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**FACTORS THAT INFLUENCE MINORITY STUDENT ENROLLMENT AT
VARIOUS LEVELS OF POSTSECONDARY EDUCATION**

by

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**A Dissertation Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirements for the Degree of**

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**OLD DOMINION UNIVERSITY
April 2013**

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Abstract

FACTORS THAT INFLUENCE MINORITY STUDENT ENROLLMENT AT
VARIOUS LEVELS OF POSTSECONDARY EDUCATION

LaShauna Dean
Old Dominion University, 2013
Dissertation Chair: Edward Neukrug

Research indicates disparities in the enrollment of minorities in postsecondary education. However, the reasons for the lower enrollment rates of minorities are less clear. The purpose of this study was to explore the relationship between sex, income, GPA, racial/ethnic identity, academic self-concept, and sense of school belonging for African American and Latino/Latina students with level of enrollment at postsecondary schools (two-year community college or four-year university). Participants included 256 African American and Latino/Latina students at two-year community colleges and four-year universities in Virginia. GPA and academic self-concept were found to be predictors of enrollment. Specifically, students with higher GPAs are 5.4 times more likely to enroll in a four-year university and students with higher academic self-concept are 1.8 times more likely to enroll in a two-year community college, when controlling for all other variables. There was also a significant interaction of race and sex on academic self-concept, specifically that African American males had the lowest academic self-concept. No group differences were found between African Americans and Latinos/Latinas in ethnic identity, sense of school belonging, and academic self-concept. The limitations of the current study as well as implications for educators and counselors are also presented.

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This dissertation is dedicated to my family who have been so supportive throughout this journey. First, to my mother who's spirit reminds me that... "love never fails...and now these three remain: faith, hope and love. But the greatest of these is love" (1 Corinthians: 8-13, New International Version). Though she is no longer with me physically on this journey, she has never left my side and constantly sends blessings down on me. To my father, who taught me at an early age the importance of having a strong work ethic and values. Dad, I owe my perseverance and diligence to you. I would have never made it through this program without the lessons you taught me throughout my life. To my sister Brea, one could not have asked for a more supportive and loyal sister. Your fierce dedication and constant companionship soothed the raging seas of my soul on many occasions. Lastly, to my dearest aunt Glynice, I have always felt I had two mothers. I made it through the devastating trauma of losing my mother Cheryl because of your love. I was able to overcome so many challenges because of your supportive and nurturing spirit. Thank you all.

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CHAPTER ONE

Overview of the Research Problem

The problem of underrepresentation of minorities in higher education has been well documented. A 2010 report by the National Center for Education Statistics (NCES) showed that 32% of African Americans between the age of 18 and 24 were enrolled in colleges and universities and that even fewer Latinos/Latinas were enrolled between the age of 18 and 24 with a rate of 26%. This compares to a rate of 44% for Whites. Although the numbers demonstrate a disparity in enrollment in postsecondary education for minorities, the reasons for the disparity are less clear, but probably include high school drop-out rates, high rates of poverty, and high percentages of Latinos/Latinas and African Americans who come from single-parent families who lack a model and encouragement to attend college (NCES, 2010). In addition, Elam (1989) found that "...minorities are not identified, recruited, and encouraged to attend universities and colleges" (p. 89), which may add to the low enrollment rate of minorities in postsecondary education.

In addition to the challenges listed above, minorities also have different motivations than Whites for attending postsecondary institutions. Phinney, Dennis, and Osario (2006) found that the top three motivations for seeking higher education in minority students were: (1) a desire to help their family, (2) to prove their ability to succeed academically, and (3) encouragement from significant people in their lives. The second reason, to prove their ability to succeed academically, was of particular interest to this study. In addition, sense of school belonging, which measured how accepted students felt in their school environment was also examined, both variables had not been

previously examined against level of enrollment in postsecondary education. Moreover, it was believed that educators would benefit from exploring the factors that contribute to the enrollment of minorities in institutions of postsecondary education.

Supporting the idea for examining differential influences on why different ethnic and cultural groups attend college, Bateman and Hossler (1996) conducted a study exploring the postsecondary education plans of African American and White students. They found that there were different contributing factors that influenced postsecondary plans for African American and White students. For African American students, parents' expectations of their student to attain postsecondary education, the student's academic ability, and the mother's educational level, were found to be the most powerful predictors of postsecondary educational plans. White students showed additional contributing factors such as the father's educational level and student involvement in school related activities. Although the sample was limited to African American and White students, it lent support to the need for individual analysis of factors that contribute to postsecondary enrollment in minority students overall, specifically the influence of students academic ability and the importance of participating in one's school environment.

Brief Summary of Relevant Literature

Literature dating back to the 1800s has chronicled the lack of education for minority populations, most specifically African-Americans, at which point the first historically Black colleges were founded. The problem of education hit its pinnacle in the 1960s, when the Civil Rights Act of 1964 and the Higher Education Act of 1965 were enacted. These acts highlighted the need for opportunities in higher education for lower and middle class families and the importance of equal access for minorities. During this

time research also acknowledged the need for more resources in poorer neighborhoods often inhabited by minorities (Harper, Patton, & Wooden, 2009; National TRIO Clearinghouse, 2003).

Although the need for more access to higher education in minorities has been acknowledged throughout the literature and provisions have been made to increase access, several internal and external challenges continue to encumber minorities that influence their decision and ability to obtain postsecondary education. Internal challenges concern how minorities perceive their abilities and sense of belonging in their cultural community and school environment. Ethnic identity, academic self-concept, and sense of school belonging are related to the internal struggles faced by minorities (Freeman, 1997). Issues that are outside of one's control such as other's perception of race and sex, and outside perceptions of one's academic abilities based on race are all external challenges. External challenges also include racial microaggressions and lack of access to financial support and/or opportunities to fund postsecondary education (Elam, 1989). The internal challenges such as ethnic identity, academic self-concept, and sense of school belonging, as well as the external challenges, sex and academic performance (G.P.A.) were explored in this study in relation to how each predict enrollment in two-year community colleges and four-year universities.

Although some have examined the relationship between ethnic identity, academic self-concept, and sense of school belonging with attendance at four-year universities (Edman & Brazil, 2009), the relationship between these internal factors at community colleges had not been examined. The need for research that is inclusive of community colleges is highlighted by the fact that the National Center for Education Statistics (2008)

showed that 18.4% of high school students planned to attend a two-year community college, and 27% of those who planned to go to community college were Latinos/Latinas.

Ethnic Identity

Research indicates that ethnic identity is a critical component of identity development in minorities (Phinney & Alipuria, 1990). Ethnic identity is defined as how one perceives his or her belongingness to a certain cultural group or a group with shared heritage and practices (Torres, 2003). Various models of ethnic identity closely parallel Erikson's theory of psychosocial development, which explains ego/identity development through life stages. For minorities, identity exploration often includes exploration of ethnic identity. Research has been extensive on the individual exploration that occurs from middle childhood into adulthood (Berk, 2012), which led to the emergence of several models of ethnic identity. For African Americans, in the 1960s, racial/ethnic identity models emerged in response to discrimination. Cross (1971) was one of the first to develop a model of African American identity that was based on identity development and progressed from non-exploration of ethnicity to an integrated, explored ethnic identity. Latino/Latina models of ethnic identity were less prominent during the 1960s but emerged in the late 1990s. Torres (1999) developed a racial/ethnic model of identity that focused on how Latinos/Latinas face challenges in integrating their Latino/Latina culture with that of the American mainstream culture. Although there are a number of ethnic identity models that address specific ethnicities, Phinney (1989) developed a model of ethnic identity development that aimed at incorporating most racial/ethnic minorities. Phinney's model of ethnic identity development includes a progression from negative stereotypes about one's own ethnic group to more positive acceptance and

integration of ethnicity, via cultural exploration. Although research has been extensive in exploring ethnic identity at the four-year university level, research has not been extensive in exploring the relationship between ethnic identity, academic self-concept, and sense of school belonging with differential enrollment in community colleges and four-year universities.

Academic Self-Concept

Academic self-concept consists of “the attitudes and feelings that an individual has about his or her academic abilities” (Cokley & Chapman, 2008, p. 354), and that a positive relationship exists between academic self-concept and academic achievement (Lyon, 1993; Marsh & O’Mara, 2008). Students with higher academic self-concept experienced more academic success, which has been defined as higher GPAs and higher grades in individual courses (Awad, 2007; Cokley, 2000; Cokley & Chapman, 2008; Muijs, 1997). Racial differences do exist in how minorities perceive academic achievement, with minority students perceiving themselves as less academically competent or able (Phinney, Dennis, & Osorio, 2006). This is important because research indicates that more positive academic self-concept is related to better academic performance (Cokley, 2002) and more confidence in approaching school-related tasks (Gloria & Robinson-Kurpius, 2001; Kenny & McEachern, 2009). Little had been written on the relationship between academic self-concept and the pursuit of postsecondary education at the community college level.

