto, 1993). However, if interactions are negative, the bond between the student and the academic and social systems is weakened and academic and personal achievement decreases (Tinto, 1993). Tinto's theory of student departure is applicable to understanding how sense of belonging, further conceptualized as integration, impacts the academic and social achievement for students with psychological conditions.

Specifically, for students with psychological conditions, the issue becomes a matter of integration, or the ability or inability to integrate. Negative social representations of the mentally ill held by college students leads them to socially distance themselves from individuals they perceive as having a mental illness. The social distance is predicated on establishing students with psychological conditions as members of the out-group, not in alignment with the norms, behaviors, and values of the community. As a result, students with psychological conditions are not able to integrate into the social and academic systems because they are excluded due to their out-group status. The inability to integrate weakens students' connection to the institution, thereby resulting in a lower sense of belonging. This affects the student's academic and personal achievement.

Higher perceptions of sense of belonging have been associated with increased academic performance (Hausmann et al., 2009; Pittman & Richmond, 2007; Pittman & Richmond, 2008), persistence, commitment (Hausmann et al., 2009), academic motivation (Freeman et al., 2007), and satisfaction (Hausmann et al., 2009). Additionally, greater perceptions of sense of belonging have been associated with psychological and emotional outcomes such as enhanced coping abilities (Hoffman et al., 2002), increased self-worth (Pittman & Richmond, 2007), positive affect (Baumeister & Leary, 2007), and decreased feelings of anxiety, depression, and social withdrawal from others (Pittman & Richmond, 2008). Therefore, social distancing stemming from negative stereotypes of the mentally ill influences the extent to which students with psychological conditions integrate into the academic and social systems of the college or university, thereby affecting the important academic and personal outcomes associated with sense of belonging.

Chapter 3: Research Methods

Using data from the 2009 Multi-Institutional Study of Leadership, this study sought to develop a portrait of who students with mental health issues are, and to determine what aspects of the collegiate environment impact sense of belonging for students with psychological conditions. The following research questions guided the study:

1. What does the descriptive profile of students with psychological conditions depict based upon gender, year in school, institution size and selectivity, academic performance, and student involvement compared to students who do not report having a psychological condition?
2. After controlling for students' input and demographic characteristics, what environmental variables predict sense of belonging for students with psychological conditions?
3. Do the predictors for sense of belonging differ between students with psychological conditions and those who do not report having a psychological condition?

Due to the impact of mental health on cognitive processes such as critical thinking, comprehension, and the application of learning strategies (ACHA, 2010; Brackney & Karabenick, 1995; Furr et al., 2001), it was hypothesized that the comparative analysis would demonstrate the following results:

1. Academic performance, as measured by grade point average (GPA), for students with psychological conditions will be lower than that of students who did not report having a psychological condition due to the impact of mental

health on cognitive processes such as critical thinking, comprehension, and application of learning strategies.

2. The distribution of students who self-reported a psychological condition will decrease as class-level increases due to attrition during the earlier years in college resulting from academic challenges (Kitzrow, 2009).

Related to student involvement patterns, it was hypothesized that student involvement patterns would reflect that fewer students with psychological conditions will be involved in student organizations due to the impact of mental health issues on inter- and intra personal skills compared to students who do not have a psychological condition (Bovina & Panov, 2006; Choearom et al., 2005; Kitzrow, 2009).

The dearth of literature exploring sense of belonging as it pertains to college students with psychological conditions does not allow for a directional hypothesis to be made related to the variables that predict sense of belonging for the sample in this study and how those predictors may differ from students who do not have a psychological condition.

Research Design

Astin's (1993) I-E-O model served as the data analytic approach for the current study. Hierarchical multiple regression was used, with the regression blocks organized based on the temporal order, and distal-to-proximal nature of the variables, as suggested by Astin's model. What follows is a brief overview of Astin's I-E-O model when applied to data analysis.

The first block contains student characteristics and input variables that students carry with them as they enter college. Demographic characteristics such as race/ethnicity, gender, and socioeconomic status are examples of input variables.

Bridge variables are entered next. Astin (1993) conceptualized bridge variables as student characteristics they enter college with *and* characteristics of the college environment. For instance, students' financial aid packages, choice of major or field of study, and college GPA are considered bridge variables. Bridge variables play an important role in shaping students' experiences and outcomes by influencing who and what students come into contact with (Astin, 1993). For example, depending upon students' GPA's, they may be offered opportunities to engage in different types of social and academic settings. Students with higher GPA's may have opportunities to engage with faculty members on research and competitive scholastic activities, whereas students with lower GPA's may be required to seek academic assistance and support. In each instance, the interactions with faculty, staff, and other students are shaped by the context students are in as a result of their GPA. This contextual influence results in differences among students' perceptions, values, beliefs, and collegiate outcomes.

Between-college characteristics follow bridge variables. Between-college characteristics are environmental characteristics that are pre-existing when students arrive at college, and are consistent for all students at that particular institution (i.e. selectivity, size, Carnegie classification, faculty, and peers) (Astin, 1993). The importance of between-college characteristics is that they capture the unique impact the environment has on the student's experience. All students who attend "small" schools do not have the exact same experiences. Students who attend a community college with an enrollment

size of 2,500 students will have different experiences than those who attend a private liberal arts college with the same enrollment size.

Finally, involvement and intermediate outcomes complete Astin's (1993) model. Involvement includes participation in on and off-campus clubs, organizations, and activities. It can also include part-time or full-time employment and participation in religious practices. Intermediate outcomes are outcomes that may be correlated with, or predicted by, the previously entered variables; but they might also have a unique contribution to, or impact on, the final outcome. Table 1 illustrates Astin's I-E-O model and the grouping of variables by regression blocks. Consistent with Astin's I-E-O model, the variables in this study were entered in the same temporal order.

An Overview of the Multi-Institutional Study of Leadership

The Multi-Institutional Study of Leadership (MSL) is an international study that examines the environmental conditions that encourages college students' capacity for socially responsible leadership using a cross-sectional research design (Dugan & Komives, 2009). The MSL measures students' capacity for socially responsible leadership using the Socially Responsible Leadership Scale (SRLS-R3; Tyree, 1996) (Dugan & Komives, 2009). Eight scales comprise the SRLS. Seven of the scales measure the values associated with the social change model, organized by the three domains of the model: individual values (consciousness of self; congruence; commitment), group values (collaboration; common; controversy with civility), and societal values (citizenship). The eighth scale, change, measures students' capacity to navigate social change. In addition to the SRLS, a cognitive skills measure and a leadership efficacy measure round out the core components of the MSL instrument.

Other composite measures (social change behaviors; sociocultural discussions with peers; belonging climate; discriminatory climate) and sub-study composite measures (spirituality; social perspective-taking; mentoring outcomes: personal development; mentoring outcomes: leadership empowerment; collective racial esteem) comprise the total instrument.

The MSL employed a two-part sampling strategy aimed at recruiting institutions, then students (Dugan & Komives, 2009). During the spring and summer of 2008, institutions were contacted via listservs of professional association networks to garner interest in the study. Each institution surveyed 4,000 students. Institutions with undergraduate enrollments greater than 4,000 randomly sampled 4,000 undergraduate students; institutions with 4,000 or fewer undergraduate students sampled the entire population (Dugan and Komives, 2009). In total, 104 institutions enrolled and 103 completed the survey. The complete sample consists of 103 institutions from 31 states, the District of Columbia, and two international institutions (Canada and Mexico). A 34% response rate yielded 115,632 completed surveys. The current study utilized data collected during the spring 2009 instrumentation from U.S. based institutions, and includes only students who self-reported United States citizenship (i.e. international students were removed from the sample). The removal of international students from the sample was informed by the literature review conducted for this study. The scholarship in the literature review discusses the experiences of what is interpreted to be students who are U.S. citizens, as it was not indicated that international students were in the samples. Moreover, including international students would have confounded the results related to

psychological condition status and predictors of sense of belonging as a function of students' citizenship status and the associated cultural differences.

Table 1

Variables and Regression Blocks Organized According to Astin's (1993) I-E-O Model

| <p>Inputs "Characteristics of the student at the time of initial entry to the institution." (p.7, Astin, 1993)</p> | <p>Environment "Refers to the various programs, policies, faculty, peers, and educational experiences to which the student is exposed." (p.7, Astin, 1993)</p> | <p>Outcomes "Refers to the student's characteristics <i>after</i> exposure to the environment." (p.7, Astin, 1993)</p> |
|--|---|---|
| <p>Block 1 <i>Student Characteristics and Demographic Information</i> Gender Race/ethnicity Parental income Parental educational attainment High school GPA</p> | <p>Block 2 <i>Bridge Variables</i> College major Financial aid package Pre-selected housing assignment</p> <p>Block 3 <i>Between College Characteristics</i> Selectivity Size Control Faculty and peer characteristics</p> <p>Block 4 <i>Involvement and Intermediate Outcomes</i> Participation in co-curricular activities Work, on or off-campus, part-time/full-time</p> | <p><i>Affective or Behavioral</i> Cognitive growth Change in attitudes, values, and beliefs</p> |

As this was not the focus of the study, these students were removed from the sample.

Students were asked to report their citizenship and/or generational status; *international student* was among the available responses. Descriptive statistics and missing data analysis revealed that of the 115,632 respondents, 91,803 responded to the survey item, while 23,801 did not. In total, 3,082 students reported their citizenship and/or generational status as *international student*. The removal of international students (n=3,082) and the missing data (n=23,801) reduced the overall sample size to 88,749 students. The remaining 88,749 students comprise the sample from which students who self-reported a psychological conditions were selected, and the randomly selected comparative sample of students who did not report a psychological condition. Refer to table 2 for an overview of the total MSL sample, the sample of students with psychological conditions, and the randomly selected comparative sample used in this study.

The Current Study

In the current study, the population of interest was students who self-reported having a psychological condition. Participants were asked to respond yes or no to the following question: *Do you have any of the following conditions?* Response items included a range of conditions, including conditions that affect physical abilities, learning or concentration, and psychological, mental, or emotional states. The prompt for mental or psychological conditions read as follows: *A psychological, mental, or emotional condition lasting 6 months or more.* Participants who responded as having any of the conditions were then asked to specify the conditions they have. Participants could

Table 2

Demographic and Sample Characteristics of MSL Sample and Study Sample

| | Total MSL Sample 115,632 | Students with Psychological Conditions 2,601 | Comparative Sample 2,978 |
|---|--|--|--|
| Gender | | | |
| Female | 63.9% | 79.8% | 65.4% |
| Male | 36.1% | 20.2% | 34.6% |
| Race/Ethnicity | | | |
| White/Caucasian | 72.8% | 84.2% | 75.1% |
| Middle Eastern | 0.6% | 0.2% | 0.5% |
| African American/Black | 5.3% | 1.9% | 5.1% |
| American Indian/Alaska Native | 0.4% | 0.4% | 0.5% |
| Asian American/Asian | 7.7% | 2.5% | 5.8% |
| Latino/Hispanic | 4.1% | 2.3% | 3.9% |
| Multiracial | 7.6% | 7.8% | 8.2% |
| Race/ethnicity other than what was specified | 1.4% | 0.7% | 1.0% |
| Class Standing | | | |
| Freshman | 25.7% | 17.4% | 22.9% |
| Sophomore | 23.5% | 20.2% | 21.8% |
| Junior | 24.5% | 28.6% | 25.9% |
| Senior | 26.4% | 33.8% | 29.3% |
| Carnegie Classification | | | |
| Research (very high) | 35.9% | 33.6% | 35.6% |
| Doctoral | 9.2% | 9.5% | 9.2% |
| Master's | 35.6% | 36.5% | 37.0% |
| Baccalaureate | 18.0% | 20.4% | 18.1% |
| Associates | 1.4% | 0% | 0% |
| Institution Size | | | |
| Small (3,000 or less) | 18.5% | 22.3% | 19.7% |
| Medium (3,001-10,000) | 44.1% | 45.3% | 44.4% |
| Large (10,001 or more) | 37.4% | 32.4% | 35.8% |
| Control | | | |
| Public | 47.1% | 43.5% | 44.9% |
| Private | 52.9% | 56.5% | 55.1% |
| Selectivity | | | |
| Non-competitive & Special | 4.5% | 3.7% | 4.5% |
| Less Competitive | 4.7% | 3.6% | 5.1% |
| Competitive | 22.8% | 24.1% | 22.8% |
| Very Competitive | 34.0% | 33.9% | 34.0% |
| Highly Competitive | 21.9% | 22.8% | 21.1% |
| Most Competitive | 12.0% | 11.8% | 12.5% |

All data reported in % of students within each category

indicate more than one condition. The population of interest is comprised of students who indicated that they have a *psychiatric/psychological condition* (ex. *anxiety disorder, major depression*). A total of 12,246 students indicated that they had any of the listed conditions or disabilities. Of the 12,246 students who reported having a condition, 4,735 reported having a psychological condition. The sample consisting of students who reported having a psychological condition was reduced based on further specification and the removal of missing data.

Sample Specification and Missing Data Analysis

Students with Psychological Conditions

The total number of students who self-reported having a psychological condition was 4,735. This initial sample included students who reported a psychological condition and one or more additional conditions. Students who self-reported having a psychological condition and one or more other conditions were removed from the sample so that when interpreting the findings, it was clear that relationships and associations between the independent variables and sense of belonging were not confounded by the additional condition(s). Prior to selecting the final sample, a t-test was conducted to determine if the removal of students who self-reported having a psychological condition and at least one other condition would negatively impact or skew scores on the sense of belonging scale. The t-test indicated that the mean difference between scores on the sense of belonging scale for students who reported having only a psychological condition and students who reported having a psychological condition and at least one additional condition was statistically significant. Although the t-test was statistically significant, the effect size was very small. This indicates that the removal of students who reported

having a psychological condition and at least one other condition resulted in negligible changes in scores on the sense of belonging scale (table 3). The final sample of students who reported only a psychological condition consisted of 2,780 respondents. Throughout this study, the term *students with psychological conditions* refers to the students who self-reported having a psychological condition when responding to the MSL survey.

Table 3

Mean Differences for Sense of Belonging:

Psychological Condition and Psychological Condition and Additional Condition

| | M | SD | t | df | Cohen's d |
|---|----------|-----------|----------|-----------|------------------|
| Students with Psychological Conditions | 3.68 | .95 | 2.77* | 4284.56 | .08 |
| Students with Psychological and additional condition(s) | 3.60 | .98 | | | |

* $p < .01$

Cohen's *d* (Cohen, 1992) effect size: small=.2, medium=.5, large=.8

Once the final sample of students with psychological conditions was determined, cases were reviewed with regard to the amount of missing data for each variable. When determining which cases to remove from the data set, the following criteria were applied:

1. Any case that did not complete the full belonging climate scale was removed from the data set.
2. Cases were removed entirely if *any variable* for which the data were missing for that case had more than .1% missing data across the sample of students with psychological conditions.
3. In all other cases missing data was addressed via SPSS listwise deletion for the regression analyses and did not otherwise affect the outcomes of this study.

The data cleaning process resulted in the removal of 179 cases, yielding a final sample size of 2,601. So, sample-wide, only 6.4% of cases were removed for missing data.

Table 2 reflects the final, cleaned sample of students with psychological conditions used in this study. There is no clear consensus about the amount of acceptable missing data or when complex imputations should be used; cut-off points have ranged from 5 – 20% (Schlomer, Bauman, & Card, 2010). Given the sample size in this study that produced more than adequate statistical power, imputation of missing data was not used.

Comparative Sample: Students without Psychological Conditions

A randomly selected sample of students without psychological conditions was used as a comparative sample. The comparative sample was selected from the MSL data set after international students were removed from the sample (n=88,749). Prior to selecting the random comparative sample, the data set was filtered to exclude the 4,735 students who reported having a psychological condition. Random case selection was conducted via SPSS to draw a randomly selected sample of approximately 3% of the remaining cases in the data set (after the exclusion of students who reported psychiatric/psychological conditions). The random case selection yielded 3,086 cases. The same procedures and criteria for analyzing missing data that were employed with the sample of students with psychological conditions were also used with the comparative sample. After the removal of missing data, the randomly selected comparative sample of students without psychological conditions was 2,978. Table 2 reflects the demographic characteristics of the final, cleaned comparative sample used in the analysis of this study.