Sense of School Belonging

Sense of school belonging is defined as students feeling accepted, respected, and included at their school environment (Goodenow, 1993b). It is also related to how

students feel about their relationship with peers and teachers (Faircloth & Hamm, 2005). Research has indicated that sense of school belonging is related to race (Anderman, 2002; Faircloth & Ham, 2005; Johnson, Solner, Leonard, & Alvarez, 2007; Morrison et al., 2003; Sanchez et al., 2005), and feelings of isolation, fighting against perceived stereotypes, and adjustment difficulties have been found with minority students when attending college (Elam, 1989; Freeman, 1997). With studies suggesting that higher sense of school belonging is related to academic achievement, developing a stronger sense of belonging for minority students seems critical (Faircloth & Hamm, 2005; Hagborg, 1994; Irvin, Meece, Byun, Farmer, & Hutchins, 2011; Pittman & Richmond, 2007; Sanchez et al., 2005). Little research has explored the relationship between sense of school belonging and pursuit of postsecondary education at the community college levels.

Sex

For the purposes of this study, sex was defined as the biological sex at birth either male or female, and was examined as a possible predictor. Research has supported that sex is an additional influencing factor for minority enrollment in postsecondary education (NCES, 2011). Such that 57% of all Bachelor degrees issued in 2009, were earned by females. Previous literature has supported that differences exist in the academic achievement of females and males, and that in recent years, females have graduated high school and enrolled in higher education at higher rates than males. In addition, females have also reported higher ethnic identity, academic self-concept, and a stronger sense of school belonging (Chae, 2000; Hagborg, 1994; Johnson et al., 2007; Sanchez et al., 2003). Women also earned higher GPAs than men, which has also been found to be correlated to women having higher ethnic identities (Cokley & Moore, 2007). Minority

females have outperformed males in academic tasks and have been found to place more value in their education (Cokley & Moore, 2007; NCES, 2011; Osborne, 1997).

GPA and Academic Achievement

A number of studies examining postsecondary enrollment have defined academic achievement by a student's grade point average (Awad, 2007; Cokley et al., 2011; Ong, Phinney, & Dennis, 2006). Likewise, research has also found that academic achievement is related to enrollment in postsecondary education (Muijs, 1997). Unfortunately minority students often earned lower GPAs than White students (LeCroy & Krysik, 2008) and this, in turn, is reflected by their ability to gain entrance to postsecondary institutions.

Literature has also demonstrated that GPA is positively predicted by academic self-concept and sense of school belonging (Anderman, 2002; Awad, 2007; Cokley, 2002; Cokley & Chapman, 2008; Cokley et al., 2011; Powel & Arriola, 2003; Reynolds, 1988), lending support to examining the relationship of GPA and enrollment at various levels of postsecondary education. This intricate relationship among academic self-concept, sense of belonging, and GPA was believed to have a profound impact on the likelihood of minority high school students applying to and attending postsecondary education.

Significance of the Study

Minorities are expected to become the majority by 2050, making up 54% of the population according to the U.S. Census Bureau (U.S. Census Bureau, 2008). In 2012, minority children constituted over half (50.4%) of all children born in the United States according to the U.S. Census Bureau (2012). With the number of minorities growing, more attention will need to be placed on the needs of this growing population. Several reports have exclusively focused on low high school graduation rates of minorities and

the lack of minorities in higher education (NCES, 2008; NCES, 2010; NCES, 2011). Other research has focused on the high rates of poverty, early pregnancy, and lack of postsecondary education in parents of minorities, which all effect the low enrollment of minorities in education (Herndon, & Hirt, 2004; NCES, 2010). However, few studies focused on the relationship of ethnic identity, sense of school belonging, and academic self-concept with enrollment in two-year community colleges or four-year universities. In addition, few studies had examined the interaction between ethnic identity, academic self-concept, and sense of school belonging, or how the additional predictors of sex and GPA, impacted the level of enrollment.

Purpose of the Study

The purpose of this study was to explore the relationship between sex, GPA, racial/ethnic identity, academic self-concept, and sense of school belonging for African American and Latino/Latina students with level of enrollment at postsecondary schools (two-year community college or four-year university). To examine the many facets of obtaining postsecondary education for minorities, the study also examined interactions between the predictor variables and enrollment in the differential levels of postsecondary education. The study compared each racial category to generate the best possible predictors for each race. Binary logistic regression was used to predict the odds of enrollment at each level of postsecondary education. This researcher sought to further the literature regarding the enrollment and retention strategies for minority students in order to increase minority enrollment in both the two-year community college and the four-year university level of postsecondary education.

Research Questions

The primary research question was: “Does ethnic identity, sex, sense of school belonging, GPA, and/or academic self-concept predict enrollment in postsecondary education?” Additional sub-questions included: “What, if any, interactions exist between ethnic identity, sense of school belonging, academic self-concept, sex, and GPA and enrollment in postsecondary education at each level?” and “Do African Americans and Latinos/Latinas students differ in their academic self-concept, sense of school belonging, or ethnic identity?”

Assumption of the Study

Several assumptions were examined when developing this study. The primary researcher was an African-American female in her early thirties who is currently enrolled in higher education. Several biases and cultural predispositions were inherent in the primary researcher such as the belief that minorities are disproportionately enrolled in higher education. In addition, the primary researcher was personally aware of the many challenges minority students face in higher education. The primary researcher believed that minority students face additional challenges such as lack of financial support, discrimination, microaggressions, and stereotype threats that White students do not face. The primary researcher also believed that the current educational system is not invested in the advancement of minority education as evidenced by a lack of financial commitment in the form of scholarships, withdrawal of financial aid support, strict legal system, and lack of inner-city/urban community outreach centers to support education. The primary researcher believed that more resources should be dedicated to helping minorities explore postsecondary education through field trips and mentorship for

minorities. This was important to the context of the study because the participants in the study were African-American students. The primary researcher also held certain assumptions about the experience of the process of entering higher education because it was a process that the researcher had herself been through. This writer acknowledged that within-group differences were present within the context of the African-American and Latino/Latina culture. Lastly, due to the sampling environment being based in Virginia, the researcher believed that several cultural factors will influence the study such as being from a southern state.

Definition of Key Terms

Race is defined as the biological and physical features of a certain group (Chavez & Guido-DiBrito, 1999).

Racial identity is defined as the process of how minority groups develop their self-concept in lieu of the larger dominant culture (Gamst, Liang, & Der-Karabetian, 2011). Gamst, Liang, and Der-Karabetian (2011) posit that racial and ethnic identity share three common traits: “(1) describe a sense of belonging to a social group through some perceived or attributed core of shared characteristics, (2) are associated with positive or negative attitudes towards one’s social group as well as that of out-groups, and (3) vary in importance across time and context” (p. 87). This study seeks to capture each of those traits through the use of an ethnic identity measure.

Ethnicity consists of a shared heritage and ancestry, and extended immersion into the traditions and patterns of a group (Neukrug, 2003).

Ethnic Identity embodies the perception of one’s belonging or affiliation with an ethnic group (Gamst, Liang, & Der-Karabetian, 2011). This can be assessed through the use of

various instruments that assess whether one has explored his or her ethnic heritage, have committed to or rejected a heritage, and have achieved an ethnic identity. The terms “racial and ethnic identity” were used interchangeably in this study to represent the perception of belonging to an ethnic group.

Racial/Ethnic Categories is used in this study to describe groups of participants and uses definitions of race provided by the United States Census Bureau. According to the U.S. Census Bureau (2012), descriptive categories of race were defined by asking individuals in the United States how they describe race. The U.S. Census Bureau reported that they do not use definitions that are biologically or genetically based, but instead use the social definition. The U.S. Census Bureau has five categories of race: White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander (United States Census Bureau, 2012). The U.S. Census Bureau gives the following definition of racial categories:

White – A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

Black or African American – A person having origins in any of the Black racial groups of Africa.

American Indian or Alaska Native – A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment.

Asian – A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia,

China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

Native Hawaiian or Other Pacific Islander – A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.” (U.S. Census Bureau, 2012)

The U.S. Census Bureau differentiates Hispanic or Latino/Latina origin from a racial category and states “‘Hispanic or Latino’ refers to a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race” (Humes, Jones, & Ramirez, 2011, p. 2). The terms Hispanic and Latino/Latina were used interchangeably to represent individuals who identify as belonging to Hispanic or Latino/Latina culture, regardless of country of origin.

Minority includes traditionally marginalized racial categories to include African America, Latino/Hispanic, and Native American.

Sex is defined as the biological aspects of sex at birth, either male or female. For the purposes of this study, the term *sex* was used to distinguish between male and female.

GPA stands for grade point average and is a measure of achievement that is compiled by taking an average of a student’s grades received in school (Education, 2012). GPA is often standardized on a scale ranging from 0 to 4.0, with 4.0 representing a grade of “A,” 3.0 representing a grade of “B,” 2.0 representing a grade of “C,” 1.0 representing a grade of “D,” and 0.0 representing a grade of “F.”

Postsecondary education included any type of schooling and/or training beyond high school. This study defined postsecondary education as community colleges and

universities. The terms “postsecondary education” and “higher education” were used interchangeably.

Overview of Methodology

Participants

The criterion for participation in this study is that participants must have been of African American and/or Latino/Latina descent, between the ages of 18-20, U.S. born citizens who speak and read English proficiently, and enrolled in postsecondary education. Participants were selected using criterion and convenience sampling. In order to protect participants, no identifying information was collected. Assuming a moderate effect size at $P = .80$, a minimum of 143 participants was needed to run the Wald statistic which uses the chi-square distribution (Cohen, 1992; Field, 2009), however a sample of 360 participants was initially sought.

Data Collection Procedures

Participants were recruited using online-survey format primarily and in-person survey collection as a means of augmenting survey participation. The researcher contacted the director of multicultural affairs at all public two-year community colleges and four-year universities and colleges in Virginia. The primary researcher sent each school a link to the Survey Gizmo survey. Facebook and in-person data collection was only used as a means of reaching the required number of participants. The participants took a demographic questionnaire (Appendix A), the Multigroup Ethnic Identity Measure (Phinney, 1992, Roberts et al., 1999; Appendix B), the Psychological Sense of School Belonging Scale (Goodenow, 1993b; Appendix C), and the Academic Self-Concept Scale

(Reynolds, Ramirez, Magrina, & Allen, 1980; Appendix D). Completion of the instruments took between 10-25 minutes.

Data Analysis

A binary logistic regression analysis was utilized to explore the odds of minority enrollment in postsecondary education based on sex, GPA, ethnic identity, academic self-concept, and sense of school belonging. Logistic regression has similar concepts as multiple regression, except that the dependent or outcome variable is dichotomous, using a binary (yes or no) response. Data was also analyzed to examine interactions of each of the predictor variable on the level of enrollment in postsecondary education. In addition, descriptive statistics, ANOVA, and Pearson product-moment correlational coefficients were used in data analysis.

Summary

Minority underrepresentation in higher education has long-term implications, such as greater unemployment and underemployment rates, making this a crucial issue for this population. Several factors potentially play a mediating role in the enrollment of minorities in postsecondary education including ethnic identity, academic self-concept, and sense of school belonging. Greater exploration of one's ethnic identity has been shown to be a strong predictor of academic achievement, self-esteem, and identity development for minorities. Research also indicated that students who believe in their academic abilities have higher grades and are more confident about school-related tasks. Also important to academic achievement is one's perception of the academic environment, defined as sense of school belonging. Research has shown that minorities score lower on surveys that measure ethnic identity, academic self-concept, and sense of

school belonging. However, research has not highlighted how those factors are related to minority enrollment in postsecondary education at the two-year community college and four-year university levels. This study examined those factors, as well as the additional variables of sex and GPA, by using binary logistic regression to explore main and interaction effects of the variables among Latino/Latina and African American students at each level of postsecondary enrollment.

CHAPTER TWO

LITERATURE REVIEW

Research dating back to the 1800s has documented that minority students face many unique barriers in enrolling at postsecondary schools of education (Harper, Patton, & Wooden, 2009). These barriers can include internal as well as external impediments to successfully working towards academic goals. External barriers have included financial constraints, microaggressions, and racial stereotyping (Ancis, Sedlacek, & Mohr, 2000; Elam, 1989; Harper, Patton, Wooden, 2009; Love, 2008; Milner, 2004; Walpole, 2008). However, less attention has been given to the internal struggles faced by minority students as they plan and attempt to enter into the world of higher education. Some internal struggles faced by minority students include lack of school belonging, lack of academic confidence, lack of racial and/ ethnic identity.

This chapter details various models of ethnic/racial identity that have been applied to minorities. The review discusses special considerations from African American, Latino/Latina, and Native American populations, as well as a discussion of these factors as they relate to secondary and postsecondary students. This chapter also includes a discussion of academic self-concept and sense of school belonging, as those concepts apply to academic achievement and ethnic differences. Sex differences are also discussed in this chapter. Lastly, a brief review of the limitations of previous research studies is presented.

Racial/Ethnic Identity

Definition and Relevancy

Racial and ethnic identity are important dimensions of ego identity development (Gamst, Liang, & Der-Karabetian, 2011) and have been the focus of many studies involving African-Americans, Latinos, Asian Americans, and Native Americans (Rowley, Sellers, Chavous, & Smith, 1998; Phinney & Alipuria, 1990; Kenyan & Carter, 2011; Umana-Taylor, Gonzales-Backen, & Guimond, 2009). Although the terms racial identity and ethnic identity have often been used interchangeably, there are some differences in their definitions. Race has traditionally been defined biologically such as the physical features of a certain group (Chavez & Guido-DiBrito, 1999; Neukrug, 2003). Racial identity can be expanded further to embody the process of how minority groups develop their self-concept in lieu of the larger dominant culture, as suggested by Gamst, Liang, and Der-Karabetian (2011).

Ethnicity, as defined by Torres (2003), is “the distinguishing differences of a group that are based on national or cultural characteristics” (p. 533). In addition, Neukrug (2012) suggested that ethnicity includes a shared heritage and ancestry, and extended immersion into the traditions and patterns of a group. Therefore, ethnic identity is the perception of one’s belonging or affiliation with an ethnic group (Gamst, Liang, & Der-Karabetian, 2011). Gamst, Liang, and Der-Karabetian (2011) suggested that the terms racial identity and ethnic identity both encompass a sense of belonging to a social group and involve positive or negative attitudes towards one’s own social/ethnic group and other groups.

Racial/Ethnic Identity Models

Racial and ethnic identity development models were originally theorized for African-Americans in response to oppression and discrimination faced in the 1960s. In

1971, in the context of the Civil Rights movement, Cross developed the Nigrescence theory of African American identity development in which African Americans move from non-exploration of their race to a multicultural identity that integrates their own race and ethnicity as well as the dominant culture (Chavez & Guido-DiBrito, 1999; Gamst, Liang, & Der-Karabetian, 2011). The first stage in Cross's model of Black racial identity development is pre-encounter assimilation and is characterized by lack of interest in specifying a race or ethnicity. In the pre-encounter miseducation stage, African Americans believe the negative stereotypes about Black people (Cokley & Helm, 2007). Those beliefs then lead to varying degrees of self-hatred and lack of acceptance of one's race in the pre-encounter self-hatred stage. African Americans then move into the immersion-emersion anti-White stage in which they have extreme hatred of the White dominant culture and subsequently leads to Black individuals focusing on the importance of being Black in the internalization Afrocentric stage. Lastly, in the internalized multiculturalist stage, African Americans emerge as multifaceted in that they have pride and acceptance for their own Black identity and can integrate the dominant culture (Cokley & Helm, 2007).

Unlike Cross's stage theory of development, Parham suggested a racial identity development model that posits a life-long, cyclical identity development process for African Americans (Chavez & Guido-DiBrito, 1999). Parham proposed that there are and will be many episodic encounter experiences faced by African Americans, which will change their perception process throughout the lifespan. Individuals will move from having angry feelings towards White culture to having full acceptance of their Black identity and then to a place of "bicultural success" (Chavez & Guido-DiBrito, 1999, p.

42) in which they obtain a more realistic sense of how their Black identity interacts with the dominant culture. Like Cross, Parham emphasized “encounter experiences” in which a racist or oppressing event triggers African Americans to become aware of their racial identity. Encounter experiences assist African Americans in reevaluating their Black identity (Vandiver, 2001).

Latino/Latina racial and ethnic identity development faces an even greater challenge due to the within-group differences. One of the first challenges faced by Latino/Latina adolescents is the determination of what to label themselves: Latino/Latina, Mexican, Hispanic, American, etc. Zarate, Bhimji, and Reese (2005) conducted a study to examine how Latino/Latina adolescents label and describe their ethnicity. Zarate et al. (2005) found that the adolescent participants in their sample most frequently selected Latino/Latina, Mexican American, Hispanic and Mexican as labels and that more than 50% of participants preferred the label “Latino” to “Hispanic”. A report by Johnson et al. (1997) reported that people of Hispanic origin prefer to identify by their country of origin (i.e. Puerto Rican, Cuban, Mexican, etc.) vs. using the term Hispanic. The diversity of Latino/Latina culture makes consolidating one model of racial/ethnic identity development difficult.