Variable Specification

Removal of an Independent Variable

During the preliminary descriptive data analysis for missing data, it was determined that one of the independent variables had a large amount of missing data. At the onset of the current study, it was determined that both parental educational attainment and parental income would serve as measures for socioeconomic status (SES). However, 20.3% of parental income data was missing from the sample of students with psychological conditions, and 20.8% was missing from the comparative sample. As a result, parental income level was removed from the study and SES was measured via parental educational attainment. Parental educational attainment and parental income are two separate measures frequently used together as proxy for SES (Domhoff, 1967; Dowd & Melguizo, 2008; Engberg & Wolniak, 2009; Goldrick-Rab, 2006; Goldrick-Rab & Pfeffer, 2009; Lubienski & Crane, 2010; Ostrove & Long, 2007; Walpole, 2003; Walpole, 2006). Given that educational attainment and income level are separate measures used in studies pertaining to SES, it is reasonable to include only one of those measures in this study given the circumstances of incomplete data. Additionally, SES serves as control variable, so the inclusion of only one measure of SES was not of great concern pertaining to the results of this study.

Inclusion of Institutions with Varying Characteristics

The decision to include community colleges in addition to four-year institutions was based on existing literature that explored the notion of sense of belonging for students at four-year institutions (Cheng, 2004; Freeman et al., 2007; Hausmann et al., 2009; Hoffman et al., 2002; Pittman & Richmond, 2007; Pittman & Richmond, 2008)

and community colleges (Hagerty et al., 1996; Hagerty et al., 2002). Additionally, the ACHA-NCHA II (ACHA, 2010) included mental health data from public and private institutions, as well as two-year and four-year colleges. Thus, the goal of this study was to be inclusive of all collegiate settings and experiences so as to gain the broadest perspective on sense of belonging for students with psychological conditions as possible. However, after international students and missing data were removed from the sample, community colleges were no longer represented in this study. This was not surprising given the small representation (1.4%) of community colleges in the overall MSL sample.

Measures and Coding

Demographic Information

Gender, race/ethnicity, and parental educational attainment served as the input variables and demographic information for this study. The variables for gender and race/ethnicity used in this study were recoded from the original variables by the MSL's Principal Investigator. The original variable for gender allowed students to self-report as male, female, or transgender. The recoded variable has only two options, male or female, with responses for transgender coded as missing. Similarly, the recoded variable for race/ethnicity was used in this study.

A number of variables pertaining to race/ethnicity are included in the MSL data set. The original variable allowed respondents to self-report any and all racial/ethnic groups for which they have membership in. There were multiple iterations of this recoded variable within the dataset; the recoded race/ethnicity variable used in this study was coded such that each student was reported in only one category, and individuals that self-identified as multiracial by selecting more than one race/ethnicity in the original

variable were forced into the *Multiracial* category. Using this recoded variable, racial groups were categorized in the following manner: White/Caucasian; Middle Eastern; African American/Black; American Indian/Alaska Native; Asian American/Asian; Latino/Hispanic; Multiracial; Race/ethnicity not included above. Race/ethnicity served as a control variable for this study and was not a primary focus within the research questions or hypotheses. As such, the recoded measure was appropriate for use in this study. Parental educational attainment is ordinal data, with responses ranging from *less than high school diploma or less than a GED* (1) to *doctorate or professional degree (ex. JD, MD, PhD)* (7). In this study, parental educational attainment was measured as continuous data with a range of 1-7, in which 1 reflects the least amount of education attained and 7 reflects the most. Data for students who responded with *don't know* in reference to their parents' educational attainment was coded as missing. Refer to table 4 for a reference guide to the variables and coding schema for variables used in this study.

Between College Characteristics

The use of variables that measure college characteristics was limited to the development of the descriptive profile. The decision to include selectivity and size is consistent with the ACHA-NCHA II's (AHCA, 2010) inclusion of such characteristics in their overall sample of institutions. However, the exclusion of these same variables in the regression analysis was informed by Pascarella and Terenzini's (2005) conclusion that between college characteristics have very little effect on collegiate outcomes. Similarly, Johnson et al. (2007) found that institutional characteristics were not a significant predictor of sense of belonging.

Institution size and selectivity were used in developing the descriptive profile. Size is reflected as small (enrollment of 3,000 or less), medium (3,001-10,000), and large (10,001-more). Institutional selectivity is based on ACT/SAT scores. The MSL measures selectivity by seven classifications: special (1), non-competitive (2), less-competitive (3), competitive (4), very competitive (5), highly competitive (6), and most competitive (7). In this study, *special* was recoded into the same classification as *non-competitive*.

Academic Performance

Participants' self-reported college GPA served as the measure for academic performance. In the MSL, GPA is measured categorically, from 1-5. The GPA categories are as follows: 1=1.99 or less, 2=2.00 – 2.49, 3=2.50 – 2.99, 4=3.00 – 3.49, 5=3.50 – 4.00. In this study, GPA was measured as a categorical variable in the descriptive analysis and a continuous variable in the regression analysis. When measured as a continuous variable, GPA has a range of 1-5, with lower scores indicating lower academic performance and higher scores indicating higher levels of academic performance.

Faculty and Peer Interactions

Two separate measures comprise faculty interactions: research with a faculty member and mentoring by a faculty member. Participants were asked, *Which of the following have you engaged in during your college experience?* Research with a faculty member was among the choices they could respond to with a *yes* or *no*.

Table 4

Variables and Coding Schema

Inputs/Student Characteristics

| | |
|--|---|
| <i>Gender</i> | |
| Female | Male is referent group |
| Male | |
| <i>Race/Ethnicity</i> | |
| White/ Caucasian | White is the referent group |
| Middle Eastern | |
| African American/ Black | |
| American Indian/ Alaska Native | |
| Asian American/ Asian | |
| Latino/ Hispanic | |
| Multiracial | |
| Race/Ethnicity not include above | |
| <i>Parental Educational Attainment</i> | |
| (1) Less than high school diploma or less than a GED | Continuous index 1-7, high value indicates higher levels of formal education obtained by parent |
| (2) High school diploma or a GED | |
| (3) Some college | |
| (4) Associates degree | |
| (5) Bachelors degree | |
| (6) Masters degree | |
| (7) Doctorate or professional degree (ex. JD, MD, PhD) | |

Between College/Structural Characteristics

| | |
|-------------------------------------|--|
| <i>Institution Size</i> | |
| (1) Small (3,000 or fewer students) | Categorical variable 1=small, 2=medium, 3=large |
| (2) Medium (3,001-10,000) | |
| (3) Large (10,001 or more students) | |
| <i>Institution Selectivity</i> | |
| (1) Non-Competitive/Special | Continuous index 1-6, high value indicates greater institutional selectivity |
| (2) Less Competitive | |
| (3) Competitive | |
| (4) Very Competitive | |
| (5) Highly Competitive | |
| (6) Most Competitive | |

Academic Performance and Faculty Interactions

| | |
|-----------------------|---|
| <i>Class Standing</i> | |
| (1) Freshmen | Categorical variable 1= Freshmen, 2= Sophomore, 3= Junior, 4= Senior |
| (2) Sophomore | |
| (3) Junior | |
| (4) Senior | |
| <i>College GPA</i> | |
| (1) 1.99 or less | |

- (2) 2.00 – 2.49
- (3) 2.50 – 2.99
- (4) 3.00 – 3.49
- (5) 3.50 – 4.00

Continuous index 1-5, high value indicates stronger academic performance

Research with a faculty member

Categorical variable
0= No, 1= Yes

Mentoring by a faculty member

- (0) Never
- (1) Once
- (2) Sometimes
- (3) Often

Continuous index 0-3, high value indicates greater frequency of mentoring interactions with faculty members

Peer Interactions and Student Involvement

Mentoring by a peer

- (0) Never
- (1) Once
- (2) Sometimes
- (3) Often

Continuous index 0-3, high value indicates greater frequency of mentoring interactions with peers

Sociocultural discussions with peers

- (0) Never
- (1) Sometimes
- (2) Often
- (3) Very often

Continuous index 0-3, high value indicates greater frequency of sociocultural discussions

Place of Residence

Categorical variable
0= Off-campus, 1=On-campus

Been an involved member in college organizations

- (0) Never
- (1) Once
- (2) Sometimes
- (3) Many times
- (4) Much of the time

Continuous index 0-4, high value indicates membership in college organizations for much of the time while a student

Been an involved member in an off-campus community organization(s)

- (0) Never
- (1) Once
- (2) Sometimes
- (3) Many times
- (4) Much of the time

Continuous index 0-4, high value indicates involvement in an off-campus community organization for much of the time during college

Outcome: Sense of Belonging (Belonging Climate Scale)

- (1) Strongly disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly agree

Continuous index 1-5, high value indicates higher perceptions of sense of belonging

In addition to having engaged in research with a faculty member, participants also indicated the frequency with which a faculty member or instructor mentored them. Response items ranged from *never* (1) to *often* (4). The response scale was recoded to range from *never* (0) to *often* (3). Two measures of peer interactions were included in this analysis: formal and informal peer interactions.

The frequency with which another student mentored the participant serves as the formal interaction. Response items ranged from *never* (1) to *often* (4), but was recoded to range from (0) *never* to (3) *often*. Informal peer interactions were measured by the sociocultural discussions scale. The sociocultural discussions scale is a six-item scale that measures the frequency with which students socialize across backgrounds and with people different from themselves. The scale begins with a prompt of: *during interactions with other students outside of class, how often have you done each of the following in an average school year?* Participants then respond to items such as, *discussed your views about multiculturalism and diversity* and *held discussions with students whose political opinions were very different from your own*. Originally the questions utilized a 1-4 response scale, ranging from *never* (1) to *very often* (4); but it was recoded to range from (0) *never* to (3) *very often*. The sociocultural discussions scale has a Cronbach's alpha level of .90 for the 2009 MSL sample and .89 for use with this study's sample.

Campus Environments and Student Involvement

Students' place of residence and general perceptions about the frequency, context, and type of involvement during their time in college are referred to as campus environments and involvements. Students' place of residence is measured as either on-campus or off-campus. To measure involvement, participants responded to two prompts

that measure how often they have done the following: *been an involved member in college organizations* and *been an involved member in an off-campus community organization(s)*. The response scales are continuous and range from 1-5, *never* (1) to *much of the time* (5). The response scales were recoded to range from (0) *never* to (4) *much of the time*. Finally, to identify the specific types of organizations that students had been involved with, they were asked to indicate *yes* or *no* to their participation in a range of activities, including academically focused student groups and identity-based groups, to intramurals and social Greek letter organizations. These data will be described descriptively, but will not be included in the regression analysis.

Outcome/Dependent Variable

Sense of belonging is measured using a previously existing scale in the MSL: the belonging climate scale (Dugan & Komives, n.d.). The belonging climate scale consists of three questions to which students report their level of agreement with the following statements: *I feel valued as a person at this school; I feel accepted as a part of the campus community; I feel I belong on this campus*. Responses range from *strongly disagree* (1) to *strongly agree* (5). This scale is entered as a continuous scale in which higher scores suggest greater perceptions of belonging. Together, the three items that comprise the belonging climate scale yielded a Cronbach's alpha of .87 for the 2009 MSL sample. The Cronbach's alpha for the belonging climate scale was .88 for use with the current study's sample. For detailed information on the construction of the belonging climate scale based on factor analysis of a larger set of items, see Dugan and Komives, n.d. Throughout the results and discussion sections of this study, the term sense of belonging is refers to scores on the belonging climate scale.

A review of published research generated using MSL data indicated that researchers have explored within group differences among students within the Lesbian, Gay, Bisexual, and Transgendered community on scores of sense of belonging (Dugan, Kusel, & Simounet, 2012) but did not include data that confirmed the validity of the sense of belonging scale. In an effort to substantiate the validity of the belonging climate scale, the present researcher conducted two separate regression analyses using the 2009 MSL data set, minus international students (n=88,749).

Existing literature suggests that compared to their White peers, students of color report lower perceptions of sense of belonging (Johnson et al., 2007; Strayhorn, 2008). Informed by this information, sense of belonging was regressed onto race/ethnicity with the anticipated result that students of color will report lower perceptions of sense of belonging compared to their White peers in the MSL sample, as indicated by negative beta weights. The regression analysis of race/ethnicity and sense of belonging was statistically significant ($R^2=.01$, $F(7, 88,442)=68.68$, $p<.001$). Consistent with existing literature, this analysis indicated that compared to their White peers, students who self-reported their racial/ethnic identity as an identity other than White reported lower scores on the sense of belonging scale (table 5). As predicted, the regression analysis showed beta values ranging from $-.08$ to $-.25$, $p<.001$. These findings suggest that the belonging climate scale designed for use in the MSL instrument is a valid measure of the construct of sense of belonging.

In addition to exploring the impact of race/ethnicity on sense of belonging, sense of belonging was regressed on the variable *been an involved member in college organizations* with the anticipated outcome that higher reports of involvement in college

organizations would result in increased sense of belonging (Johnson, et al., 2007; Maestas et al., 2007).

Table 5

Validity Regression: Race/ethnicity

| | β | Standard Error | Beta | t | p |
|--|---------|----------------|------|--------|-------|
| Race/ethnicity | | | | | |
| Middle Eastern | -.14 | .04 | -.01 | -3.72 | .000* |
| African American/Black | -.08 | .01 | -.02 | -6.61 | .000* |
| American Indian/Alaska Native | -.15 | .04 | -.01 | -3.71 | .000* |
| Asian American/Asian | -.18 | .01 | -.05 | -15.32 | .000* |
| Latino/Hispanic | -.12 | .01 | -.03 | -8.26 | .000* |
| Multiracial | -.11 | .01 | -.04 | -10.86 | .000* |
| Race/ethnicity other than what was specified | -.25 | .03 | -.03 | -9.55 | .000* |

* $p < .001$

The regression results yielded statistically significant results ($R^2 = .07$, $F(1, 88,595) = 6685.12$, $p < .001$). Students' self-reports of having been an involved member in an college organizations ($\beta = .15$, $t(88,747) = 81.76$, $p < .001$) was a positive, statistically significant predictor of sense of belonging. The results were consistent with the aforementioned literature on sense of belonging and thereby suggest that the MSL's scale for sense of belonging is a valid measure of the construct.

Data Analytic Plan

Research Question 1

What does the descriptive profile of students with psychological conditions depict based upon gender, year in school, selectivity and size of the institution, academic performance, and student involvement compared to students who do not report having a psychological condition?

A comparative analysis in the form of frequencies, means, and standard deviations was used to develop the profile of students with psychological conditions. Gender and year in school provided basic characteristics of the sample of students who self-reported having a psychological condition. Institutional characteristics of size and selectivity were analyzed to determine the proportion of students with psychological conditions attending each type of institution. Finally, college GPA and types of student involvement were examined to determine how students performed academically and the types of co-curricular involvement they participate in. Once the descriptive profile was created, Chi-square tests were used to compare the proportion of students across the categorical variables; t-tests were used to compare the mean scores of students with psychological conditions and those without psychological conditions on the continuous variables. Table 6 outlines the variables that were analyzed in the descriptive profile and the method of analysis.

Research Question 2

After controlling for students' input and demographic characteristics, what environmental variables predict sense of belonging for students with psychological conditions?

Variables were entered into the hierarchical regression model using Astin's (1993) I-E-O model. Table 7 outlines the regression model and the variables used in the analysis of research question 2. The input variables that comprised the first regression block for this study were gender, race/ethnicity, and parental educational attainment. Regression block 2 included variables related to academic performance and formal interactions with faculty members. College GPA measured academic performance;

formal interactions with faculty were measured by the frequency with which students reported being mentored by a faculty member and whether or not the student reported engaging in research with a faculty member during their time in college.

Table 6

Variables used in the Comparative Analysis

| Chi-square test of independence | |
|---|---|
| Gender | Resident Assistant |
| Class Standing | Peer Helper |
| Institution Size | Advocacy |
| Selectivity | Political |
| College GPA | Religious |
| Student Involvement Activities | Service |
| Academic/departmental/professional | Multicultural Fraternities and Sororities |
| Arts/theater/music | Social Fraternities and Sororities |
| Campus-Wide Programming | Sports: Intercollegiate/Varsity |
| Identity-Based | Sports: Club |
| International Interest | Sports: Intramural |
| Honor Society | Recreational |
| Media | Social/Special Interest |
| Military | Student Governance |
| New Student Transitions | |
| Independent groups t-test | |
| Sense of Belonging | |
| College GPA | |
| Been an involved member in college organizations | |
| Been an involved member in an off-campus community organization | |

The third regression block was comprised of variables that measured formal and informal interactions with peers, student involvement in on and off-campus organizations, and place of residence (on or off-campus). Formal interactions with peers were measured by the frequency with which students reported having been mentored by another student. Informal peer interaction was measured by the sociocultural discussions scale. Finally, the dependent variable measured was sense of belonging, as measured by the belonging

climate scale. Prior to conducting the regression analysis, diagnostics of correlation, VIF, and tolerance were evaluated for multicollinearity.