Several Latino/Latina models of racial/ethnic identity development have used existing identity models such as those for African Americans or multiple ethnic groups as a guide for Latino/Latina racial identity development. Using Phinney’s model of ethnic identity as a framework, Torres (1999) created the Bicultural Orientation Model which examines Latino/Latina students’ choices between two cultures: their culture of origin and the majority culture. Torres posited that there are four cultural orientations for

Latino/Latina students: Bicultural orientation, Latino/Latina /Hispanic orientation, Anglo orientation, and Marginal orientation. The first orientation, bicultural orientation, is characterized by the integration of both cultures. In the Latino/Latina /Hispanic orientation, individuals experience greater comfort with their culture of origin, which changes in the Anglo orientation in which individuals experience greater comfort with the majority culture. In the last orientation, Marginal orientation, individuals experience an internal conflict caused by discomfort with both their culture of origin and the majority culture.

In 2003, Torres conducted a longitudinal study that examined factors that influences Latino/Latina ethnic identity development. Torres identified two categories of influences: situating identity and influences on change in identity development. In the situating identity dimension, Latinos/Latinas are at the beginning stage of their identity development and are greatly influenced by the environment in which they grew up, generation and family factors, and their perception of themselves in society. In the change in identity development dimension, change occurs due to cultural dissonance and subsequently causes a shift of the individual's relationship within the environment (Torres, 2003).

Diverging from the previous models of Latino/Latina ethnic identity, Delgado-Romero (2001) emphasized the importance of using a model of ethnic identity that takes into consideration actual case histories of Latinos/Latinas and therefore highlighted the work of Ruiz. Ruiz's (1990) model is based on actual case history from Latino/Latina University students and has been used to help counselors conceptualize the unique contributions of the Latino/Latina heritage of their clients. The model contains five

stages: the causal stage, cognitive stage, consequence stage, working through stage, and the successful resolution stage. In the causal stage, the individual is inundated with negative messages about Latino/Latina culture and heritage causing the person to rebuke identification with the Latino/Latina culture. The negative messages from the causal stage are then broken down into three inaccurate beliefs about what it means to be Latino/Latina in the cognitive stage: 1) the individual links group membership with poverty and prejudice; 2) the individual then feels that the only way to avoid poverty and prejudice is to become fully assimilated into White culture; and 3) the individual believes that to be successful, he or she must shed all association with their ethnic identity in order to present a “socially acceptable image to others and to oneself” (Ruiz, 1999, p. 3). The fracture of one’s ethnic identity continues in the consequence stage, causing the individual to reject their heritage completely. Individuals in this stage may change their names to fit better with the majority culture or try to hide noticeable physical characteristics of their race. In the working through stage, the individual is not able to deal with the conflict in their ethnic identity and often seeks to increase connection with their ethnic community and reclaim their ethnicity. If the individual is able to obtain greater acceptance of themselves, their culture, and their ethnicity, then they move into the successful resolution stage.

American Indian identity development is complex and multidimensional, as is the challenge in determining a model of ethnic identity that best fits multiple Latino/Latina groups. Over five million people in the United States identified as American Indian or Alaska Native on the 2010 census (US Census, 2012). Of that five million, 2.3 million people reported being American Indian in combination with another race, most

commonly White or Black. In addition, within the broad category of American Indian are various tribes such as Navajo, Blackfeet, Inupiat, Yup'ik, or Central American Indian groups or South American Indian groups (US Census, 2012). The within-group differences of the American Indian culture are abundant and are spread throughout the United States, making it difficult to solidify one model of ethnic identity.

Due to that variability, most researchers have adopted other ethnic identity models that include the importance of tribe and spirituality (Chaves & Guido-Debrito, 1999). Kenyan and Carter (2011) adapted Phinney's model of ethnic identity for use with American Indian adolescents. As seen in the various ethnic identity models (Cross, Parham, Helms, etc.), American Indians experience a conflict between their culture and the dominant culture. Garret (1994) described the conflict as "cultural discontinuity" which occurs when American Indian traditional values of community, harmony, and spirituality clash with the expectations of the mainstream culture. This sense of cultural discontinuity is especially heightened by the forced acculturation that exists in the history of American Indians (Jones & Galliher, 2007; Kenyan & Carter, 2011).

The decision of which ethnic identity model is most suitable for minorities varies depending on several contextual and social factors. The importance placed on heritage, culture, and race by the family of origin, the physical environment an individual grows up in, and the social group an individual associates with all play a determining role in which ethnic identity model will be most appropriate.

There are various models of racial/ethnic identity that address individual ethnicities and races; however, Phinney (1989) presented a comprehensive model of minority ethnic identity that sought to incorporate most ethnicities. Phinney's model of

minority ethnic identity is based on the Marcia's model of identity statuses and consists of four stages: diffuse, foreclosed, moratorium, and achieved. In the first stage of minority identity development, diffuse, an individual has not explored their own ethnicity, and therefore have unquestionably taken on the values of the dominant society. At this stage, individuals do not necessarily have a negative opinion of their own ethnic group (Phinney, 1989). Although there may not be exploration of the ethnic identity, individuals move into the foreclosed identity stage in which they become clearer about their own ethnicity and may start to form positive or negative opinions about their own ethnicity. Phinney (1989) suggested that an individual's opinion of their own ethnicity is usually based on their socialization experiences or how they interact with people within their own group.

Following the foreclosed identity stage, an encounter experience usually occurs in which individuals experience a conflict between their own ethnic values and the values of the dominant culture. The encounter experience leads to the moratorium stage in which individuals begin to explore their ethnicity and seek more information most commonly from other ethnic group members. Phinney (1989) emphasized that individuals in the moratorium stage of identity development may experience confusion about the meaning of their own ethnicity in their lives. Lastly, the achieved identity stage occurs when individuals have resolved questions about their ethnicity and have a well-defined understanding and acceptance of their ethnicity. In a qualitative study conducted to access the stages of minority ethnic identity, Phinney (1989) found that all minority participants in the sample fell within one of the four stages. Half of the sample of adolescents, ages 15 to 17, were in the diffuse and foreclosed stages, one fourth of the

sample were in the moratorium stage, and the last one fourth of the sample were in the achieved identity stage. Phinney found support for several implications: 1) that the search and exploration of one's ethnic identity increases with age, and 2) minority students who obtained the achieved identity or had explored their ethnicity were better adjusted socially, had higher scores regarding their self-evaluation, and felt a higher sense of mastery, suggesting that the process of ethnic identity development is crucial in understanding the "...adjustment of minority youth" (Phinney, 1989, p. 47).

Phinney and Alipuria (1990) conducted a quantitative study to explore the importance of ethnic identity and to look at the search and commitment dimensions of ethnic identity for African American, Mexican American, and Asian American college students. They found that African and Mexican American students showed greater ethnic identity search than whites, meaning they manifest a strong need to find out about their ethnic background and its role in their lives. Phinney and Alipuria (1990) also found that self-esteem is also related to the ethnic identity search for African and Mexican Americans, showing that ethnic identity is a crucial component of identity development in minority adolescents.

Developmental Influences on Minority Ethnic Identity Development

The process of identity development has been researched extensively in young children. According to Erikson's theory of psychosocial development, the major developmental task of adolescence, approximately ages 12 to 18 years old, is to explore the sense of self. During the identity vs. role confusion stage, adolescents begin to question themselves and the world and often start on a journey of self-exploration (Berk, 2012). Using Erikson's concepts of exploration and commitment, James Marcia

developed identity statuses commonly experienced by adolescents: identity achievement, identity moratorium, identity foreclosure, and identity diffusion (Berk, 2012). In the identity-diffused status, adolescents have not explored their values, goals, and beliefs and therefore have no commitment. When adolescents commit themselves to an identity without fully exploring their options, they are in the identity-foreclosed status. Once adolescents start to explore their options, they enter into the identity moratorium status in which they gather more information about their options. The end goal is for adolescents to have an achieved identity, which occurs when they have fully explored their options and have subsequently committed to an identity (Berk, 2012).