Table 7

Variables by Regression Blocks

| Inputs | Environment | Outcomes |
|---|--|---|
| <p>Block 1 <i>Student Characteristics and Demographic Information</i></p> <p>Gender</p> <p>Race/ethnicity</p> <p>Parental educational attainment</p> | <p>Block 2 <i>Academic Performance and Faculty Interactions</i></p> <p>College GPA</p> <p>Research with a faculty member</p> <p>Mentoring by a faculty member</p> <p>Block 3 <i>Peer Interactions and Student Involvement</i></p> <p>Mentoring by a peer</p> <p>Sociocultural discussions</p> <p>Involvement in college organizations</p> <p>Involvement in off-campus community organizations</p> <p>Living on-campus</p> | <p><i>Outcome</i></p> <p>Sense of belonging</p> |

Research Question 3

Do the predictors of sense of belonging differ between students with psychological conditions and those who do not report having a psychological condition?

The same hierarchical multiple regression used to determine the predictors of sense of belonging for students with psychological conditions was used to identify the predictors for the comparative sample (table 7). The results of the regression analysis were compared to determine which predictors were statistically significant in each one of the models based on the outputs of the separate regression analysis. Next, the equality of the beta coefficients was tested across both models using t-tests to determine if they were statistically different from one another.

The equality of beta coefficients was tested by transforming the unstandardized beta coefficients into t-scores. The following formula was used to transform the beta coefficients into t-scores (Paternoster, Brame, Mazerolle Mazerolle, & Piquero, 1998; Wuensch, 2007):

$$t = \frac{b_1 - b_2}{\sqrt{SEb_1^2 + SEb_2^2}}$$

Only the beta coefficients of the college environment variables (i.e. blocks 2 and 3) that were statistically significant in at least one of the models were compared for differences.

Chapter 4: Results

Descriptive Profile: Students with Psychological Conditions

Table 8 details the means, standard deviations, and coding schema of the variables used in the statistical analysis of this study for each sample: students who self-reported a psychological condition (n=2,601) and the randomly selective comparative sample of students who did not report a psychological condition (n=2,978). Table 9 provides the frequencies for the variables that comprise the descriptive profile outlined in research question 1: gender, class standing, institution size and selectivity, college GPA, and student involvement. Frequency data is provided for the sample of students with psychological conditions and the comparative sample.

The descriptive analysis of students with psychological conditions indicates that students who self-reported having a psychological condition were mostly females (79.8%), with the greatest proportion of students attending very competitive (33.9%), mid-sized institutions (45.3%). Students with psychological conditions were distributed across all class levels, but the largest number of students reported being in their senior year (33.8%). Similarly, students' reports of their GPA were distributed across all categories. The fewest number of students (1.3%) reported their GPA as 1.99 or less and the greatest number of students (37.4%) reported their college GPA as 3.5 and 4.0. To better understand the quantity and nature of student involvement, several variables were analyzed: students' self-reports of being an involved member in college organizations, their reports of being an involved member in an off-campus community organization, and the types of activities and organizations they participated in during their time in college. The greatest number of students who self-reported having a psychological condition

characterized the amount of time they were an involved member in college organizations as *sometimes* (27.3%), followed by *much of the time* (23%). Pertaining to their involvement in off-campus community organizations, the greatest number of students indicated that their level of involvement was *never* (63.6%), followed by *sometimes* (16%). Students reported being involved in a wide range of activities and organizations during their time in college.

The largest number of students reported involvement in academic/departmental/professional organizations (33.9%), followed by service organizations (26.5%), arts/theater/music groups (25%), and intramural sports (24.8%). The fewest number of students reported involvement in military organizations (1.2%), multicultural fraternities and sororities (2.3%), Resident Assistant (6.7%), and varsity/intercollegiate sports (7.2%).

Comparative Analysis

Beyond developing a descriptive profile of students with psychological conditions, it was important to determine if the profile of students with psychological conditions was significantly different than that of students who did not self-report having a psychological condition. Thus, Chi-square tests for independence and crosstab analysis were used to analyze the categorical variables, and t-tests were used to analyze the continuous variables.

Table 8

Means and Standard Deviations

| Variables | Students with Psychological Conditions | | Students without Psychological Conditions | | Variable Coding |
|--|--|------|---|------|---|
| | M | SD | M | SD | |
| Student Background Characteristics | | | | | |
| Gender (female) | .80 | .40 | .65 | .48 | 0= male, 1= female |
| Parental educational attainment | 4.85 | 1.58 | 4.62 | 1.65 | Continuous index from 1-7, with high value indicating greatest level of parental educational attainment 1= less than high school diploma or less than a GED, 2= high school diploma or a GED, 3= some college, 4= associates degree, 5= bachelors degree, 6= masters degree, 7= doctorate or professional degree (ex. JD, MD, PhD) |
| College/Structural Characteristics | | | | | |
| Size | 2.1 | .73 | 2.16 | .73 | 1= small, 2= medium, 3= large |
| Selectivity | 4.04 | 1.19 | 4.0 | 1.24 | Continuous index from 1-6, with high value indicating greatest level of selectivity |
| Academic Performance/Faculty Interactions | | | | | |
| Class standing | 2.79 | 1.09 | 2.62 | 1.13 | 1= freshmen, 2= sophomore, 3= junior, 4= senior |
| College GPA | 4.03 | .95 | 4.13 | .88 | Continuous index 1-5, high value indicates stronger academic performance 1= 1.99 or less, 2= 2.0-2.49, 3= 2.5-2.99, 4= 3.0-3.49, 5= 3.5-4.0 |

| | | | | | |
|---|------|------|------|------|---|
| Research with a faculty member | .17 | .37 | .15 | .35 | 0= no, 1= yes |
| Mentoring by a faculty member | 1.7 | 1.19 | 1.57 | 1.19 | Continuous index from 0-3, with high value indicating greatest frequency of mentoring by a faculty member 0= never, 1= once, 2= sometimes, 3= often |
| Peer Interactions/Student Involvement | | | | | |
| Mentoring by a peer | 1.5 | 1.28 | 1.54 | 1.27 | Continuous index from 0-3, with high value indicating greatest frequency of mentoring by a peer 0= never, 1= once, 2= sometimes, 3= often |
| Sociocultural discussions | 2.13 | .77 | 2.03 | .77 | Continuous index from 0-3, with high value indicating greatest frequency of sociocultural discussions 0= never, 1= once, 2= sometimes, 3= often |
| Involved member in college organizations | 2.08 | 1.44 | 2.19 | 1.45 | Continuous index from 0-4, with high value indicating membership in college organizations for much of the time while a student 0= never, 1= once, 2= sometimes, 3= many times, 4= much of the time |
| Involved member in an off-campus community organization | .81 | 1.22 | .93 | 1.32 | Continuous index from 0-4, with high value indicating membership in off-campus community organizations for much of the time while a student 0= never, 1= once, |

| | | | | | |
|---------------------------|------|-----|------|-----|--|
| Place of residence | .48 | .50 | .51 | .50 | 2= sometimes, 3= many times, 4= much of the time 0= off-campus, 1= on-campus |
| Dependent Variable | | | | | |
| Sense of belonging | 3.68 | .96 | 3.93 | .79 | Continuous index from 1-5, with high value indicating greatest perceptions of sense of belonging 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree |

Table 9

Descriptive Data: Frequencies and Percentages

| Variables | Students with Psychological Conditions | | Students without Psychological Conditions | |
|-----------------------------|--|------------|---|------------|
| | Frequency | Percentage | Frequency | Percentage |
| Gender | | | | |
| Female | 2075 | 79.8% | 1949 | 65.4% |
| Male | 526 | 20.2% | 1029 | 34.6% |
| Class Standing | | | | |
| Freshmen | 453 | 17.4% | 683 | 22.9% |
| Sophomore | 525 | 20.2% | 649 | 21.8% |
| Junior | 743 | 28.6% | 772 | 25.9% |
| Senior and above | 880 | 33.8% | 874 | 29.3% |
| Institution Size | | | | |
| Small | 579 | 22.3% | 588 | 19.7% |
| Medium | 1179 | 45.3% | 1323 | 44.4% |
| Large | 843 | 32.4% | 1067 | 35.8% |
| Selectivity | | | | |
| Non-competitive and special | 97 | 3.7% | 133 | 4.5% |
| Less Competitive | 94 | 3.6% | 152 | 5.1% |
| Competitive | 627 | 24.1% | 679 | 22.8% |
| Very Competitive | 883 | 33.9% | 1014 | 34.0% |
| Highly Competitive | 593 | 22.8% | 629 | 21.1% |
| Most Competitive | 307 | 11.8% | 371 | 12.5% |
| College GPA | | | | |
| 1.99 or less | 34 | 1.3% | 21 | 0.7% |

| | | | | |
|--|------|-------|------|-------|
| 2.0-2.49 | 145 | 5.6% | 112 | 3.8% |
| 2.5-2.99 | 506 | 19.5% | 525 | 17.6% |
| 3.0-3.49 | 944 | 36.3% | 1128 | 37.9% |
| 3.5-4.0 | 972 | 37.4% | 1192 | 40% |
| Been an involved member in college organizations | | | | |
| Never | 580 | 22.3% | 604 | 20.3% |
| Once | 275 | 10.6% | 303 | 10.2% |
| Sometimes | 710 | 27.3% | 758 | 25.5% |
| Many times | 438 | 16.8% | 548 | 18.4% |
| Much of the time | 598 | 23% | 765 | 25.7% |
| Been an involved member in an off-campus community organization | | | | |
| Never | 1654 | 63.6% | 1812 | 60.8% |
| Once | 216 | 8.3% | 247 | 8.3% |
| Sometimes | 415 | 16% | 465 | 15.6% |
| Many times | 192 | 7.4% | 227 | 7.6% |
| Much of the time | 124 | 4.8% | 227 | 7.6% |
| Student Involvement Activities | | | | |
| Academic/Departmental | 882 | 33.9% | 1066 | 35.8% |
| Arts/Theater/Music | 650 | 25.0% | 526 | 17.7% |
| Campus-Wide | 390 | 15.0% | 472 | 15.9% |
| Programming | | | | |
| Identity-Based | 412 | 15.8% | 421 | 14.1% |
| International Interest | 351 | 13.5% | 371 | 12.5% |
| Honor Society | 586 | 22.5% | 655 | 22% |
| Media | 330 | 12.7% | 305 | 10.2% |
| Military | 31 | 1.2% | 64 | 2.1% |
| New Student | 331 | 12.7% | 402 | 13.5% |
| Transitions | | | | |
| Resident Assistant | 157 | 6.0% | 165 | 5.5% |
| Peer Helper | 461 | 17.7% | 463 | 15.6% |
| Advocacy | 350 | 13.5% | 228 | 7.7% |
| Political | 390 | 15% | 361 | 12.1% |
| Religious | 448 | 17.2% | 579 | 19.4% |
| Service | 688 | 26.5% | 718 | 24.1% |
| Multicultural | 59 | 2.3% | 103 | 3.5% |
| Fraternities and Sororities | | | | |
| Social Fraternities and Sororities | 407 | 15.6% | 502 | 16.9% |
| Intercollegiate Sports | 186 | 7.2% | 381 | 12.8% |
| Club Sports | 289 | 11.1% | 450 | 15.1% |
| Intramural Sports | 644 | 24.8% | 1093 | 36.7% |
| Recreational | 429 | 16.5% | 600 | 20.2% |
| Social/Special Interest | 439 | 16.9% | 368 | 12.4% |
| Student Governance | 300 | 11.5% | 331 | 11.1% |

Chi-square tests for independence were conducted to determine if the proportion of students distributed across each of the categorical variables differed based on psychological status (i.e. students with a psychological condition and those without). Table 10 provides a summary of the Chi-square results. The categorical variables used in this analysis were: gender, class standing, institution size, institution selectivity, college GPA, and involvement in specific activities, clubs, and organizations.

The Chi-square analysis indicated that the proportion of students who self-reported a psychological condition compared to those who did not was statistically significant at $p \leq .05$ for the following variables: gender, class standing, institution size, institution selectivity, and college GPA (table 11). Although the variables were significant, only specific categories within the variables produced standardized residuals ≥ 2 : gender (female) (standardized residual: 4.6), class standing of freshmen (standardized residual: -3.3) and senior (standardized residual: 2.2), and college GPA of 2.0-2.49 (standardized residual: 2.3). A larger than expected number of females self-reported as having a psychological condition. The distribution of students across class standing differed between the reported and expected values for students with psychological conditions with fewer numbers of freshmen and greater numbers of seniors than expected. Related to academic performance, there were more students than expected who reported their GPA as 2.0-2.49.

Student involvement in the following types of activities, clubs, and organizations was also statistically significant at $p \leq .05$ level: arts/theater/music, media, military, peer helper, advocacy, political, religious, service, multicultural fraternities and sororities,

intercollegiate/varsity sports, club sports, intramural sports, recreation, and social/special interest (table 12).

Students with psychological conditions reported greater than expected participation (standardized residuals ≥ 2) in the following types of activities and organizations: arts/theater/music (standardized residual: 4.3), media (standardized residual: 2.0), advocacy (standardized residual: 4.9), political (standardized residual: 2.1), and social/special interest (standardized residual: 3.2). Students who self-reported a psychological condition reported less involvement (standardized residual ≥ 2) in the following activities: military (standardized residual: -2), intercollegiate/varsity sports (standardized residual: -4.8), club sports (standardized residual: -3), intramural sports (standardized residual: -5.8), and recreational clubs (standardized residual: -2.3).

Independent groups t-tests were used to determine if the difference in mean scores on continuous variables between students with psychological conditions and those who did not report psychological conditions was statistically significant. Two continuous variables that measured student involvement were analyzed: students' self-reports of being an involved member in college organizations and students' self-reports of being an involved member of an off-campus community organization. Each of the variables was continuous, with a range of 0-4. Student GPA was analyzed as both a categorical variable and a continuous variable. Analyzing GPA as a categorical variable allowed for the proportion of students within each category to be explored; analyzing it as a continuous variable allowed for a comparison of mean scores between the two groups. Finally, the mean scores on the belonging climate scale were compared.

Table 10

Summary of Chi Square Results

| | χ^2 | <i>p</i> value | ϕ | Effect Size |
|---|----------|-----------------------|--------|-------------|
| Student Background Characteristics | | | | |
| Gender | 41.82 | *** <i>p</i> <.001 | .16 | Small |
| Class Standing | 34.92 | *** <i>p</i> <.001 | .08 | Very small |
| Institution Size | 9.19 | ** <i>p</i> =.01 | .04 | Very small |
| Institution Selectivity | 12.11 | * <i>p</i> =.03 | .05 | Very small |
| College GPA | 20.99 | *** <i>p</i> <.001 | .06 | Very small |
| Student Involvement | | | | |
| Academic/Departmental/ Professional | 2.17 | <i>p</i> =.14 | .02 | |
| Arts/Theater/Music | 44.81 | *** <i>p</i> <.001 | -.09 | Very small |
| Campus-Wide Programming | .78 | <i>p</i> =.38 | .01 | |
| Identity-Based | 3.19 | <i>p</i> =.07 | -.02 | |
| International Interest | 1.34 | <i>p</i> =.25 | -.02 | |
| Honor Societies | .24 | <i>p</i> =.63 | -.01 | |
| Media | 8.26 | * <i>p</i> =.004 | -.04 | Very small |
| Military | 7.59 | ** <i>p</i> =.01 | .04 | Very small |
| New Student Transitions | .73 | <i>p</i> =.39 | .01 | |
| Resident Assistant | .63 | <i>p</i> =.43 | -.01 | |
| Peer Helper | 4.76 | ** <i>p</i> =.03 | -.03 | Very small |
| Advocacy | 50.17 | *** <i>p</i> <.001 | -.10 | Very small |
| Political | 9.83 | * <i>p</i> =.002 | -.04 | Very small |
| Religious | 4.55 | * <i>p</i> =.03 | .03 | Very small |
| Service | 3.98 | * <i>p</i> =.05 | -.03 | Very small |
| Multi-Cultural Fraternities and Sororities | 6.98 | ** <i>p</i> =.01 | .04 | Very small |
| Social Fraternities or Sororities | 1.49 | <i>p</i> =.22 | .02 | Very small |
| Sports- Intercollegiate or Varsity | 48.42 | *** <i>p</i> <.001 | .09 | Very small |
| Sports- Club | 19.28 | *** <i>p</i> <.001 | .06 | Very small |
| Sports- Intramural | 92.53 | *** <i>p</i> <.001 | .13 | Small |
| Recreational | 12.32 | *** <i>p</i> <.001 | .05 | Very small |
| Social/Special Interest | 22.93 | *** <i>p</i> <.001 | -.06 | Very small |
| Student Governance | .24 | <i>p</i> =.62 | -.01 | |

* *p* ≤ .05, ** *p* ≤ .01, *** *p* ≤ .001

Cohen's (1992) effect size: small= .10, medium= .30, large= .50

Table 11

Crosstab Analysis of Categorical Variables

| | Students with Psychological conditions | | Students without Psychological Conditions | | χ^2 | ϕ |
|---------------------------------|---|--------------------------|--|--------------------------|-----------|--------|
| | N (Expected) | Proportion (Expected) | N (Expected) | Proportion (Expected) | | |
| Gender | | | | | | |
| Females | 2075 (1876) | 79.8% (72.1%) | 1949 (2148) | 65.4% (72.1%) | 141.82*** | .16 |
| Males | 526 (725) | 20.2% (27.9%) | 1029 (830) | 34.6% (27.9%) | | |
| Class standing | | | | | | |
| Freshmen | 453 (530) | 17.4% (20.4%) | 683 (606) | 22.9% (20.3%) | 34.92*** | .08 |
| Sophomore | 525 (547) | 20.2% (21%) | 649 (627) | 21.8% (21.1%) | | |
| Junior | 743 (706) | 28.6% (27.1%) | 772 (809) | 25.9% (27.2%) | | |
| Senior | 880 (818) | 33.8% (31.4%) | 874 (936) | 29.3% (31.4%) | | |
| Institution Size | | | | | | |
| Small | 579 (544) | 22.3% (20.9%) | 588 (623) | 19.7% (20.9%) | 9.19* | .04 |
| Medium | 1179 (1167) | 45.3% (44.9%) | 1323 (1336) | 44.4% (44.9%) | | |
| Large | 843 (891) | 32.4% (34.3%) | 1067 (1020) | 35.8% (34.3%) | | |
| Institution Selectivity | | | | | | |
| Non- competitive/ Special | 97 (107) | 3.7% (4.1%) | 133 (123) | 4.5% (4.1%) | 12.11* | .05 |
| Less Competitive | 94 (115) | 3.6% (4.4%) | 152 (131) | 5.1% (4.4%) | | |
| Competitive | 627 (609) | 24.1% (23.4%) | 679 (697) | 22.8% (23.4%) | | |
| Very Competitive | 883 (884) | 33.9% (34%) | 1014 (1013) | 34% (34%) | | |
| Highly Competitive | 593 (570) | 22.8% (21.9%) | 629 (652) | 21.1% (21.9%) | | |
| Most Competitive | 307 (316) | 11.8% (12.1%) | 371 (362) | 12.5% (12.2%) | | |
| College GPA | | | | | | |
| 1.99 or less | 34 (26) | 1.3% (1.0%) | 21 (29) | 0.7% (1.0%) | 20.99*** | .06 |

| | | | | |
|-----------|---------------|------------------|----------------|------------------|
| 2.0-2.49 | 145 (120) | 5.6% (4.6%) | 112 (137) | 3.8% (4.6%) |
| 2.50-2.99 | 506 (481) | 19.5% (18.5%) | 525 (550) | 17.6% (18.5%) |
| 3.0-3.49 | 944 (966) | 36.3% (37.1%) | 1128 (1106) | 37.9% (37.1%) |
| 3.5-4.0 | 972 (1009) | 37.4% (38.8%) | 1192 (1155) | 40% (38.8%) |

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 12

Crosstab Analysis of Student Involvement

| | Students with Psychological conditions | | Students without Psychological Conditions | | χ^2 | ϕ |
|--|--|-----------------------|---|-----------------------|----------|--------|
| | N (Expected) | Proportion (Expected) | N (Expected) | Proportion (Expected) | | |
| Student Involvement Type | | | | | | |
| Arts/theater/ music | 650 (548) | 25% (21.1%) | 526 (628) | 17.7% (21.4%) | 44.81*** | -.09 |
| Media | 330 (296) | 12.7% (11.4%) | 305 (339) | 10.2% (11.4%) | 8.26** | -.04 |
| Military | 31 (44) | 1.2% (1.7%) | 64 (51) | 2.1% (1.7%) | 7.59** | .04 |
| Peer Helper | 461 (431) | 17.7% (16.6%) | 463 (493) | 15.6% (16.6%) | 4.76* | -.03 |
| Advocacy | 350 (270) | 13.5% (10.4%) | 228 (308) | 7.7% (10.3%) | 50.17*** | -.10 |
| Political | 390 (350) | 15% (13.5%) | 361 (401) | 12.1% (13.5%) | 9.83** | -.04 |
| Religious | 448 (479) | 17.2% (18.4%) | 579 (548) | 19.4% (18.4%) | 4.55* | .03 |
| Service | 688 (656) | 26.5% (25.2%) | 718 (750) | 24.1% (25.2%) | 3.98* | -.03 |
| Multicultural Fraternities and Sororities | 59 (76) | 2.3% (2.9%) | 103 (87) | 3.5% (2.9%) | 6.98** | .04 |
| Inter- collegiate Sports | 186 (264) | 7.2% (10.2%) | 381 (303) | 12.8% (10.2%) | 48.42*** | .09 |
| Club Sports | 289 (345) | 11.1% (13.3%) | 450 (395) | 15.1% (13.3%) | 19.28*** | .06 |
| Intramural Sports | 644 (810) | 24.8% (31.1%) | 1093 (927) | 36.7% (31.1%) | 92.53*** | .13 |

| | | | | | | |
|-------------------------|-------|---------|-------|---------|----------------------|------|
| Recreational | 429 | 16.5% | 600 | 20.2% | 12.32 ^{***} | .05 |
| Sports | (480) | (18.5%) | (549) | (18.4%) | | |
| Social/Special Interest | 439 | 16.9% | 368 | 12.4% | 22.93 ^{***} | -.06 |
| | (376) | (14.4%) | (431) | (14.5%) | | |

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

The results of the t-tests indicated that for each of the continuous variables measured, there was a statistically significant difference between the mean scores of students with psychological conditions and those who did not report having a psychological condition. Students with psychological conditions reported lower levels of involvement in college organizations compared to students who did not report having a psychological condition (table 13). Similarly, students with psychological conditions reported lower levels of involvement in off-campus organizations than did those who did not report having a psychological condition (table 13). When measured as a continuous variable, GPA ranged from 1-5. The independent groups t-test indicated that students with psychological conditions reported lower college GPA's than did those who did not report having a psychological condition (table 13). Although the t-tests produced statistically significant results, note that the effect size for each of the variables is very small or small. Cohen's *d* (Cohen, 1992) convention for effect size for independent samples t-tests is as follows: small= .2, medium= .5, and large= .8. Student involvement in college organizations, involvement in off-campus community organizations, and college GPA were all below the Cohen's *d* threshold for small (table 13). The very small effect size suggests that although the independent t-tests yielded statistically significant results, it could be argued that the mean difference in scores between students who self-reported a psychological condition and those who did not report a psychological condition is much less impactful. However, the difference in mean scores for sense of

belonging yielded a small effect size and should be taken into consideration, as it suggests that the difference in scores has a bit more of an impact for students who self-reported a psychological (table 13). To summarize, for the purposes of the comparative analysis, Chi-square tests for independence and independent group t-tests were used to determine if the descriptive profile of students with psychological conditions differed significantly compared to that of students who did not report having a psychological condition. Gender, class standing, institution size and selectivity, college GPA, and student involvement in specific clubs, organizations, and activities were categorical variables analyzed via Chi-square analysis. Students' self-reports of being an involved member in college organizations and being an involved member in an off-campus community organization were analyzed using independent group t-tests.

Table 13

Mean Differences for Continuous Variables

| | M | SD | t | df | Cohen's <i>d</i> |
|--|----------|-----------|-----------|-----------|-----------------------------|
| Involved member in college organizations | | | | | |
| Students with Psychological Conditions | 2.08 | 1.44 | -2.94** | 5577 | -.08 |
| Students without Psychological Conditions | 2.19 | 1.45 | | | |
| Involved member in an off-campus community organization | | | | | |
| Students with Psychological Conditions | .81 | 1.22 | -3.36*** | 5561.2 | -.09 |
| Students without Psychological Conditions | .93 | 1.32 | | | |
| College GPA | | | | | |
| Students with Psychological Conditions | 4.03 | .95 | -4.04*** | 5577 | -.11 |
| Students without Psychological Conditions | 4.13 | .88 | | | |
| Sense of Belonging | | | | | |
| Students with Psychological Conditions | 3.68 | .96 | -10.56*** | 5039.38 | -.2 |
| Students without Psychological Conditions | 3.93 | .79 | | | |

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

Cohen's *d* (Cohen, 1992) effect size: small = .2, medium = .5, large = .8

In addition to analyzing GPA as a categorical variable, it was analyzed using a t-test to determine if students' mean scores differed significantly between those who reported having a psychological condition and those who did not.

The categorical variables of gender, institution size and selectivity, class standing, and college GPA all yielded statistically significant results. The proportion of students who self-reported as female, a class standing of freshmen and senior, and GPA of 2.0-2.49 were particularly relevant. Similarly, students' mean scores on being an involved member in college organizations, off-campus community organizations, college GPA, and sense of belonging yielded statistically significant results. The effect size for sense of belonging was small, which suggests that this finding is not only significant, but is likely . Comparatively, the effect size for involvement in on and off-campus organizations, and GPA was very small, thereby suggesting that while the results are statistically significant, the true differences in these variables between students with psychological conditions and those without is negligible. Although the effect size indicates that the difference between mean scores is negligible, the pattern of student participation and involvement in specific activities helps to illuminate the ways in which students with psychological conditions and those without are similar and different in their co-curricular involvement.

There were no statistically significant differences between involvement in a number of college organizations for students with and students without psychological conditions. Involvement did not differ between the two samples for the following activities: academic/departmental/professional clubs, campus-wide programming, identity-based groups, honor societies, new student transitions, Resident Assistant, social

fraternities and sororities, and student governance. Involvement did differ significantly between students with psychological conditions and those without for a variety of activities and clubs.

Greater proportions of students with psychological conditions reported participation in the following activities: arts/theater/music, media clubs, advocacy, political, and social/special interest clubs. In comparison, greater proportions of students without psychological conditions reported involvement in the following activities: military, intercollegiate/varsity sports, club sports, intramural sports, and recreational groups. In conclusion, the comparative analyses suggests that while the differences between students with psychological conditions compared to those without are negligible, a pattern of student involvement has emerged that could be important in better understanding *where* and in *what ways* students with psychological are involved on their college campuses.

Predictors of Sense of Belonging for Students with Psychological Conditions

Research question 2 sought to determine which college environment variables predict sense of belonging for students with psychological conditions after controlling for demographic and input variables. The sample of students with psychological conditions consisted of 2,601 students. A hierarchical multiple regression was used to conduct the analysis. Variables were entered into the model in 3 blocks according to Astin's (1993) I-E-O model. Inputs and demographic variables were entered first, followed by academic performance and faculty interactions in block 2, and peer interactions and student involvement measures in block 3. The dependent variable was sense of belonging, as measured by the belonging climate scale. Prior to performing the regression analysis,

statistics for multicollinearity were conducted. For all variables in the model the variance inflation factor (VIF) was below 2.0 and the collinearity tolerance above .9, thereby indicating that the variables are not multicollinear and are suitable for use in the regression analysis. Overall, the model was statistically significant ($R^2 = .12$, $F(17, 2,581) = 20.83$, $p < .001$), accounting for 12% of the variance in scores for sense of belonging for students with psychological conditions (table 14). The effect size for the model is just below medium ($f^2 = .14$) according to Cohen's f^2 values for effect size: small = .02, medium = .15, large = .35 (Cohen, 1992).

Table 14

Regression Summary Table: Students with Psychological Conditions

| | R^2 | ΔR^2 | F | F Change |
|--|-------|--------------|----------|----------|
| Block 1: Demographic Inputs Gender, Race/ethnicity, Parental educational attainment | .01 | | 4.01*** | |
| Block 2: Academic and Faculty Interactions College GPA, Research with a faculty member, Mentoring by a faculty member | .06 | .05 | 14.49*** | 45.30*** |
| Block 3: Peer Interactions and Student Involvement Mentoring by a peer, Sociocultural discussions, Involved member of college organizations, Involved member of off-campus community organizations, Living on-campus | .12 | .06 | 20.83*** | 33.83*** |

*** $p < .001$

The first block of the regression model included demographic and background characteristics. The three variables that comprised this block were gender, race/ethnicity, and parental educational attainment. This block was statistically significant ($R^2 = .01$, $F(9, 2589) = 4.01$, $p < .001$), accounting for 1% of the variance in scores on the sense of belonging scale for students with psychological conditions (table 15).

The effect size for this block of variables is very small ($f^2=.01$). The combination of the three variables produced a statistically significant result; however, only two variables individually were statistically significant: gender and students who self-reported their racial/ethnic identity as Multiracial.

The influence of gender on sense of belonging was a significant predictor. Compared to men in this sample, being female was a positive predictor of sense of belonging. In regards to students' racial/ethnic identities, compared to their White counterparts, students who self-reported as Multiracial had lower scores on the sense of belonging scale.

Table 15

*Regression Analysis: Block 1
Students with Psychological Conditions*

| | β | Standard Error | Beta | t | p |
|--|---------|----------------|-------|-------|---------|
| Gender (female) | .23 | .05 | .10 | 4.95 | .000*** |
| Race/ethnicity | | | | | |
| Middle Eastern | .71 | .43 | .03 | 1.66 | .10 |
| African American/Black | .03 | .14 | .004 | .21 | .84 |
| American Indian/Alaska Native | -.42 | .30 | -.03 | -1.38 | .17 |
| Asian American/Asian | -.14 | .12 | -.02 | -1.14 | .25 |
| Latino/Hispanic | .15 | .13 | .02 | 1.23 | .22 |
| Multiracial | -.14 | .07 | -.04 | -1.93 | .05* |
| Race/ethnicity other than what was specified | -.01 | .22 | -.001 | -.05 | .96 |
| Parental educational attainment | -.00 | .01 | -.003 | -.14 | .89 |

* $p<.05$, ** $p<.01$, *** $p<.001$

However, race was not a significant predictor for students who self-reported their racial/ethnic identity in the other categories. Finally, parental educational attainment was not found to be a significant predictor of sense of belonging for students with psychological conditions.

The second block of variables, academic performance and faculty interactions, was statistically significant ($R^2=.06$, $F(12, 2586)=14.49$, $p<.001$). After controlling for gender, race/ethnicity, and parental educational attainment, the variables in the second block accounted for approximately 5% ($\Delta R^2= .049$) of the variance in sense of belonging for students with psychological conditions, with a very small effect size ($f^2=.05$) (Cohen, 1992) (table 16). Of the three variables that comprised the second block (i.e. college GPA, research with a faculty member, and mentoring by a faculty member), only mentoring by a faculty member was statistically significant. Based on the results of the regression analysis, for students with psychological conditions, increased frequency of mentoring by a faculty member resulted in an increase in sense of belonging when analyzed with college GPA and research with a faculty member.

Finally, the third block of the regression, peer interactions and student involvement, was statistically significant ($R^2= .12$, $F(17, 2,581)= 20.83$, $p<.001$). After controlling for the demographic variables, academic performance, and faculty interaction variables in blocks 1 and 2, the variables in block 3 account for approximately 6% ($\Delta R^2= .058$) of variance in sense of belonging for students with psychological conditions, with a very small effect size ($f^2 = .06$) (Cohen, 1992) (table 17). Three of the variables were statistically significant: mentoring by a peer, sociocultural discussions, and being an involved member in college organizations.

Table 16

*Regression Analysis: Blocks 1 and 2
Students with Psychological Conditions*

| | β | Standard Error | Beta | t | p |
|--|---------|----------------|------|-------|---------|
| Block 1 | | | | | |
| Gender (female) | .19 | .05 | .08 | 4.19 | .000*** |
| Race/ethnicity | | | | | |
| Middle Eastern | .56 | .42 | .03 | 1.33 | .18 |
| African American/Black | .09 | .14 | .01 | .67 | .50 |
| American Indian/Alaska Native | -.36 | .29 | -.02 | -1.22 | .22 |
| Asian American/Asian | -.11 | .12 | -.02 | -.9 | .37 |
| Latino/Hispanic | .18 | .12 | .03 | 1.45 | .15 |
| Multiracial | -.12 | .07 | -.03 | -1.75 | .08 |
| Race/ethnicity other than what was specified | .02 | .21 | .002 | .09 | .93 |
| Parental educational attainment | -.003 | .01 | -.01 | -.27 | .79 |
| Block 2 | | | | | |
| College GPA | .03 | .02 | .03 | 1.54 | .12 |
| Research with a faculty member | .08 | .05 | .03 | 1.63 | .10 |
| Mentoring by a faculty member | .17 | .02 | .21 | 10.43 | .000*** |

* $p < .05$, ** $p < .01$, *** $p < .001$

Increases in the frequency of mentoring by a peer, engagement in sociocultural discussions, and being an involved member in college organizations all result in increases in sense of belonging. In comparison, being an involved member in an off-campus community organization and living on-campus were not significant predictors of sense of belonging for students with psychological conditions.