The catalyst for identity formation in all races is exploration. With ethnic identity development, a key component is the exploration of one's ethnicity and race (Phinney & Alipuria, 1990). During adolescence, more than any other stage in one's life, ethnic identity exploration comes to the forefront as minority adolescents are confronted with a mainstream culture that is different from their own (Phinney, Cantu, & Kurtz, 1997). Oyserman, Harrison, and Bybee (2001) conducted a study involving African American children in the eighth grade that explored whether racial identity is related to academic efficacy. They found that when the participants viewed being African American as a part of their achievement, they were more successful in school. In addition, the participants' awareness of racism also affected academic efficacy. Altschul, Oyserman, and Bybee (2006) found that awareness of racial-ethnic identity increased in the transition from middle school to high school, suggesting that as adolescents are immersed in different environments, they become more aware of their own racial/ethnic identity.

This period of exploration, due to transitioning environment, becomes especially pertinent as adolescents transition from high school to college. Berk (2012) highlighted the importance of the college experience in the identity formation progress. Numerous studies have supported that college students more often have a better sense of their racial-ethnic identity. Phinney and Alipuria (1990) sought to explore the changing process of ethnic identity due to the transition from high school to college. They found that ethnicity was rated as “an important component of identity development” in their sample (p.179). Phinney and Alipuria (1990) also found that the African American and Latino/Latina participants were more fully immersed in ethnic identity search than the White and Asian American participants.

Racial Identity and Academic Achievement

Research has extensively supported the relationship between racial/ethnic identity and academic achievement (Altschul, Oyserman, & Bybee, 2006; Ong, Phinney, & Dennis, 2006; Oyserman, Harrison, & Bybee, 2001; Rowley, 1996; Zarate, Bhimji, & Reese, 2005). Individuals who have an achieved racial-ethnic identity show greater academic achievement and academic self-efficacy (Altschul, Oyserman, & Bybee, 2006; Oyserman, Harrison, & Bybee, 2001). In addition, adolescents who have begun to explore their racial-ethnic identity also have higher academic achievement. This again supports Phinney and Alipuria’s (1990) findings that ethnic identity is an important part of identity development for minorities. Ethnic identity is woven into academic achievement, self-esteem, and psychological adjustment (French & Chavez, 2010).

Racial Identity and Self-Esteem

Self-esteem has been defined as how individuals judge and feel about their self-worth (Berk, 2012). For minorities, self-esteem is also influenced by how their ethnic group is viewed by their family and the mainstream culture (Berk, 2012). For Latino/Latina and African Americans, research has supported the link between self-esteem and racial-ethnic identity (Johnson, Kurpius, Rayle, Arredondo, & Tovar-Gamero, 2005). However there has been less research on the link between self-esteem and racial-ethnic identity in American Indian populations. Using the Rosenberg Self-Esteem scale, a measure of self-esteem, many studies have supported that individuals with explored or achieved, often higher ethnic identity statuses have greater self-esteem (Phinney, Cantu, & Kurtz, 1997; Phinney & Alipuria, 1990; Rowley, Sellers, Chavous, & Smith, 1998; Umana-Taylor, Gonzales-Backen, & Guimond, 2009).

Academic Self-Concept

Definition and Relevancy

Young children begin to develop a self-concept as early as three years old (Woolfolk & Perry, 2012). Self-concept includes the "...attributes, abilities, and attitudes that make us who we are..." (Woolfolk & Perry, 2012, p. 252). In early adolescence, definitions of self-concept begin to include more specific domains and descriptions such as school performance, social comparisons, and personality traits (Berk, 2012). Woolfolk and Perry (2012) suggest that adolescents describe themselves in terms of scholastic achievements, intellectual abilities, creativity, and social competence. Marsh and Craven's (2006) research describes academic self-concept as a multidimensional and hierarchical notion. The authors point to Shavelson, Hubner, and Stanton's (1976) hierarchical model of self-concept that includes general self-concept as an overarching

first level with academic and nonacademic self-concept as one, secondary level. The academic self-concept level includes how students evaluate their effectiveness in various subjects such as English, math, history, and science.

Definitions of academic self-concept have varied in the research and included several components such as a grade performance, and peer and self-evaluation. West, Fish, and Stevens (1980), as cited by Lent, Brown, and Gore (1997), defined academic self-concept as “incorporating attitudes, feelings, and perceptions relative to one’s intellectual or academic skills. As such, it represents a mixture of self-beliefs and self-feelings regarding general academic functioning (p. 308). Bong and Clark (1999) expounded on the definition of academic self-concept by emphasizing research that shows that academic self-concept includes cognitive and evaluative dimensions. The cognitive dimension focuses on an individual’s belief that he or she can do a task. The evaluative dimension of academic self-concept describes the individual’s beliefs about how capable he or she is at completing a specific academic task. Both dimensions lend support to the multidimensional nature of academic self-concept.

In 1981, Reynolds created the Academic Self-Concept Scale to measure academic self-concept. The original Academic Self-Concept Scale (Reynolds, 1981) was normed on college students and subsequent research has studied the college population extensively regarding academic self-concept. However, academic self-concept has also been studied in middle and high school students as well (Gordon, 1996; Kenny & McEachern, 2009; Lyon, 1993; Marsh & O’Mara, 2008; Muijs, 1997; Okeke, Howard, & Kurtz-Costes, 2009). In a four and a half year longitudinal study, Bordes-Edgar, Kurpius, and Rund (2011) suggested that freshman begin college with higher self-beliefs, therefore

aspects that encourage self-beliefs should be incorporated developmentally to assist in academic persistent and achievement. A factor-analysis of the scale revealed seven dimensions relating to academic self-concept: grade and effort dimension, study habits/organizational self-perceptions dimension, peer evaluation of academic ability dimension, self-confidence in academic ability dimension, satisfaction with school dimension, self-doubt regarding ability dimension, and self-evaluation with external standards dimension (Reynolds, 1988). Each dimension focuses on how individuals perceive their abilities related to academics.

Some of educational research has suggested that academic self-concept and academic self-efficacy are interchangeable concepts (Bong & Clark, 1999). Self-efficacy "...deals primarily with cognitively perceived capability of the self" (Bong & Clark, 1999, p. 141). In other words, self-efficacy encompasses one's perceptions about one's ability to achieve a desired outcome. However, Lent, Brown, and Gore (1997) found that while academic self-concept and self-efficacy are related constructs, they are unique in that self-concept relates to overall grade performance, whereas academic self-efficacy relates to global performance in school. "Grade performance" involves how students perform on academic tests and other evaluative measures and is based on some form of criterion whereas "global performance" relates the "cross-situational" performance (Lent, Brown, & Gore, 1997, p. 308). They found that also found that academic self-concept is a better predictor of grades/performance. In addition, Bong and Clark (1990) posited

Self-concept is hence more differentiated, containing descriptive, evaluative, and affective content, molded against single or multiple reference frames. Self-efficacy judgment, on the other hand, relies most heavily on one's past mastery

experiences...One of the major differences between academic self-concept and self-efficacy...appears to be the relative weight assigned to social comparative information when judging one's competence. (p. 144-145)

As noted in Reynolds' factor analysis of the Academic Self-Concept scale, academic self-concept includes domains that involve peer evaluation and self-evaluation with external standards, which supports that academic self-concept has a social facet. There has also been debate in the field of education about the relationship between self-esteem and academic concept. Although self-esteem is an important part of adolescent development (Berk, 2012), it is not linked to academic self-concept or achievement (Marsh & O'Mara, 2008). Marsh and Craven (2008) also indicated that various academic outcomes have been "systematically related to academic self-concept but nearly unrelated to...global self-esteem...(p. 544). Research has indicated that academic self-concept is one of many important factors in decisions about education.

Academic Self-Concept and Academic Achievement

Academic achievement has been found to be related to academic self-concept (Gerardi, 1990; Lyon, 1993; Marsh & O'Mara, 2008; Muijs, 1997). Academic achievement has included GPA and school grades in many studies. Muijs (1997) found that academic self-concept and academic achievement were strong predictors of each other. Marsh and O'Mara (2008) reexamined data from the 1966 Youth in Transition database and found that academic self-concept and academic achievement have positive reciprocal effects on school grades and educational attainment. A study conducted by Lyon (1993) supported the fact that academic self-concept and achievement were more correlated with one another than general self-concept and achievement. Marsh and

Craven (2006) asserted that academic self-concept and performance are "...mutually reinforcing constructs," each having an impact on the other and that as self-concept improves so will performance and vice versa (p. 159). With such a strong link to academic achievement, academic self-concept is a variable of interest in the success of minority students.

Racial differences in Academic Self-Concept and Achievement

Extensive research has been done on the relationship between academic self-concept and academic achievement in African Americans (Awad, 2007; Cokley, 2000 & 2002; Cokley & Chapman, 2008; Gerardi, 1990; Okeke, Howard, & Kurtz-Costes, 2009). In a sample of 313 African American college students, Awad (2007) found that "...individuals who have positive attitudes toward school and their scholastic abilities are more likely to perform better in their classes" (p. 201). Cokley (2002) expounded findings on academic self-concept by comparing a sample of African American college students enrolled at a historically Black College or University (HBCU) to a sample of African American college students enrolled at a Predominately White College or University (PWCU). For students at HBCUs, academic self-concept was best predicted by GPA and having quality interactions with faculty, and was higher than students at PWCUs.