To summarize, the overall regression model was statistically significant. After controlling for student characteristics and input variables, block 2 (academic performance and faculty interactions) accounted for approximately 5% of variance in scores on the sense of belonging scale.

Table 17

*Regression Analysis: Blocks 1, 2, and 3
Students with Psychological Conditions*

| | β | Standard Error | Beta | t | p |
|---|---------|----------------|-------|-------|---------|
| Block 1 | | | | | |
| Gender (female) | .16 | .04 | .07 | 3.49 | .000*** |
| Race/ethnicity | | | | | |
| Middle Eastern | .45 | .40 | .02 | 1.12 | .26 |
| African American/Black | .10 | .13 | .01 | .73 | .47 |
| American Indian/Alaska Native | -.30 | .29 | -.02 | -1.05 | .30 |
| Asian American/Asian | -.14 | .12 | -.02 | -1.24 | .26 |
| Latino/Hispanic | .16 | .12 | .02 | 1.36 | .18 |
| Multiracial | -.13 | .07 | -.04 | -2.02 | .04* |
| Race/ethnicity other than what was specified | -.01 | .21 | -.001 | -.07 | .95 |
| Parental educational attainment | -.02 | .01 | -.03 | -1.54 | .12 |
| Block 2 | | | | | |
| College GPA | .02 | .02 | .02 | 1.06 | .29 |
| Research with a faculty member | .04 | .05 | .02 | .78 | .44 |
| Mentoring by a faculty member | .11 | .02 | .13 | 6.48 | .000*** |
| Block 3 | | | | | |
| Mentoring by a peer | .08 | .02 | .11 | 5.64 | .000*** |
| Sociocultural discussions | .08 | .02 | .07 | 3.41 | .001*** |
| Involved member college organizations | .12 | .01 | .17 | 8.42 | .000*** |
| Involved member in an off-campus community organization | -.001 | .02 | -.001 | -.05 | .96 |
| Living (on-campus) | .003 | .04 | .002 | .09 | .93 |

* $p < .05$, ** $p < .01$, *** $p \leq .001$

After controlling for the variables in blocks 1 and 2, block 3 (peer interactions and student involvement) accounted for approximately 6% of the variance in scores on the sense of belonging scale for students with psychological conditions. In the final model, the following environmental variables were positive predictors for sense of belonging for students with psychological conditions: mentoring by a faculty member, mentoring by a peer, sociocultural discussions, and being an involved member in college organizations.

Predictors of Sense of Belonging for Students without Psychological Conditions

To determine if the predictors of sense of belonging differ for students with psychological conditions compared to those who did not report having a psychological condition, the same hierarchical multiple regression was used with a randomly selected comparative sample. The comparative sample consisted of 2,978 students. Prior to conducting the regression analysis, the variables were analyzed for multicollinearity. For all variables in the model the variance inflation factor (VIF) was below 2.0 and the collinearity tolerance above .8, thereby indicating that the variables are not multicollinear and were suitable for use in the regression analysis. Overall, the regression model was statistically significant ($R^2=.125$, $F(17, 2957)=24.88$, $p<.001$), accounting for approximately 13% of the variance in scores on the sense of belonging scale for students without psychological conditions (table 18). The effect size for the model is just below the threshold for medium ($f^2 =.14$) (Cohen, 1992).

Table 18

*Regression Summary Table
Students without Psychological Conditions*

| | R^2 | ΔR^2 | F | F Change |
|---|-------|--------------|----------|----------|
| Block 1: Demographic Inputs Gender, Race/ethnicity, Parental educational attainment | .02 | | 5.88*** | |
| Block 2: Academic and Faculty Interactions College GPA, Research with a faculty member, Mentoring by a faculty member | .06 | .04 | 16.07*** | 45.86*** |
| Block 3: Peer Interactions and Student Involvement Mentoring by a peer, Sociocultural discussions, Involved member in college organizations, Involved member in an off-campus community organizations, Living on-campus | .13 | .06 | 24.88*** | 43.25*** |

 $p<.001$

The first block of the regression included demographic variables for gender, race/ethnicity, and parental educational attainment. Taken together, the three variables produced statistically significant results ($R^2=.018$, $F(9, 2,965)=5.88$, $p<.001$) and produced a small effect size ($f^2=.02$) (Cohen, 1992) (table 19). Individually, not all of the variables were significant. Gender and a number of racial/ethnic identities (African American; Middle Eastern; American Indian/Alaska Native; Latino/Hispanic; Multiracial) were not significant predictors of sense of belonging. In contrast, students who self-reported their racial/ethnic identity as Asian American/Asian and Other reported lower scores on the sense of belonging scale compared to their White peers. Lastly, parental educational attainment was a positive predictor of sense of belonging for students without a psychological condition, with increases in parental educational attainment resulting in higher perceptions of sense of belonging as measured by the scale in this study.

Table 19

*Regression Analysis: Block 1
Students without Psychological Conditions*

| | β | Standard Error | Beta | t | p |
|--|---------|----------------|------|-------|---------|
| Gender (female) | .04 | .03 | .03 | 1.36 | .175 |
| Race/ethnicity | | | | | |
| Middle Eastern | .09 | .20 | .01 | .42 | .67 |
| African American/Black | -.12 | .07 | -.03 | -1.75 | .08 |
| American Indian/Alaska Native | -.28 | .20 | -.03 | -1.40 | .16 |
| Asian American/Asian | -.24 | .06 | -.07 | -3.8 | .000*** |
| Latino/Hispanic | -.06 | .08 | -.02 | -.86 | .39 |
| Multiracial | -.07 | .05 | -.02 | -1.29 | .20 |
| Race/ethnicity other than what was specified | -.41 | .14 | -.05 | -2.88 | .004** |
| Parental educational attainment | .04 | .01 | .08 | 4.25 | .000*** |

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

The second block of the regression model consists of variables pertaining to academic performance and interactions with faculty members: college GPA, research with a faculty member, and mentoring by a faculty member. This block yielded statistically significant results ($R^2=.06$, $F(12, 2,962)=16.07$, $p<.001$) with a small effect size ($f^2 = .06$) (Cohen, 1992) (table 20). After controlling for the demographic variables, these variables accounted for approximately 4% ($\Delta R^2=.044$) of the variance in scores on the sense of belonging scale for students without psychological conditions; the effect size for this model was small ($f^2 = .05$) (Cohen, 1992). Two of the variables were statistically significant, positive predictors of sense of belonging: GPA and mentoring by a faculty member. In contrast, participating in research with faculty member did not have a significant impact on sense of belonging. To summarize, increases in reported sense of belonging were positively predicted by increases in students' self-reported GPA and greater frequency of mentoring by a faculty member.

The third and final regression block in this model consists of variables related to peer interactions and student involvement. After controlling for the other variables in the model, when analyzed together, mentoring by a peer, engaging in sociocultural discussions, being an involved member in college organizations, being an involved member in an off-campus community organization, and living on-campus produced statistically significant results pertaining to their impact on sense of belonging.

Table 20

*Regression Analysis: Blocks 1 and 2
Students without Psychological Conditions*

| | β | Standard Error | Beta | t | p |
|--|---------|----------------|------|-------|---------|
| Block 1 | | | | | |
| Gender (female) | .002 | .03 | .001 | .08 | .94 |
| Race/ethnicity | | | | | |
| Middle Eastern | .14 | .20 | .01 | .72 | .47 |
| African American/Black | -.05 | .07 | -.01 | -.76 | .45 |
| American Indian/Alaska Native | -.28 | .20 | -.03 | -1.41 | .16 |
| Asian American/Asian | -.17 | .06 | -.05 | -2.85 | .004** |
| Latino/Hispanic | -.04 | .07 | -.01 | -.58 | .56 |
| Multiracial | -.06 | .05 | -.02 | -1.18 | .24 |
| Race/ethnicity other than what was specified | -.35 | .14 | -.05 | -2.52 | .01 |
| Parental educational attainment | .03 | .01 | .07 | 3.63 | .000*** |
| Block 2 | | | | | |
| College GPA | .05 | .02 | .06 | 3.26 | .001*** |
| Research with a faculty member | -.03 | .04 | -.02 | -.83 | .41 |
| Mentoring by a faculty member | .13 | .01 | .20 | 10.86 | .000*** |

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

This block accounts for approximately 6% ($\Delta R^2 = .064$) of the total variance in scores on the sense of belonging scale for students without psychological conditions (table 21). As was the case with the previous blocks in the model, the effect size was very small ($f^2 = .06$) (Cohen, 1992) and only certain variables were statistically significant and contributed to the variance accounted for. Three of the variables produced statistically significant results: mentoring by a peer, sociocultural discussions, and being an involved member in college organizations. However, living on-campus and being an involved member in an off-campus community organization did not impact students' reported scores on the sense of belonging scale.

Table 21

*Regression Analysis: Blocks 1, 2, and 3
Students without Psychological Conditions*

| | β | Standard Error | Beta | t | p |
|---|---------|----------------|------|-------|---------|
| Block 1 | | | | | |
| Gender (female) | -.03 | .03 | -.02 | -.93 | .35 |
| Race/ethnicity | | | | | |
| Middle Eastern | .18 | .19 | .02 | .96 | .34 |
| African American/Black | -.10 | .06 | -.03 | -1.51 | .13 |
| American Indian/Alaska Native | -.23 | .19 | -.02 | -1.18 | .24 |
| Asian American/Asian | -.21 | .06 | -.06 | -3.61 | .000*** |
| Latino/Hispanic | -.03 | .07 | -.01 | -.41 | .68 |
| Multiracial | -.07 | .05 | -.03 | -1.41 | .16 |
| Race/ethnicity other than what was specified | -.32 | .14 | -.04 | -2.32 | .02 |
| Parental educational attainment | .01 | .01 | .02 | 1.18 | .24 |
| Block 2 | | | | | |
| College GPA | .04 | .02 | .05 | 2.60 | .01** |
| Research with a faculty member | -.06 | .04 | -.03 | -1.61 | .12 |
| Mentoring by a faculty member | .08 | .01 | .11 | 5.97 | .000*** |
| Block 3 | | | | | |
| Mentoring by a peer | .08 | .01 | .13 | 6.7 | .000*** |
| Sociocultural discussions | .08 | .02 | .08 | 4.48 | .000*** |
| Involved member in college organizations | .10 | .01 | .18 | 9.19 | .000*** |
| Involved member in an off-campus community organization | .01 | .01 | .02 | 1.15 | .25 |
| Living (On-Campus) | .003 | .03 | .002 | .11 | .91 |

* $p < .05$, ** $p \leq .01$, *** $p \leq .001$

To summarize, the overall model was statistically significant. After controlling for the student characteristics and input variables in block 1, the variables comprising block 2 (academic performance and faculty interactions) were statistically significant and accounted for 4.4% of the variance in scores on sense of belonging. After controlling for the variables in blocks 1 and 2, block 3 (peer interactions and student involvement) accounts for 6.4% of the variance in the model. In the final model, the following environmental variables were statistically significant, positive predictors of sense of

belonging for students without psychological conditions: college GPA, mentoring by a faculty member, mentoring by a peer, sociocultural discussions, and being an involved member in college organizations.

Comparing Regression Results

A comparison of the regression analysis conducted on the sample of students with psychological conditions and the comparative sample yielded very similar results (table 22). In each instance, both models were statistically significant and accounted for a similar amount of variance in scores on the sense of belonging scale: students with psychological conditions: ($R^2 = .12$, $F(17, 2,581) = 20.83$, $p < .001$); students without psychological conditions: ($R^2 = .125$, $F(17, 2,957) = 24.88$, $p < .001$). However, the models vary based on which variables were statistically significant predictors for sense of belonging for each sample (table 23).

Table 22

Comparison Regression Summary Table

| | Students with Psychological Conditions | | | | Students without Psychological Conditions | | | |
|--|--|-----------------|----------|----------|---|-----------------|----------|----------|
| | R ² | ΔR ² | F | F Change | R ² | ΔR ² | F | F Change |
| Block 1: Demographic Inputs Gender, Race/ethnicity, Parental educational attainment | .01 | | 4.01*** | | .02 | | 5.88*** | |
| Block 2: Academic and Faculty Interactions College GPA, Research with a faculty member, Mentoring by a faculty member | .06 | .05 | 14.49*** | 45.30*** | .06 | .04 | 16.07*** | 45.86*** |
| Block 3: Peer Interactions and Student Involvement Mentoring by a peer, Sociocultural discussions, Involved member of college organizations, Involved member of off-campus community organizations, Living on-campus | .12 | .06 | 20.83*** | 33.83*** | .13 | .06 | 24.88*** | 43.25*** |

p < .001

Table 23

Regression Results for College Environments

| | Students with Psychological Conditions | | | | Students without Psychological Conditions | | | |
|---|--|----------------|-------|---------|---|----------------|------|---------|
| | β | Standard Error | Beta | p | β | Standard Error | Beta | p |
| <i>Academic and Faculty Interactions</i> | | | | | | | | |
| College GPA | .02 | .02 | .02 | .29 | .04 | .02 | .05 | .01** |
| Research with a faculty member | .04 | .05 | .02 | .44 | -.06 | .04 | -.03 | .11 |
| Mentoring by a faculty member | .11 | .02 | .13 | .000*** | .08 | .01 | .11 | .000*** |
| <i>Peer Interactions and Student Involvement</i> | | | | | | | | |
| Mentoring by a peer | .08 | .02 | .11 | .000*** | .08 | .01 | .13 | .000*** |
| Sociocultural discussions | .08 | .02 | .07 | .001*** | .08 | .02 | .08 | .000*** |
| Involved member in college organizations | .12 | .01 | .17 | .000*** | .10 | .01 | .18 | .000*** |
| Involved member in an off-campus community organization | -.001 | .02 | -.001 | .96 | .01 | .01 | .02 | .25 |
| Living (on-campus) | .003 | .04 | .002 | .93 | .003 | .03 | .002 | .91 |

** $p = .01$ *** $p \leq .001$

For students with psychological conditions, the following college environment variables were statistically significant predictors of sense of belonging: mentoring by a faculty member, mentoring by a peer, sociocultural discussions, and being an involved member in college organizations. The same variables were statistically significant for students without psychological conditions. Additionally, academic performance as measured by college GPA, was statistically significant for students without psychological conditions, but not for students with psychological conditions.

Comparing the Predictors of Sense of Belonging

Equality of Beta Coefficients

In order to determine if the variables that predict sense of belonging for students who self-reported a psychological condition differed from the variables that predict sense of belonging for students who did not, the equality of the beta coefficients was tested. T-tests were utilized to determine if the college environment variables that were significant for at least one of the samples (students with psychological conditions and those without) were statistically different from one another. The t-tests indicated that although college GPA, mentoring by a faculty member, mentoring by a peer, sociocultural discussions, and being an involved member in college organizations were statistically significant in the regression analyses, these predictors were not statistically different from one another (table 24).

Table 24

Equality of Beta Coefficient Testing

| | t value | p value | df |
|--|----------------|----------------|-----------|
| College GPA | -.88 | .38 | 5575 |
| Mentoring by a faculty member | 1.36 | .17 | 5575 |
| Mentoring by a peer | .35 | .73 | 5575 |
| Sociocultural discussions | -.03 | .98 | 5575 |
| Involved member in college organizations | 1.18 | .24 | 5575 |

Chapter 5: Discussion

Summary of Study

This study had two purposes: to provide a portrait of who students with psychological conditions are and to determine what collegiate experiences and environments predict sense of belonging for students with psychological conditions.

The following research questions guided this study:

1. What does the descriptive profile of students with psychological conditions depict based upon gender, year in school, institution size and selectivity, academic performance, and student involvement compared to students who do not report having a psychological condition?
2. After controlling for students' input and demographic characteristics, what environmental variables predict sense of belonging for students with psychological conditions?
3. Do the predictors for sense of belonging differ between students with psychological conditions and those who do not report having a psychological condition?

Summary of Results

Research Question 1

In order to develop the descriptive portrait of students with a self-reported psychological condition, data was analyzed using frequencies, means, and standard deviations.

To better understand how, and in what ways, the descriptive profile differed between students with psychological conditions and students who did not self-report having a

psychological condition, Chi-square tests of independence and independent group t-tests were conducted.

According to the descriptive analysis, the sample of students who self-reported having a psychological condition was mostly females, of junior and senior class standing. The greatest number of students reported attending mid-sized, very selective colleges and universities. The mean college GPA for students in the sample was between 3.0-3.49; however the largest proportion of students self-reported their GPA as 3.5-4.0. Students who self-reported a psychological condition reported significantly lower perceptions of sense of belonging compared to those who did not self-report a psychological condition. To better understand the college experience of students with psychological conditions, co-curricular involvement was explored.

Students were asked to indicate how often they had been an involved member in college organizations, been an involved member of an off-campus community organization, and the types of activities and organizations they were involved in while in college. The greatest number of students with psychological conditions characterized the frequency of their involvement in college organizations as *sometimes*, and involvement in an off-campus community organization as *never*. Related to their involvement in college organizations, there were a number of activities and organizations that students with psychological conditions reported being involved in.

Academic/departmental/professional, service, arts/theater/music, and intramural sports were the activities that the largest number of students with psychological conditions reported involvement in. Comparatively, the fewest number of students reported

involvement in military organizations, multicultural fraternities and sororities, resident assistant, and varsity/intercollegiate sports.

The Chi-square and t-test analyses highlighted the differences between students with psychological conditions compared to those who did not report having a psychological condition. The sample of students with psychological conditions included more females and students who were in their senior year than was expected; however, there were fewer than expected freshmen. A greater than expected proportion of students with psychological conditions reported their GPA as 2.0-2.49, and the mean GPA for the sample was a 4.03 (equivalent to 3.0-3.49), on a scale of 1-5. The mean GPA for students with psychological conditions was lower than that of students who did not report having a psychological condition, but the difference was negligible due to the very small effect size.

Greater than expected numbers of students with psychological conditions participated in the following types activities: art, media, advocacy, political, and social/special interest. Alternatively, fewer than expected students with psychological conditions participated in the following types of activities: military, sports (varsity, club, and intramural), and recreation. Students with psychological conditions reported their involvement as an involved member in both on and off-campus organizations as lower than that of their peers without psychological conditions, but again, these results had a very small effect size.

Research Question 2

Modeled after Astin's (1993) I-E-O model, a hierarchical multiple regression analysis was conducted to identify which college environments predict sense of

belonging for students with self-reported psychological conditions. Lacking any previously existing higher education literature directly connecting the construct of sense of belonging to psychological condition, variables were selected for the regression analysis based on the existing literature pertaining to sense of belonging for other identity groups and populations (i.e. race/ethnicity, first-year students). After controlling for the demographic characteristics of gender, race/ethnicity, the following variables were significant, positive predictors of sense of belonging: mentoring by a faculty member, mentoring by a peer, engaging in sociocultural discussions with peers, and being an involved member in college organizations. Comparatively, college GPA, research with a faculty member, being an involved member of an off-campus community organization, and living on-campus were not found to be significant predictors of sense of belonging for students with psychological conditions, within the context of all the variables in this model.

Research Question 3

Once the predictors of sense of belonging for students with psychological conditions were identified, a comparison was made between predictors of sense of belonging for students with psychological conditions, and the predictors for those who did not report having a psychological condition. The same hierarchical multiple regression was conducted using the comparative sample. After controlling for demographic characteristics, college GPA, mentoring by a faculty member, mentoring by a peer, engaging in sociocultural discussions with peers, and being an involved member in college organizations were statistically significant, positive predictors of sense of belonging for students without psychological conditions. Engaging in research with a

faculty member, being an involved member of an off-campus community organization, and living on-campus were not significant predictors of sense of belonging for students without psychological conditions.

The regression model used in this study accounted for a similar amount of variance in scores on the sense of belonging scale for students who self-reported a psychological condition and those who did not (12% and 13% respectively). A comparison of the results of the two separate regression models indicated that the following variables were predictors of sense of belonging for students with and without psychological conditions: mentoring by a faculty member, mentoring by a peer, engaging in sociocultural discussions with peers, and being an involved member in college organizations. Additionally, GPA was a significant predictor of sense of belonging for students without psychological conditions, but not for those with a psychological condition. Finally, research with a faculty member, being an involved member of an off-campus organization, and living on-campus were not significant predictors for either sample. These significant beta coefficients were tested for equality, and the full regression model was tested for moderating effects. The equality of beta coefficient testing revealed that there were no significant differences between the beta coefficients that predicted sense of belonging for students with psychological conditions and students without psychological conditions.

Discussion

What follows is a discussion of the results of this study. Given the large amount of statistical power resulting from the sample size, many significant statistics were found. Therefore, the discussion and implications for practice are presented in such a way as to

highlight the findings that were statistically significant and had somewhat larger effect sizes, or those that can otherwise be used to make reasonable recommendations for practice. Caution must be taken not to over-generalize the findings, but to use these findings as a point of entry into a larger dialogue about college student mental health.

Due to the impact of mental health on cognitive processes such as critical thinking, comprehension, and the application of learning strategies (ACHA, 2010; Brackney & Karabenick, 1995; Furr et al., 2001), two hypotheses were developed. First, it was hypothesized that the academic performance of students with psychological conditions would be lower compared to students who did not report a psychological condition. Second, as class standing increased, the proportion of students with psychological conditions would decrease due to higher departure rates in the earlier years of college. Finally, it was hypothesized that students with psychological conditions would be less involved in co-curricular activities resulting from the impact of mental health conditions on intra- and inter personal skills (Panov & Bovina, 2006; Choenarom et al., 2005; Kitzrow, 2009).

Descriptive Analysis

Hypothesis 1

The very small effect size of the t-test suggests that there is little difference between the mean GPA's of students with psychological conditions compared to students who did not report a psychological condition. Of greater interest is the distribution of students with psychological conditions across each GPA category. When the proportion of students across the GPA categories was evaluated, it was determined that significantly more students who self-reported a psychological condition reported their GPA as

between 2.0-2.49. These findings are consistent with existing literature that suggests that academic performance is negatively impacted by mental health conditions (ACHA, 2010; Brackney & Karabenick, 1995; Furr et al., 2001). A greater proportion of students reporting their GPA's as 2.0-2.49 might suggest that academic challenges had set in and student departure rates would be on the rise; however, the distribution of students across the class standing levels revealed a surprising pattern.

Hypothesis 2

Despite research that suggests that there is an increased likelihood of attrition for students with psychological conditions resulting from academic challenges (Kitzrow, 2009), this did not appear to be the case for students within this study. As a matter of fact, there were significantly fewer freshmen and significantly more seniors in the sample. There are a number of possible explanations for this finding. Researchers have determined that greater numbers of students report experiencing symptoms of psychological or mental health concerns compared to the number of students who report being formally diagnosed or seeking treatment for a condition (ACHA, 2010). As a result, students may not have reported their condition lacking a formal diagnosis. Related to the diagnosis and treatment of mental health conditions, the on-set of symptoms could have influenced these findings.

Positive perceptions of sense of belonging are related to psychological and emotional outcomes such as increased self-worth, decreased feelings of anxiety, depression, withdrawing from others, and somatic complaints (Lee & Robbins, 2000; Pittman & Richmond, 2007; Pittman & Richmond, 2008). Efforts to better understand how first-year students (i.e. freshmen) build sense of belonging are well documented in

the literature (Freeman et al., 2007; Hausmann et al., 2009; Hoffman et al., 2002; Johnson et al., 2007; Meeuwisse et al., 2010; Pittman & Richmond, 2007; Pittman & Richmond, 2008). This understanding has led to numerous implications for practice that have been used to inform programmatic interventions and administrative decision-making. Given the focus on programs and interventions aimed at assisting first-year students as they integrate into the campus community, this finding could suggest that students in this study had developed a sense of belonging early on, which off-set the display of symptoms associated with psychological conditions. As a result, it is possible that symptoms did not appear until later in their education, when efforts to assist students in developing their sense of belonging decrease, as it is presumed that students are well integrated and likely to persist. Similarly, the higher proportion of students within their senior year who reported having a psychological condition could be the direct influence of students having developed a sense of belonging early on in their education and that sense of belonging, and the relationships and connections to others in the campus community, assisted students in navigating their psychological condition to the end result of persistence.

Two additional explanations may account for the distribution of students across class standing, both of which take into consideration college student development and the transitional challenges associated with the senior year of college. As students develop and mature throughout college, they develop greater levels of self-awareness. The increase in self-awareness can help them identify symptoms of psychological conditions and articulate their experiences. As a result, students may be better able, and more likely, to report psychological conditions later in their college years. Secondly, an increased

number of seniors may have reported psychological conditions due to the unique stressors and life challenges that occur during this timeframe. As seniors, students are contemplating their transition from college into *the real world*. Students are applying for graduate school or full-time jobs, deciding whether to move back home or out on their own, all while balancing the final stages of collegiate coursework. As students navigate this transitional stage, they may experience greater levels of stress which can result in increased levels of depression or anxiety, and greater reporting of psychological conditions compared to other stages in their academic career.

Hypothesis 3

Students who self-reported a psychological condition reported significantly greater involvement in activities that were oriented towards the arts, media, advocacy, political, and social/special interests. In comparison, they were less involved in clubs and activities that were oriented towards the military, sports (intercollegiate, club, and intramural), and recreation. The stereotypes about mental illness held by society, and perpetuated by the media, establish an in-group/out-group mentality (Baumann, 2007; Byrne, 2000) resulting in individuals with mental illness being classified as *other*, or strange (Baumann, 2007). Societal values and norms internalized at the campus level could influence which activities students with psychological conditions choose to participate in. While there is no way to determine if students with psychological conditions are choosing to be involved in particular activities or if the activity is more or less “picking” them due to the nature and culture of the organizations, a general pattern has emerged in the student involvement of students with psychological conditions.

Students with psychological conditions appear to be more involved in activities in which there is a great deal of flexibility and ambiguity in what would be the “dominant culture” of the group. For instance, activities such as the arts and media thrive on creativity and pushing the boundaries of what is accepted in an effort to forge new material. Similarly, involvement in political based organizations and advocacy groups is predicated on breaking down existing socio-political structures to create social change and equity for disenfranchised groups. Therefore, it stands to reason that students with psychological conditions would be found in such groups because the normative culture is less structured and more fluid, which facilitates transition and integration into these groups; in these organizations, students with psychological conditions are members of the in-group.

Comparatively, students with psychological conditions were less involved in student groups that had explicitly expressed cultures and associated behaviors and rituals. Such activities included military groups, multicultural fraternities and sororities, and sports. While the purpose of each of these organizations is distinct from one another, inherent in each of them are rituals (i.e. military ranking, rituals and ceremonies, athletics practices and games), a clearly defined set of values, norms, and desired behaviors (i.e. attending practices, and spending time with other members of the organization). Many of these organizations are sub-groups of larger social and political institutions (i.e. the military). In order for students to fit in with these organizations, they need to be willing to abandon, to a degree, their own identity, culture, values, and norms and assume those of the group. Integration proves especially difficult for students with psychological conditions when the dominant culture of society is one that stigmatizes individuals with

mental health issues. In the case of student involvement, the combination of the dominant norms of these student groups and the societal values associated with mental health issues would make it difficult for students with psychological conditions to assimilate into the cultures and activities of these particular groups. This hypothesis is consistent with Holland's (1996) typology of persons and environments. Holland suggests that the fit between the individual and the environment plays a crucial role in individuals' interpersonal relationships and personal achievement in the responsibilities and tasks they take on in the environment (Holland, 1996).

Predictors of Sense of Belonging

Students with Psychological Conditions

Consistent with existing literature, faculty mentoring, peer mentoring, sociocultural discussions, and being an involved member in college organizations were all positive predictors of sense of belonging for students who self-reported a psychological condition. In multiple studies, students who reported having positive interactions with faculty members, which led to the belief that faculty members cared for them and their development, reported a stronger sense of belonging than those who did not (Freeman et al., 2007; Hoffman et al., 2002; Johnson et al., 2007; Maestas et al., 2007). Similarly, positive informal relationships with peers in which students perceived social support and acceptance from others greatly influenced their sense of belonging within their campus community (Freeman et al., 2007; Hagerty et al., 1996; Hoffman et al., 2002; Maestas et al., 2007), as did interactions with diverse peers and individuals different from one's self (Johnson et al., 2007; Strayhorn, 2008). Informed by these studies and consistent with their findings, it is theorized that the reported positive faculty

and peer interactions lead to students with psychological conditions having increased perceptions of sense of belonging. However, not all college environments proved to be significant predictors for sense of belonging.

Research with a faculty member, college GPA, being an involved member of an off-campus community organization, and living on-campus were not predictive of sense of belonging for students with psychological conditions within the context of the other college environment variables within the model. That research with a faculty member was not significant could suggest that the nature of the interactions when conducting research do not offer the kind of personal attention and context for faculty to demonstrate their concern for the students' development. Another theory is that research with a faculty member was not significant when accounted for in the model with mentoring by a faculty member, because the mentoring variable accounted for all of the variance related to faculty interactions.

The connection between living on-campus and sense of belonging is mixed. A number of scholars determined that living on-campus is related to sense of belonging (Maestas et al., 2007; Johnson et al., 2007); whereas others did not find a connection (Strayhorn, 2008). However, to better understand the impact that living on-campus has on sense of belonging, one must consider the nature and context of the on-campus living environment. For instance, students' perceptions of the on-campus living environment as socially and academically supportive plays a role in the contribution of the experience to their sense of belonging (Johnson et al., 2007). In this study, students' self-reports of living-on campus only indicated where they lived, not the perceived climate of, or

satisfaction with, the living environment, which could account for the insignificant finding of this variable.

It was surprising that GPA was not a significant predictor of sense of belonging for students with psychological conditions given the influence that mental health has on academic outcomes (ACHA, 2010; Brackney & Karabenick, 1995; Furr, et al., 2001). Furthermore, Tinto's theory of student departure is predicated on students' abilities to integrate into the academic and social environments; academic performance as measured by GPA could be considered a representation of the academic system. However, there is a possibility that for students with psychological conditions, college GPA and academic performance is not as salient as other college experiences when developing a sense of belonging. For instance, students that are more oriented towards developing meaningful relationships with their peers might experience not getting into the fraternity or sorority of their choice as having a stronger impact on sense of belonging compared to their academic performance.

Involvement in college organizations was a positive, significant predictor for sense of belonging, but involvement in an off-campus community organization was not. It is possible that involvement in off-campus community organizations was not a significant predictor because the majority of students with psychological conditions reported their involvement in off-campus community organizations as never (63.6%), and the mean score as .81 (range of 0-4, never to much of the time). If students are not heavily involved in the activity there is no way for it to be predictive of the outcome variable. While reduced variance in the scores of this variable may have resulted in an insignificant finding, it is also possible that students are choosing not to get involved in

off-campus community organizations because involvement does not contribute to their sense of belonging; rather, students are choosing to allocate their time to being involved in college organizations because this matters when it comes to developing a sense of belonging.

Comparing the Predictors Across Models

When the same regression model was used to determine if the predictors of sense of belonging for students with psychological conditions differed from those for students without psychological conditions, all of the same variables were significant. One additional variable, GPA, was significant for students without psychological conditions, but not for students with psychological conditions. The model accounted for a similar amount of variance in scores on sense of belonging for students who self-reported a psychological condition and those who did not. This suggested that the model, and the variables within, were similarly effective in predicting sense of belonging for both samples. Moreover, there was no significant difference between the value of the predictors for students who self-reported a psychological condition and those who did not. The conclusion drawn is that there are no differences between the predictors of sense of belonging between students with and those without psychological conditions. It is encouraging to learn that the variables that predict sense of belonging for students with and without psychological conditions do not differ given the important outcomes associated with sense of belonging for college students. However, it must be noted that all of the results and findings are for those students who *have* persisted. With this in mind, it can be presumed that students in this sample adequately integrated into both the academic and social systems of the collegiate environment (as discussed by Tinto (1993))

and therefore have a sense of belonging that is impacting the academic and psychosocial outcomes associated with the college experience.

Implications for Practice

This study determined there is no significant difference between the predictors of sense of belonging for students who self-reported having a psychological condition and those who did not. Despite this relative lack of difference, clear patterns of academic performance and student involvement emerged. In particular, a significant number of students reported weaker academic performance; and they reported involvement in specific types of student organizations. Students who self-reported a psychological condition appeared to be drawn to student organizations and groups for which the normative culture is less restrictive, and as a result, is more likely accepting of students with mental health conditions. It is possible that for students who self-reported a psychological condition, involvement in such student groups offsets the significantly lower levels of sense of belonging they reported in this study. In acknowledging the differences in academic performance, student involvement, and sense of belonging for students who self-reported a psychological condition and those who did not, a clear need exists for addressing the socially constructed perceptions of the mentally ill and the associated consequences for students with psychological conditions.