As noted previously, there is a positive link between academic achievement and racial/ethnic identity (Altschul, Oyserman, & Bybee, 2006; Ong, Phinney, & Dennis, 2006; Oyserman, Harrison, & Bybee, 2001; Rowley, 1996; Zarate, Bhimji, & Reese, 2005). However, in one study, the direct link between academic achievement and racial/ethnic identity was challenged. Cokley and Chapman (2008) found that ethnic

identity was not directly related to GPA, or academic achievement. However, ethnic identity was indirectly related to GPA through the participants' academic self-concept due to the participants' academic self-concept being mediated by ethnicity. Furthermore, the authors found that higher ethnic identity predicted higher academic self-concept in their sample of African American college students.

Cokley, Komarraju, King, Cunningham, and Muhammad (2003) conducted a comparative factor analysis of academic self-concept in African American students and Caucasian American students using the Academic Self-Concept Scale, originally created by Reynolds. Cokley et al. (2003) looked at the factor distribution of African American and Caucasian students to examine their natural factor loadings. Their analysis revealed that African Americans did not fall within the traditional seven-factor structure. Instead, African Americans had an added factor related to their negative performance expectations. For the Caucasian sample, Cokley et al. (2003) found that the seven-factor analysis fit and that the Caucasian sample believed that the amount of effort they put into their academics was directly related to obtaining good grades. However, the African American sample did not believe that effort resulted in good grades, instead they felt that others' negative expectations of them influenced their grades as well.

The research on academic self-concept in Latino/Latina students has been less extensive. Most studies have included a small sample of Latino/Latina and Native American students or have not differentiated results based on race (Gerardi, 1990; Lent, Brown, & Gore, 1997). Gerardi's (1990) study included a sample that was 30% Hispanic, 57% African American, 5% Asian, and 4% Caucasian that found that the best predictor of academic success is academic self-concept. Kenny and McEachern (2009) included a

sample of 60% Hispanic students in elementary school and sought to compare total self-concept, which included a domain of academic self-concept, of Hispanic children, to Black and White children. Their results were among the few that supported that Latino/Latina children have higher self-concept than Black children. In a comparable study, Bordes-Edgar, Arredondo, Kurpius, and Rund (2011) looked at self-beliefs of Latino/Latina students. Self-beliefs, in this study, were defined as valuing of education and educational self-efficacy and were strongly related to decisions about staying in school (Bordes et al., 2011). Self-beliefs were also found to be a significant predictor of GPA for Hispanic students (Robinson-Kurpius, Payakkakom, Rayle, Chee, & Arredondo, 2008).

Native American samples are even less researched in regards to studies that explore academic self-concept. Again studies have not focused on academic self-concept specifically but instead on self-beliefs. In a study of 41 Native American students, Gloria and Robinson-Kurpius (2001) showed that self-beliefs were not the best predictor of academic persistence but that social support was the biggest predictor of the decision to continue academic endeavors. Academic achievement in Native Americans has been found to be unrelated to other factors that have previously been supported in other minority groups. Robinson-Kurpius et al. (2011) did not find a link between self-beliefs and the decision to continue education, whereas they did find a link in their Hispanic sample of students. Due to the unique attributes of Native American culture, more influencing factors need to be explored to incorporate a more holistic approach to understanding academic achievement and persistence.

In summary, academic self-concept is mediated by ethnicity. For African Americans, how they perceive themselves academically is directly related to how well they do in school. However, outside factors such as having an external locus of control and satisfying relationships with teachers, affect the level of academic self-concept for African American students. In Hispanic samples, students experienced higher academic self-concepts than African American students and generally had stronger beliefs in themselves. Lastly, Native American students experience higher academic self-concept when they are provided social support from within their community.

Sense of School Belonging

Definition and Relevancy

In adolescence, children begin to attend to their feelings of peer and environmental belongingness (Woolfolk & Perry, 2012). On average, children between the ages of six to 12 spend 32 to 33 hours per week in school (Hofferth & Sandberg, 2000), making the school environment one of the most influential milieus for academic and social development. Goodenow (1993b), author of the *Psychological Sense of School Belonging scale*, defined school belonging as “the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment” (p. 80). Similarly, Woolfolk and Perry (2012) discussed the concept of school attachment, which is related to students’ feelings of connectedness and belonging in their school and highlight that as adolescents pull away from their families they will look to school attachments more for support.

The lack of a sense of school belonging has been linked to detrimental outcomes for children and adolescents. Hagborg (1994) gathered that low scores on sense of school

belonging measures were connected to being more emotionally distressed than students that scored higher on the measure. Additionally, Woolfolk and Perry (2012) highlighted several consequences associated with students not having a sense of school belonging such as drop-out, low self-esteem, and higher rates of delinquency and engagement in risk taking behaviors such as drug use and sexual activity. Lower levels of school belonging were also found to be associated with absenteeism and affected academic motivation (Sanchez et al., 2005). Self-worth has also been found to be positively affected by sense of school belonging (Pittman & Richmond, 2007).

According to the research, school belonging has several dimensions: teacher and school characteristics, peer interactions, and student's view of self (Faircloth & Hamm, 2005; Freeman, Anderman, & Jensen, 2007; Morrison, Cosden, O'Farrel, & Campos, 2003; Osterman, 2000; Powel & Arriola, 2003; Roeser, Midgley, & Urdan, 1996). Each dimension of school belonging contributes to the overall sense that individuals are wanted, respected, and feel comfortable in their school environment.

Teacher and characteristics relate to the type of interaction and support given to students. Freeman, Anderman, and Jensen (2007) conducted a study involving undergraduate students that found that sense of school belonging was positively related to their perceptions of instructors being helpful, supportive, enthusiastic, friendly, and organized. Similarly, Roeser, Midgley, and Urdan (1996) found that caring, supportive, and rewarding teachers and school environments led to a higher sense of school belonging in middle school students. Their study also found that positive relationships with teachers were related to more positive affect in students, which in turn was related to students feeling more academically self-efficacious. At the college level, school

belongingness was increased by faculty members who were found to be supportive, caring, and compassionate towards students (Hoffman, Richmond, Morrow, & Salomone, 2003).

A second dimension of school belonging emerges as peer relationships in adolescence advance to the forefront (Woolfolk & Perry, 2012). During adolescence, young adults begin to pull away from their parents and instead look to their peers for acceptance, support, and validation. This shift plays out largely in the school setting; due to the large amount of time adolescents spend in that environment. In elementary school students, Morrison, Cosden, O'Farrel, and Campos (2003) determined that a sense of school belonging was linked to how their peers viewed them. Moreover, elementary students in this study felt a stronger sense of school belonging when they viewed their peer relationships positively. Research indicates that for college freshman, being socially accepted and supported by peers was most strongly correlated with feelings of school belonging (Freedman, Anderman, & Jensen, 2007).

A student's perception of him or herself also contributes to the multifaceted definition of school belonging. According to Osterman (2000), how one views him or herself as a student greatly affects the student's perception of school belonging. Through an extensive meta-analysis of recent literature, Osterman (2000) found that school belongingness was linked to self-esteem, self-efficacy, and quality of life for students. Pittman and Richmond (2007) also found support for higher levels of self-worth when partnered with a greater sense of school belonging.

Racial/Ethnic Differences

Research has indicated that racial differences in have been found in sense of school belonging for students (Anderman, 2002; Faircloth & Ham, 2005; Johnson, Solner, Leonard, & Alvarez, 2007; Morrison et al., 2003; Sanchez, Colon, & Esparza, 2005). Johnson, Solner, Leonard, and Alvarez (2007) conducted a study to explore school belonging in African American, Asian, Hispanic, and White students. They found that White students expressed the highest level of school belongingness of all the ethnic groups. Likewise, Anderman (2000) found that White students had higher perceived school belongingness than Black and Native American students.

Several dimensions of school belonging vary in importance for minority students. For African American high school students, relationships with teachers and involvement in school activities were linked to school belonging (Faircloth & Hamm, 2005). In addition, research indicated that ethnicity plays a large mediating factor in school belonging (Anderman, 2002). For Latino/Latina high school students, relationships with teachers, involvement in school activities, and involvement with peers were linked to school belonging (Faircloth & Hamm, 2005). Latino/Latina students' sense of school belonging was also predicted by how their peers view them (Morrison, et al., 2003).