Although mental health conditions are prevalent among the general society (NIMH, n.d., *a*), and are becoming more commonplace in colleges and universities (Bertram, 2010; Hunt & Eisenberg, 2010), individuals with mental health issues are treated with minority status as a result of the negative stereotypes about mental illness that establish individuals with mental health issues as *other* (Baumann, 2007). In an

effort to assist students with psychological conditions in integrating into the academic and social systems that comprise the university setting, implications for practice address the need for raising awareness on the topic of college student mental health, and programmatic and administrative interventions that can work to deconstruct the stigma and social distancing that so greatly harm students with psychological conditions.

Raising Awareness

Consistent with existing literature on sense of belonging, this study found that peer interactions (i.e. peer mentoring, sociocultural discussions) were positive predictors of sense of belonging for students with psychological conditions. As such, student affairs educators can play a role shaping the narrative about college student mental health among the broader student population. In partnership with campus mental health professionals, student affairs educators can take part in designing awareness campaigns aimed at increasing the campus community's general knowledge and understanding of college student mental health issues. Awareness campaigns can include a series of posters, brochures, and flyers hung in prominent areas on campus, or a walk-a-thon or march in honor of a particular mental health issue such as suicide or depression. Student affairs educators can also develop diversity programs that address mental health issues. Diversity programs can occur in residence halls, with student groups and organizations, or within a formal classroom setting in the form of an intergroup dialogue course. Using the Safe Spaces Project (Safe Spaces, 2011) as a model, similar programs can be established to provide an advocacy and support network for students with psychological conditions. Raising awareness about college student mental health through formal channels can encourage students to engage in dialogues about issues of mental health in

informal settings, much in the way that sociocultural discussion tend to take place outside of the classroom.

In addition to addressing college student mental health at the peer-to-peer level, it is necessary to address it at the staff and faculty levels as well. Students with psychological conditions were found to be more involved in certain types of co-curricular activities than others. With higher than expected numbers of students with psychological conditions participating in activities such as the arts, media, and advocacy, student affairs educators and faculty who advise these groups may find themselves needing to address the symptoms and challenges that college students with psychological conditions face. It is highly recommended that faculty and staff members receive training and professional development to better understand the experiences and needs of students with psychological conditions. Training opportunities might include developing basic helping skills, conflict resolution, and knowing the campus resources and policies that apply to students with psychological conditions. It is recommended that student affairs educators look to the mental health professionals on their campus for guidance as they can speak to the trends and climate of their particular student population.

Academic Support

The challenges associated with cognitive processes such as critical thinking and resource management that affect the academic performance of students with psychological conditions have been documented (ACHA, 2010; Brackney & Karabenick, 1995; Furr et al., 2001). This study found that while there were no significant differences in the mean GPA's of students with and without psychological conditions, students with psychological conditions were found in greater proportion in the lower GPA range (2.0-

2.49). As such, faculty and student affairs educators can play an important role in assisting students with psychological conditions towards academic success. Specific to the classroom experience, faculty can make a concerted effort to provide students with course materials that are easily accessible, organized, and easily understood. For instance, if using a course website, organize electronic resources in a way that makes them easy to find and download. Syllabi and course materials should be current and include important classroom policies or procedures that students need to be aware of. If the course includes a large paper that is complex and requires a high level of organization and resource management, such as a research paper, faculty might consider having portions of the paper due throughout the semester. For instance, students could be required to submit an annotated bibliography, followed by an outline, and then a rough draft prior to submitting the final paper. Including these checkpoints along the way gives students guidance on how they should approach the task and allocate their time. While all students will benefit from such an approach, this will be especially helpful for students with psychological conditions as they may have more difficulty navigating tasks associated with complex assignments.

In addition to the delivery of course content and materials, interactions between faculty and students are of great importance. Positive interactions with faculty build sense of belonging for students. As such, faculty should give thought to how they develop relationships with students and what their preferred level of interaction is. Some faculty offer drop-in office hours and are easily accessible via email; others prefer to schedule appointments with students and are best reached by phone. In either instance, students with psychological conditions may be less likely to approach a faculty member or ask for

help, therefore faculty might consider being explicit with students about how to best utilize them as a resource, and give some consideration to the ways in which they reach out to students and offer assistance.

The academic skills that students need to succeed can also be supplemented outside of the classroom. While student affairs educators frequently work with students through student groups and co-curricular activities, intentional programming within these co-curricular environments can support the academic mission of the institution and the academic success of students with psychological conditions. For instance, including academic support services or structures in the residence halls allows students to access resources more easily. This can be accomplished by designating a study space within the residence hall that allows students to complete coursework outside of their rooms. Another approach can include inviting colleagues from other functional areas into the residence halls to provide programming related to study skills or time management.

Outside of the residence halls, student affairs educators have the opportunity to support the academic mission when advising their student groups. Many times students have trouble balancing their coursework and co-curricular responsibilities. Advisors can provide workshops and programming aimed at the unique academic needs of their student group. For instance, students involved in art or theater productions will likely be busy in the evenings and during the weekends. Advisors can provide resources for students to be able to find productive, meaningful methods for completing coursework when their schedules allows, while allowing them to be engaged with the student organization. In all instances, the goal is to make resources, staff members, and programming available that would directly benefit the needs of students with psychological conditions in the spaces

and environments the students themselves are commonly engaged in. While the students, faculty, and staff all play a crucial role in students with psychological conditions developing a sense of belonging, institutional policies and practices do as well.

Policy and Administration

This study demonstrated that there were few differences in the variables that predict sense of belonging for students who self-reported a psychological condition compared to those who did not. This could mean that students with psychological conditions experience the college environment in similar ways to their peers who do not self-report a psychological condition. Therefore, greater consideration should be given to the policies and procedures related to working with students who have psychological conditions. University administrators, and individuals involved in the behavior evaluation and threat assessment of students of concern, should be careful not to overstate or generalize characteristics of students with psychological conditions to the greater campus community. Drawing too many distinctions between students with psychological conditions and those without can have detrimental effects on the entire campus community. The messages put forth by the administration influence the climate and culture of the campus towards individuals with mental health issues. The resulting climate can be one of inclusivity and assistance, or one of stigmatization and social distancing that leaves individuals with psychological conditions on the outside looking in.

Individual Reflection

All of the aforementioned implications for practice are predicated on the assumption that campus educators believe it is important to create college environments that are inclusive of students with mental health concerns. In order for this to be the case,

college educators will need to reflect on their own experiences with, and perceptions of, mental illness to be ready to approach the topic with students and colleagues. Increased self-awareness allows educators to address their own biases and misconceptions, to better understand the needs and experiences of students with psychological conditions, and to encourage others to do the same.

Limitations

Research Design and Data Analysis

The cross-sectional, self-report nature of the data collected in the MSL study, and used in the current dissertation study, is itself a limitation. Cross-sectional studies have a number of advantages which include the facilitation of a one-time data collection process and the ability to collect data from a large sample without the concern of attrition that is generally associated with longitudinal studies. However, cross-sectional data is a snapshot in time which does not account for changes or development that have taken place as a result of experiences that occurred prior to, or after, data collection. In the case of the MSL, data was collected during the early part of the spring semester in 2009. The data collected is reflective of students' perceptions and interpretations of their own psychological condition as informed by the events of the spring semester. This could include the demands of the current course load, as well as the cumulative effect of the fall semester's outcomes. For instance, students who are on academic probation during the spring as a result of their fall grades might be more likely to self-report a psychological condition because their anxiety and worry about succeeding could be higher. Comparatively, students did not do well academically in the fall, but who are having a markedly easier time in their courses in the spring, might not report experiences of

anxiety or depression they had within the last six months, because their frame of mind has changed. Nonetheless, cross-sectional survey research does provide important information about students and their experiences, but results must be contextualized to the point in time during which students took the survey.

Related to the statistical methods used in this study, the use of descriptive and hierarchical multiple regression analyses allowed for an analysis of the data at the student level. The purpose of this study was to understand sense of belonging for students with psychological conditions, and as such, the chosen methods were appropriate. However, in electing to analyze the data at the student level, institutional effects that could have been analyzed using multi-level modeling were not considered.

Independent Variables

A number of studies included measures pertaining to faculty characteristics and interactions such as faculty being committed to students' development (Astin, 1993; Freeman et al., 2007; Maestas et al., 2007) and the extent to which faculty foster a classroom climate conducive to learning and student participation (Freeman et al., 2007). Other studies included more general measures such as course related interaction with faculty members (Johnson et al., 2007; Meeuwisse et al., 2010) and interactions with faculty outside of the classroom (Meeuwisse et al., 2010). The results of the aforementioned studies suggest that such faculty characteristics and interactions with students play an important role in students' sense of belonging. When selecting the variables for the current study, there were fewer faculty characteristics and measures to choose from in the MSL. This is not a limitation of the MSL study itself, as the purpose of the MSL is to better understand how the collegiate experience nurtures students'

capacity for socially responsible leadership; but in using this data set, fewer measures related to faculty were available.

Throughout the MSL survey instrument, participants were asked to report how often they had participated in various activities and practices using Likert response scales. Critiques of Likert response scales suggest that what one student reports as *much of the time* might qualify as *sometimes* to another student, making it difficult to know the exact quantity of involvement or engagement. Although this is a valid concern, the purpose of this study was to measure students' perceptions about the extent to which they report having a sense of belonging on campus and their perceptions of their involvement and experiences that contributed to their sense of belonging. Thus, Likert scale response items were appropriate.

Sample

Within the sample of students who self-reported having a psychological condition, it is important to consider two important points. First, the nature of self-reported data is such that respondents can choose to disclose, or not to disclose specific information. This becomes a concern when selecting a sample based upon self-reported group membership. In the current study, students were selected into the sample based on their self-reports of having a psychological condition lasting six months or more. However, students may have chosen *not* to disclose that information which resulted in them being excluded from the sample of students who self-reported a psychological condition and subsequently remained in the comparison sample. The comparison sample is assumed to be absent of students with psychological conditions, but this would only be the case if the student self-reported such information. With this in mind, when analyzing

the results and drawing conclusions from the findings it is important to recognize that the comparison sample is not guaranteed to consist entirely of students who do not have a psychological condition. Second, females are overrepresented compared to their male counterparts (79.8% and 20.2% respectively). This is consistent with the full MSL sample in which females were also overrepresented (63.9% and 36.1% respectively). While this may make it difficult to generalize findings to all students, the numbers are consistent with the reported findings of the ACHA-NCHA II (ACHA, 2010) in which a higher percentage of females reported experiencing mental health symptoms or issues *anytime within the last 12 months* on the following categories: hopelessness, exhaustion, feeling overwhelmed or very lonely, very sad, depression, overwhelming anxiety or anger, seriously considering suicide, and intentional self-harm (ACHA, 2010). Furthermore, data from the National Center for Education Statistics (NCES) (NCES, 2011) indicates that since 1980, the percentage of women enrolled in degree-granting institutions has increased. Specifically, when reviewing the data in ten-year increments, the NCES determined that in 1980, women comprised 51.4% of the total fall enrollment; in 1990 they comprised 54.5%; in 2000 56.1%; in 2010, women accounted for 57% of the total enrollment in degree-granting institutions. Thus, the over-representation of women in the sample is not unexpected, but certainly should be taken into account when analyzing the data and findings. Lastly, pertaining to this sample, it must be noted that the results of this study are reflective only of the students who self-disclosed their psychological condition and persisted in college. The results do not in any way account for, or can be attributed, to students with psychological conditions who departed from the institution. While this seems to be a fairly obvious point to make, by the sheer fact that

there are students with psychological conditions for whom scores on the belonging climate scale and collegiate experiences were not measured, this study paints a picture only of those students with psychological conditions who developed the coping skills to persist, but does not speak to the experiences of students with psychological conditions who depart from colleges and universities for a variety of reasons each academic semester. The aforementioned limitations should be kept in mind when attempting to generalize the findings to broader populations and when determining implications for practice.

Understanding Students with Psychological Conditions

Potential limitations exist within the sample of students selected for this study. First, it must be noted that the sample of students with psychological conditions consists entirely of students who self-reported having a psychological condition, and this was based entirely on their own perceptions and interpretations of their mental health status. As such, it is important to understand that these self-reports are distinct from a formal diagnosis of a mental health condition. Moreover, it is possible that students who self-reported having a psychological condition, would not be characterize as such using a formal diagnostic tool.

Second, students could indicate more than one condition; as a result, there were students who reported having only a psychological condition, and others who reported a psychological condition and at least one other condition such as a physical illness or learning disability. It was decided at the onset of the study to include only those who reported having a psychological condition in the sample to allow for data analysis and interpretation within the context of only a psychological condition. Although the

preliminary statistical analysis indicated that removing students who reported a psychological condition and at least one other condition did not skew the data, it is important to note that a portion of students with psychological conditions within the MSL sample were not used in this study.

Next, the prompt for psychological conditions asked respondents to indicate if they have a psychological condition, but did not specify which one in particular. As a result, the condition could be a major psychiatric condition such as schizophrenia, or something less severe such as social anxiety. Due to the variety of symptoms, the severity of the condition, and the impact on activities of daily living associated with psychological conditions, students' experiences of college vary. Not knowing the type and severity of the condition makes the results less generalizable. However, the goal of this study is to better understand the needs of students with a variety of psychological conditions, rather than discern them by severity of the condition. Moreover, student affairs educators are not trained as counseling or clinical psychologists, therefore specific information about the psychological or psychiatric condition would not necessarily be of importance in their day-to-day work with students.

Finally, a concern related to the specificity of the psychological condition is that the MSL instrument did not allow respondents to include information about the on-set, diagnosis, and treatment of their condition. On-set and diagnosis of the condition could impact students' collegiate experiences in a variety of ways. If a student experienced on-set and diagnosis of their condition in high school and are already receiving treatment, he or she may experience less difficulty navigating the college setting compared to individuals who experienced on-set of their condition while in college and are still

acclimating to the complexities associated with the condition. Additionally, students' ability to receive treatment and support on their campus could positively or negatively contribute to their sense of belonging. If an institution has a number of treatment and support services on campus that students can easily access, they may be more likely to feel valued and included, compared to campuses that do not provide support or medical services and require students to seek treatment off-campus. The implied message might be one of stigmatization and exclusion.

Directions for Future Research

First, as was noted early on in this study, a general lack of acknowledgment of students with psychological conditions exists within the higher education literature as it pertains to sense of belonging. As such, when developing studies that explore collegiate outcomes for marginalized identities, the inclusion of students with psychological conditions or mental health concerns should be among those studied. As Byrne (2000) noted, the marginalization of those with mental health conditions is similar to the negative stereotypes used by the racial majority used to justify the discrimination of individuals based on race or ethnicity. The continued exclusion of students with psychological conditions from prominent research allows the perpetuation of negative stereotypes and stigmatization that stems from the public's lack of understanding about mental health conditions to continue.

Second, the increasing number of students with mental health conditions attending colleges and universities warrants a better understanding on the part of college educators about how the college experience helps or hinders the success of students with psychological conditions. To that end, research focused on better understanding students

with psychological conditions, grounded in Astin's I-E-O (1993) model of student development is crucial. Student affairs educators are trained to work with students in traditional college environments, but are not trained to work uniquely with students with psychological conditions. While that type of research is frequently left to the field of counseling psychological, student affairs educators need to better understand students with psychological conditions within the context of the general college environment. By approaching research about college student mental health using Astin's I-E-O model, student affairs educators can gain a better understanding of how the collegiate environment impacts students' mental health, and how students' mental health impacts the academic and personal outcomes associated with the college experience.

Lastly, more thought should be given to the methods used to understand the experiences of college students with psychological conditions. This study employed descriptive and hierarchical multiple regression analyses to understand the predictors of sense of belonging for students with psychological conditions. However, multi-level modeling could be used to explore sense of belonging both at the individual and the institutional levels. That procedure would allow for a more complex analysis of institutional level factors that impact sense of belonging, or moderate the variables that predict sense of belonging. For example, in this study GPA was not found to be a significant predictor of sense of belonging for students with psychological conditions. Perhaps if the culture of the institution is one that emphasizes academic performance, as would be the case for an Ivy League school, GPA could be more salient to students as a variable that predicts sense of belonging; multi-level modeling is a method that could be used to further explore this theory.

Moving beyond quantitative analysis, qualitative research methods should also be used to understand the lived experiences of college students with psychological conditions. Quantitative research is useful in providing numeric and statistical data, but to best understand how students with psychological conditions experience the college environment and conceptualize and develop sense of belonging, they need to be asked. The quantitative data from this study suggests that there are not many differences between students who self-reported having a psychological condition to those who did not report a psychological condition. While this is the case based on the Likert-scales and self-reported data available in the MSL instrument, there is greater complexity and more nuances to the college experience for students with psychological conditions that could be captured through qualitative research methods.

Conclusion

This study set out to develop a descriptive profile of students with psychological conditions, to determine the predictors of sense of belonging for these students, and to draw comparisons between the collegiate experiences of students with, and those without, psychological conditions. Literature from the fields of higher education, sociology, psychology, and nursing were used to develop the landscape of literature pertaining to sense of belonging. Literature from counseling psychology, higher education, and national associations were used to develop an understanding of what college student mental health is, and how it has been studied up to this point. Scholarship on stigmatization, social distancing, and Tinto's (1993) theory of student departure served as the theoretical framework that drew the connection between two seemingly disjointed

topics (i.e. sense of belonging and college student mental health) and was the lens through which the results were viewed.

The results indicated that overall, students who self-reported a psychological condition had significantly lower perceptions of sense of belonging compared to those who did not report a psychological condition. While there were statistically significant differences between the mean differences in GPA, involvement in college organizations, and involvement in off-campus community organizations, the small effect size suggests the magnitude of the differences is negligible. The distribution of students across a variety of categorical variables revealed statistically significant results in the following areas: gender, GPA, class standing, and particular types of activities. Greater proportions of females, seniors, and students who reported their GPA as 2.0-2.49 were represented in the sample; fewer proportions of freshmen were included in the sample. Students were more involved in activities oriented towards the arts, media, advocacy, politics, and special interest/social. Fewer students participated in activities that were oriented towards the military, sports (intercollegiate, club, and intramural), and recreation. Sense of belonging for students with self-reported psychological conditions was positively predicted by the following variables in this model: mentoring by a faculty member, mentoring by a peer, sociocultural discussions, and being an involved member in college organizations. These same variables predicted sense of belonging for the comparative sample, with the addition of GPA. The equality of beta coefficient testing indicated that there was no statistical difference between the predictors of sense of belonging for students with psychological conditions and those without. Overall, it was determined that despite the relative lack of difference in the predictors of sense of belonging for students

who self-reported a psychological condition and those who did not, there are indeed unique differences in academic performance, student involvement, and sense of belonging that cannot be overlooked.

A number of limitations were inherent in this study. First, the cross-sectional design and self-report nature of the data accounted for a snapshot in time in which the data reflected students' subjective accounts of their experiences, and their self-reported group membership as a student with a psychological condition. Related to psychological condition status, students did not indicate on-set, diagnosis, and treatment of their condition, which limits the researcher's ability to make recommendations about specific psychological conditions. Nonetheless, one of the most important strengths of this study is that it allows for an exploration of data pertaining to students with psychological conditions within the context of Astin's (1993) I-E-O model, thereby allowing student affairs educators to situate students with psychological conditions within the college environment, and not just as a segment of the population addressed primarily through the services available at the university counseling center.

The findings of this study were used to make recommendations for practice and future research. Implications for practice addressed sense of belonging for students with psychological conditions by raising awareness of mental health issues on campus, recommending programs and interventions that student affairs educators could implement in the co-curricular environment, and how faculty and student affairs educators could support the academic success of students with psychological conditions both in and outside of the classroom. Finally, the implications for practice concluded with a brief discussion about the role institutional policy and administration plays in determining the

climate and culture related to mental illness on campus. To advance the body of work pertaining to college student mental health, a call was made for greater focus of students with psychological conditions within mainstream higher education literature.

Furthermore, grounding research on this population in Astin's (1993) I-E-O model will help college educators situate college student mental health within the broader campus community and create opportunities for specific interventions. Finally, a recommendation was made to broaden the research methodologies used for understanding college student mental health to include advanced statistical analysis and qualitative research methodologies.

References

- Afshartous, D., & Preston, R. A. (2011). Key results of interaction models with centering. *Journal of Education Statistics, 19*, 1-23.
- American College Health Association. *American college health association-National college health assessment II: Reference group executive summary fall 2010*. Linthicum, MD: American College Health Association, 2011.
- Anderson, L. M., & Ongsoco, A. T. S. (2010). Transitioning to postsecondary education with positive mental health: A preliminary correlational study. *Research in Practice, 4*, 25-37.
- Aneshensel, C. S., & Sucoff, C. A. (1996). The neighborhood context of adolescent mental health. *Journal of Health and Social Behavior, 37*, 293-310.
- Astin, A. (1993). *What matters in college: Four critical years revisited*. San Francisco, CA: Jossey-Bass.
- Bathje, G. J., & Pryor, J. B. (2011). The relationship of public and self-stigma to seeking mental health services. *Journal of Mental Health Counseling, 33*, 161-176.
- Baumann, A. E. (2007). Stigmatization, social distance and exclusion because of mental illness: The individual with mental illness as a 'stranger'. *International Review of Psychiatry, 19*, 131-135.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.

- Bertram, M. (2010). Student mental health: Reframing the “problem”. *About Campus*, September-October, 30-32.
- Bovina, I. B., & Panov, M. S. (2006). Common representations of the mentally ill among college students. *Russian Education and Society*, 48, 72-91.
- Brackney, B. E., & Karabenick, S. A. (1995). Psychopathology and academic performance: The role of motivation and learning strategies. *Journal of Counseling Psychology*, 42, 456-465.
- Byrne, P. (2000). Stigma of mental illness and ways of diminishing it. *Advances in Psychiatric Treatment*, 6, 65-72.
- Cheng, D. X. (2004). Students’ sense of campus community: What it means, and what to do about it. *NASPA Journal*, 41, 216-234.
- Choenarom, C., Williams, R. A., & Hagerty, B. M. (2005). The role of sense of belonging and social support on stress and depression in individuals with depression. *Archives of Psychiatric Nursing*, 19, 18-29.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.
- Collins, S. (2006). Mental health difficulties and the support needs of social work students: Dilemmas, tensions and contradictions. *Social Work Education*, 25, 446-460.
- Corrigan, P. W., River, L. P., Lundin, R. K., Wasowski, K. U., Campion, J., Mathisen, J., Goldstein, H., Bergman, M., Gagnon, C., & Kubiak, M. A. (2000). Stigmatizing attributions about mental illness. *Journal of Community Psychology*, 28, 91-102.

- Corrigan, P. W., Watson, A. C., Gracia, G., Slopen, N., Rasinski, K., & Hall, L. L. (2005). Newspaper stories as measures of structural stigma. *Psychiatric Services*, 56, 551-556.
- Cross-Brazzell, J. (2001). A sense of belonging. *About Campus*, January/February, 31-32
- Dickerson, F. B., Sommerville, J. L., & Origoni, A. E. (2002). Mental illness stigma: An impediment to psychiatric rehabilitation. *Psychiatric Rehabilitation Skills*, 6, 186-200.
- Dixon, S. K. & Kurpius, S. E. R. (2008). Depression and college stress among university undergraduates: Do mattering and self-esteem make a difference? *Journal of College Student Development*, 49, 412-424.
- Domhoff, G. W. (1967). *Who rules America*. Englewood Cliffs, NJ: Prentice Hall.
- Dowd, A. C., & Melguizo, T. (2008). Socioeconomic stratification of community college transfer access in the 1980s and 1990s: Evidence from HS&B and NELS. *The Review of Higher Education*, 31, 377-400.
- Dugan, J. P., & Komives, S. R. (2009). *Elements of 2009 Multi-institutional study of leadership methods*. Unpublished research report. College Park, MD: National Clearinghouse for Leadership Programs.
- Dugan, J. P., & Komives, S. R. (n.d.). Campus climate factor analysis. College Park, MD: National Clearinghouse for Leadership Programs.
- Dugan, J. P., & Komives, S. R. (2009). Multi-institutional study of leadership codebook. Unpublished report. College Park, MD: National Clearinghouse for Leadership Programs.

- Dugan, J. P., Kusel, M. L., & Simounet, D. M. (2012). Transgender college students: An exploratory study of perceptions, engagement, and educational outcomes. *Journal of College Student Development, 53*, 719-736.
- Engberg, M. E., & Wolniak, G. C. (2009). Examining the effects of high school contexts on postsecondary enrollment. *Research in Higher Education, 51*, 132-153.
- Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *The Journal of Experimental Education, 75*, 203-220.
- Furr, S. R., Westefeld, J. S., McConnell, G. N., & Jenkins, J. M. (2001). Suicide and depression among college students: A decade later. *Professional Psychology: Research and Practice, 32*, 97-100.
- Goldrick-Rab, S. (2006). Following their every move: An investigation of social-class differences in college pathways. *Sociology of Education, 79*, 61-79.
- Goldrick-Rab, S., & Pfeffer, F. T. (2009). Beyond access: Explaining socioeconomic differences in college transfer. *Sociology of Education, 82*, 101-125.
- Gollust, S. E., Eisenberg, D., & Golberstein, E. (2008). Prevalence and correlates of self-injury among university students. *Journal of American College Health, 56*, 491-498.
- Hagerty, B. M. K., Lynch-Sauer, J., Patusky, K. L., Bouwsema, M., & Collier, P. (1992). Sense of Belonging: A vital mental health concept. *Archives of Psychiatric Nursing, 6*, 172-177.

- Hagerty, B. M., Williams, R. A., Coyne, J. C., & Early, M. R. (1996). Sense of belonging and indicators of social and psychological functioning. *Archives of Psychiatric Nursing, 10*, 235-244.
- Hagerty, B. M., Williams, R. A., & Oe, H. (2002). Childhood antecedents of adults sense of belonging. *Journal of Clinical Psychology, 58*, 793-801.
- Harrisburg Area Community Colleges, (October 1, 2012). Behavioral intervention team model. Retrieved from: <http://www.hacc.edu/BIT/index.cfm>
- Hausmann, L. R. M., Ye, F., Schofield, J. W., & Woods, R. L. (2009). Sense of belonging and persistence in White and African American first-year students. *Research in Higher Education, 50*, 649-669.
- Hill, D. L. (2006). Sense of belonging as connectedness, American Indian worldview, and mental health. *Archives of Psychiatric Nursing, 20*, 210-216.
- Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating “sense of belonging” in first-year college students. *Journal of College Student Retention, 4*, 227-256.
- Holland, J. L. (1996). Exploring careers with typology: What we have learned and some new directions. *American Psychologist, 51*, 397-406.
- Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health, 46*, 3-10.
- Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Rowan-Kenyon, H., & Longerbeam, S. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development, 48*, 525-542.

- Kitzrow, M. A. (2009). The mental health needs of today's college students: Challenges and recommendations. *NASPA Journal*, 46, 646-660.
- Lazarus, R. & Folkman, S. (1984) *Stress, appraisal & coping*. New York, NY: Springer
- Lee, R. M., & Robbins, S. B. (2000). Understanding social connectedness in college women and men. *Journal of Counseling and Development*, 78, 484-491.
- Lubienski, S. T., & Crane, C. C. (2010). Beyond free lunch: Which family background measures matter? *Education Policy Analysis Archives*, 18, 1-39.
- Maestas, R., Vaquera, G. S., & Zehr, L. M. (2007). Factors impacting sense of belonging at a Hispanic-serving institution. *Journal of Hispanic Higher Education*, 6, 237-256.
- Meeuwisse, M., Severiens, S. E., & Born, M. Ph. (2010). Learning environment, interaction, sense of belonging and study success in ethnically diverse student groups. *Research in Higher Education*, 51, 528-545
- National Alliance on Mental Health. (2011). What is mental illness: mental illness facts. Retrieved from:
http://www.nami.org/Content/NavigationMenu/Inform_Yourself/About_Mental_Illness/About_Mental_Illness.htm
- National Behavioral Intervention Team Association. (2012). Retrieved from:
<http://nabita.org/>
- National Center for Education Statistics. (2011). Digest of education statistics: 2011. Retrieved from:
http://nces.ed.gov/programs/digest/d11/tables/dt11_198.asp?referrer=report
- National Center for Higher Education Risk Management. (2012). Retrieved from:

<http://www.nchem.org/>

National Institute of Mental Health. (n.d.). Any disorder among adults. Retrieved from:

http://www.nimh.nih.gov/statistics/1ANYDIS_ADULT.shtml

National Institute of Mental Health. (n.d.). Any disorder among children. Retrieved

from: http://www.nimh.nih.gov/statistics/1ANYDIS_CHILD.shtml

Ostrove, J. M., & Long, S. M. (2007). Social class and belonging: Implications for college adjustment. *The Review of Higher Education, 30*, 363-389.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research, Volume 2*. San Francisco, CA: Jossey-Bass

Paternoster, R., Brame, R., Mazerolle, P., Piquero, A. (1998). Using the correct statistical test for the equality of regression coefficients. *Criminology, 36*, 859-866.

Pittman, L. D., & Richmond, A. (2007). Academic and psychological functioning in late adolescence: The importance of school belonging. *The Journal of Experimental Education, 75*, 270-290.

Pittman, L. D., & Richmond, A. (2008). University belonging, friendship quality, and psychological adjustment during the transition to college. *The Journal of Experimental Education, 76*, 343-361.

Safe Spaces Project. (2011). Retrieved from: <http://www.safespacesproject.org/>

Schlomer, G. L., Bauman, S., & Card, N. A. (2010). Best practices for missing data management in counseling psychology. *The Journal of Counseling Psychology, 57*, 1-10.

- Soet, J., & Sevig, T. (2006). Mental health issues facing a diverse sample of college students: Results from the college student mental health survey. *NASPA Journal*, 43, 410-431.
- Strayhorn, T. L. (2008). Sentido de pertenencia: A hierarchical analysis predicting sense of belonging among Latino college students. *Journal of Hispanic Education*, 7, 301-320.
- Stewart, M. J., Makwarimba, E., Reutter, L. I., Veenstra, G., Raphael, D., & Love, R. (2009). Poverty, sense of belonging and experiences of social isolation. *Journal of Poverty*, 13, 173-195.
- Tao, S., Dong, Q., Pratt, M.W., Hunsberger, B., & Pancer, S. M. (2000). Social support: Relations to coping and adjustment during the transition to University in the People's Republic of China. *Journal of Adolescent Research*, 15, 123-144.
- Thornicroft, G., Rose, D., Kassam, A., & Sartorius, N. (2007). Stigma: ignorance, prejudice or discrimination? *The British Journal of Psychiatry*, 190, 192-193.
- Tinto, V. (1993). A theory of individual departure from institutions of higher education. In *Leaving College: Rethinking the Causes and Cures of Student Attrition*, 2nd Ed. (pp. 84-137). Chicago, IL: University of Chicago Press.
- TriData Division, System Planning Corporation. (2009). Mass shootings at Virginia Tech: Addendum to the report of the review panel. Retrieved from: <http://www.nd.edu/~rwilliam/stats1/x92.pdf>
- University of Colorado-Denver. (2012). Behavioral assessment and threat assessment. Retrieved from: <http://www.ucdenver.edu/life/services/BETA/Pages/default.aspx>

- University of Maryland-College Park, Division of Student Affairs (n.d.). Behavior evaluation and threat assessment team. Retrieved from: <http://beta.umd.edu/>
- University of South Carolina (n.d.). Behavioral intervention team. Retrieved from: <http://www.housing.sc.edu/bit/>
- Virginia General Assembly, Violence Prevention Committee, (2008). Threat assessment team. Retrieved from: <http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+23-9.2C10>
- Walpole, M. (2006). Emerging form the pipeline: African American students, socioeconomic status, and college experiences and outcomes. *Research in Higher Education, 49*, 237-255.
- Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *The Review of Higher Education, 27*, 45-73.
- Westefeld, J. S., Homaifar, B., Spotts, J., Furr, S., Range, L., & Werth, Jr., J. L. (2005). Perceptions concerning college student suicide: Data from four universities. *Suicide and Life-Threatening Behavior, 35*, 640-645.
- Wuensch, K. (2007). Comparing correlation coefficients, slopes, and intercepts. Retrieved from: core.ecu.edu/psyc/wuenschk/docs30/CompareCorrCoeff.pdf. Accessed: February 20, 2013.
- William, S., Hargrove, D. S., Johnson, L., & Deal, W. P. (2006). Mental health education: An evaluation of a classroom based strategy to modify help seeking for mental health problems. *The Journal of College Student Development, 47*, 419-438.

Zivin, K., Eisenberg, D., Gollust, S. E., & Golberstein, E. (2009). Persistence of mental health problems and needs in a college student population. *Journal of Affective Disorders, 17*, 180-185.