Impact on academic considerations

Academic achievement and school belongingness have been found to be linked in previous research studies (Faircloth & Hamm, 2005; Hagborg, 1994; Irvin, Meece, Byun, Farmer, & Hutchins, 2011; Pittman & Richmond, 2007; Sanchez et al., 2005). Students with higher levels of school belonging often earn higher grades (Hagborg, 1994; Pittman & Richmond, 2007). Research indicates that a sense of positive school belonging is also related to overall academic success (Faircloth & Hamm, 2005). Sanchez et al. (2005)

included academic motivation, lower rates of absenteeism, and academic effort as dimensions of academic success. School belonging has also been attributed to better levels of school adjustment and academic competence (Freeman et al., 2007; Pittman & Richmond, 2007).

Sex

Research indicates that clear disparities exist between males and females regarding many facets of higher education. In fact, the National Center for Educational Statistics published data showing that of all bachelor degrees issued in 2009, 57% went to females. The difference becomes more pronounced when considering ethnic and sex differences. African American women earned 65% of the 9.8% of bachelor degrees issued to African Americans (NCES, 2011). Likewise, Hispanic women earned 60% of the 8.1% of bachelor degrees issued to Hispanic students. Women are expected to continue surpassing men in educational achievement despite being faced with a multitude of barriers such as raising children, often on their own, and earning lower incomes than men (Peter & Horn, 2005). The divergence in achievement by sex often becomes apparent during secondary education. In high school, men dropout more than women by 2% (NCES, 2011).

Differences are present in the way that men and women conceptualize their ethnicity. Chae (2000) found that females scored significantly higher in ethnic identity than males when given Phinney's Multigroup Ethnic Identity Measure. Umana-Taylor et al. (2009) looked at the three components of ethnic identity that included: exploration (the extent to which an individual has explored their ethnicity), resolution (the extent to which an individual clearly understands their ethnicity), and affirmation (the extent to

which an individual experiences positive feelings and thoughts about their ethnicity). They found that the Latina females in their study made gains in exploration, resolution, and affirmation whereas males only gained in affirmation; gains made in the area of exploration were found to be related to gains in self-esteem. Their study lent support to the fact that females are actively engaged in exploring their ethnicity as well as affirm their ethnicity earlier than males.

Research has shown that a greater sense of ethnicity is related to gains in academic areas (Cokley & Moore, 2007). Increases in GPA were correlated in women with higher ethnic identities (Cokley & Moore, 2007). In addition, Cokley & Moore (2007) found that African American men more often devalued academic success more than African American men, a phenomenon that has often been labeled as *academic disidentification*. Osborne (1997) defined academic disidentification as a disconnect in the relationship between “academic self-esteem and global self-esteem” (p. 728), which leads to a lack of motivation or interest in academic success. African American males are at the greatest risk of academic disidentification, whereas, African American and Latina females disidentify to a much lesser degree (Osborne, 1997). This is significant because African American males have the higher drop-out rate (10.3%; NCES, 2011).

Sense of school belonging and academic self-concept also vary across sex, although varying studies do not agree on those differences. Although Sanchez et al. (2005) did not find sex differences for sense of school belonging in their sample of 12th grade Latino/Latina students, Johnson et al. (2007) found that being female was a significant predictor of sense of school belonging in their sample of Latino/Latina students. Additionally, Pittman and Richmond (2007) and Hagborg (1994) found support

for female middle and high school students having a higher sense of school belonging than males in their racially diverse sample. As mentioned in previous sections, having a greater sense of school belonging has been linked to more positive academic outcomes such as GPA and achievement, giving female students another advantage over their male counterparts. Regarding academic self-concept, Cokely, McClain, Jones, and Johnson (2011) did not find significant differences based on sex. In a previous study conducted by Cokley (2000) that included African American college students, sex differences were not found for academic self-concept. Because higher academic self-concept has been related to higher GPAs, its importance in higher education should be further explored.

Previous Research

As the above literature review suggests, several research studies have examined what factors are important in the decision to enter higher education for minorities. These factors have varied from racial identity, sex, and socioeconomic status to self-concept, self-efficacy, confidence, and disengagement. However, few studies have attempted to explore what factors may be predictive for several minority groups simultaneously. In fact, most of the research reviewed used correlational methodologies that sought to explore contributing factors (Phinney, Cantu, & Kurtz, 1997). The current study attempted to address this gap by using a sample of minority students that are currently enrolled in postsecondary higher education to retroactively explore what factors may have been predictive. The current study also used a logistic regression analysis that attempted to predict the likelihood that an event will occur.

Limitations in previous research also involved in sampling. Sheperis, Young, and Daniels (2010) encouraged researchers to ensure that participants are more representative

of minority groups. Research reviewed in preparation for the current study have been plagued by small sample size and small numbers of minority participants. In some studies reviewed, the participants used were entirely White, thereby limiting the results because they cannot be extrapolated to include minority groups. In other cases, studies had a small number of African Americans, and even smaller numbers of Hispanic participants.

Finally, previous research in the area of ethnicity, academic self-concept, and sense of school belonging utilized younger aged participants. Several studies used children as young as 4th grade and middle school children. The search for identity becomes the main psychosocial goal during adolescence (Woolfolk & Perry, 2012). During this time, adolescents and young adults are actively exploring their sense of self, how they want to exist in the world, and how their individual differences define them. It seems important that participants be surveyed during the peak of their identity exploration and commitment phases instead of during early or middle childhood before they have had an opportunity to explore their identity. This study explored participants who were recent high school graduates and may have explored, committed, or achieved a mature identity (Woolfolk & Perry, 2012).

Summary

The importance of obtaining some form of postsecondary education or training has been well documented. According to the National Center for Educational Statistics (2011), in 2009 a high school graduate made \$18,100 (males) and \$15,000 (females) less than individuals with a bachelor's degree. Individuals who graduated from high school and obtained an associate degree make on average \$8,810 more than just high school graduates. In addition, most jobs come with other benefits such as health insurance and

vacation time that improve the quality of life for workers. Therefore, efforts need to be made to increase the enrollment of minorities in postsecondary education and/or training.

Minorities, by the nature of their ethnicity, are multifarious and unique which makes identifying their challenges difficult. Ethnicity as a portion of individual or collective identity can be a source of strength, connecting individuals to their heritage and culture, or it can be a source of contention and confusion for minorities (Ong, 2006; Phinney et al., 1997). During adolescence and young adulthood, as the individual search for identity comes to the forefront, exploration of ethnicity is an important process for minority youth. Phinney's (1989) model of minority ethnic identity presented attempts to incorporate a variety of ethnicities.

CHAPTER THREE

METHODOLOGY

Purpose of Study

Compared to other racial/ethnic groups, minority students disproportionately enroll and graduate from institutions of higher education (NCES, 2011). Literature suggests that several factors influence the enrollment and retention of minorities such as self-esteem, academic self-concept, racial identity, sex, and sense of school belonging (Booker, 2006; Coker, 2003; Horvat, 1997; Neville, Heppner, & Wang, 1997; Rowley, 1996; Rowley, Sellers, Chavous, & Smith, 1998).

The purpose of this study was to explore the relationship between sex, GPA, racial/ethnic identity, academic self-concept, and sense of school belonging for African American and Latino/Latina students with level of enrollment at postsecondary schools (two-year community college or four-year university). Interactions between the predictor variables and enrolling in postsecondary education were also examined. Binary logistic regression to predict the odds of enrollment at each level of postsecondary education was used. This researcher sought to further the literature regarding the enrollment and retention strategies for minority students.

Research Design

The study employed a retrospective, correlational design. Several assessments were administered via an online survey format to study participants and alternatively via in-person collection by the primary researcher. Participants were asked to answer the assessments based on recollection of their high school experiences. The sample was selected based on criterion and convenience sampling at various postsecondary

educational settings in Virginia that included community colleges and universities, and originally included vocational schools. However, due to several failed attempts at contacting several vocational schools in Virginia, the vocational school level of enrollment was removed from the study. A sample of 180 English-speaking African American and 180 English-speaking Latino/Latina students who were between the ages of 18-20 was originally sought. In addition to the Academic Self-Concept Scale, Multigroup Ethnic Identity Measure, and the Psychological Sense of School Membership scale, demographic and self-report data was also collected.

Students were accessed in the following ways. First, using a list of accredited postsecondary institutions provided by the Council for Higher Education Accreditation (CHEA), the primary researcher contacted all four-year public universities and colleges as well as all two-year community colleges in Virginia. Then, directors of the multicultural office at each of the schools were emailed a letter describing the study as well as the informed consent/participant notification form. When surveys could not be distributed via online methods or by sending students an email with the survey link, the primary researcher distributed the survey packet in-person at the several schools.

Research Questions and Hypothesis

Research Question 1: What are the levels (i.e. distribution of scores) ethnic identity, academic self-concept, and sense of school belonging among African American and Latino/Latina students?

H₁: Latino/Latina students will have significantly higher ethnic identity, academic self-concept, and sense of school belonging scores than African Americans.

Research Question 2: What are the bivariate correlations among all of the variables?

- a. What are the relationships between ethnic identity, academic self-concept, sense of school belonging, sex, GPA, and enrollment at various levels of postsecondary education?

H₂: There will be a significant relationship between ethnic identity, academic self-concept, and sense of school belonging with enrollment at various levels of postsecondary education.

- b. How does high school GPA relate to enrollment at various levels of postsecondary education?

H₃: There will be a significant relationship between high school GPA and the level of enrollment in postsecondary education (two-year community college or four-year university).

Research Question 3: What variables best predict enrollment in various levels of postsecondary education?

H₄: Enrollment in postsecondary education will be predicted by ethnic identity, sense of school belonging, academic self-concept, sex, and GPA.

Research Question 4: What main effects and/or interactions exist between ethnic identity, academic self-concept, and sense of school belonging, sex, and GPA and enrollment at various levels of postsecondary education?

H₅: There will be an individual main effect of sex, GPA, ethnic identity, academic self-concept, and sense of school belonging scores and enrollment in postsecondary education.

H₆: There will be a significant interaction between ethnic identity, academic self-concept, and sense of school belonging scores and enrollment in postsecondary education.

Variables

The independent or predictor variables were scores on the Multigroup Ethnic Identity Measure, scores on the Academic Self-Concept Scale, and scores on the Psychological Sense of School Membership Scale. The additional variables of sex and GPA were also examined. The dependent variable was enrollment at an institution of higher education (two-year community college or four-year university).

Participants

The study utilized African American and Latino/Latina students enrolled in community colleges and universities in Virginia. Participants were between the ages of 18-20 and were currently enrolled in their first year of postsecondary education. This age range was selected to reduce recall bias and keep participants close to their experiences as high school students. Additionally, participants had to be able to write and read English proficiently, as the survey instruments were administered in English. As highlighted in the literature review, Native American students have very unique factors that influence their enrollment in postsecondary education and would best be examined separately vs. comparatively. Assuming a moderate effect size at $\rho = .80$, the study needed a minimum of 143 participants to run the Wald statistic which uses the chi-square distribution (Cohen, 1992; Field, 2009). According to Cohen (1992) an appropriate level of power is .80, which allows the researcher to obtain a realistic sample size and reduces the risk of a Type II error. LeBlanc and Fitzgerald (2000) recommended an $n > 30$ per each predictor

variable, totaling 180 participants needed for this study when using logistic regression. Additionally, Hosmer and Lemeshow (2000) recommend that a minimum of ten cases be used per independent variable when using logistic regression. A sample size of 360, 180 African American and 180 Latino/Latina students was sought for the purposes of this study. Although it is difficult to estimate true effect size with logistic regression, logistic regression uses the *Pseudo R-square* option to approximate the effect sizes (Field, 2009). SPSS provided Cox and Snell, McFadden's, and Nagelkerke measures which all provide valuable information about effect sizes. Participants were recruited using criterion and convenience sampling strategies and were focused on students of African American and Latino/Latina descent.

Data Collection Procedures

The primary researcher submitted the research proposal to the Institutional Review Board (IRB) in August 2012 for review. The researcher applied for the exemption from state law based on not using participants under the age of 18, no foreseeable harm being imposed by taking part in this study, and exemption category 6.2 which provides exemption for studies that involve the use of educational tests and survey procedures. The study was approved by Old Dominion University's IRB on August 23, 2012, with a data collection approval date of September 6, 2012.

Step 1: Identifying schools at each level of postsecondary education.

Using a list of accredited postsecondary institutions provided by the Council for Higher Education Accreditation (CHEA), the primary researcher compiled a list of all public two-year and four-year colleges in Virginia. The CHEA "...is a private, nonprofit national organization that coordinates accreditation activity in the United States. CHEA

represents more than 3,000 colleges and universities and 59 national, regional and specialized accreditors” (Eaton, 2011, p. 2).

Step 2: Gaining access to student populations at identified schools.

On October 1, 2012, the researcher sent an initial batch of emails to the directors of the Office of Diversity/Multiculturalism at every public four-year university in Virginia, a total of 14 schools. The initial email contained an explanation of the survey, an informed consent document, and the proposed letter to research participants (see Appendix E). Of the 14 schools contacted, eight schools responded to the request to distribute dissertation survey email. Each of the eight schools required the researcher to apply for and be approved by their schools IRB. Two schools declined participation, and four schools did not respond to the request despite several phone and email contacts. The survey was approved for distribution at the following four-year universities: Virginia Commonwealth University, Virginia Polytechnic University, Christopher Newport University, Longwood University, Norfolk State University, Old Dominion University, Radford University, and Richard Bland College. In January 2013, reminder emails were sent to the schools that agreed to participate in the study.

Additionally, the researcher contacted Tidewater Community College- Virginia Beach campus (a local community college) on October 3, 2012 to request that the survey be distributed to students. The contact forwarded the link to the survey to several of the Freshman Orientation teachers for them to forward directly to their students. On November 27, 2012, the researcher sent an initial batch of emails to the directors of assessment at every two-year community college site in Virginia, a total of 23 schools. Of the 23 schools contacted, three schools approved the survey, one declined participation,

and 19 did not respond to the request despite several email follow-ups and attempted phone contacts. The survey was approved for distribution at the following two-year colleges: Blue Ridge Community College, Rappahannock Community College, and Tidewater Community College- Virginia Beach campus only.

Step 3: Distribution of the research materials.

Once approved, the researcher gave each school contact the option to either electronically disseminate the survey packet by sending a link of the survey to their students or by providing the researcher with a list of emails to contact students individually. The actual survey packet to be emailed electronically to participants contained a cover letter for participants, the informed consent document, and the instruments. The researcher used an online survey website, SurveyGizmo, to distribute the informed consent, the instruments, and demographic questionnaire.

All schools, with the exception of Longwood University, sent the link to the survey directly to the students at their schools. None of the schools provided the number of students that the email was sent therefore not allowing for a response rate calculation. The researcher also advertised on the student announcements forum at Old Dominion University, Christopher Newport University, and Norfolk State University. The student announcement forum sent a list of daily announcements to all students at the university, which included a link to the survey. In order to increase survey participation, the researcher advertised on the daily announcements two times at Christopher Newport University and three times at Old Dominion University. Additionally, the researcher requested that the schools resend a link of the survey to their students in January 2013, two weeks after the new school semester began. As an additional measure to increase

survey participation, the researcher conducted in-person survey distribution at Old Dominion University on 1/25/2013, at Virginia Commonwealth University on 1/28/2013, at Christopher Newport University on 2/7/2013, and at Tidewater Community College (Virginia Beach campus) on 2/4/2013, 2/5/2013, 2/12/2013, and 2/13/2013. The primary researcher worked with several course instructors at Tidewater Community College (Virginia Beach campus) to administer the survey during class time.

In addition, to increase participation, the researcher offered three (3) chances to win a \$25 gift card, which were distributed in April 2013. No identifying information was collected. Online survey participation data was collected using a password-protected, electronic questionnaire format. Participants that voluntarily selected to enter the random \$25.00 gift card drawings provided their email addresses after completing the survey. There was no link to participants' email addresses and their responses to the questionnaires. Only the primary researcher and the dissertation committee had access to the database. In-person surveys were kept securely in a file cabinet. Participants who took the survey in-person provided their email addresses which were kept separately from their survey responses. No identifying information was collected for the in-person distribution methods. There were no time constraints for in-person or online survey methods.

Step 4: Alternative strategies to data collection.

As an alternative strategy, the researcher utilized Facebook in an attempt to reach the needed number of participants. Using Facebook, the researcher posted a link to the survey packet on the pages of various African American and Latino/Latina-based student organizations. The researcher could only post the link on "open" group pages. The

message posted on the various African American and Latino/Latina-based organizations was the same message sent to all other participants via email (Appendix F). Tan (2010) highlighted several limitations common to recruiting participants using Facebook or other social media applications such as biasing the sample to only students who have access to computers and being limited to self-reported characteristics such as age, location, ethnicity etc. that may not be accurate. Despite the limitations, Tan (2010) found that using Facebook provided a wider reach of research participants and a faster response.

The administration of the instruments took 10-25 minutes to complete. The first instrument given was the demographic form. The second instrument administered was the Multigroup Ethnic Identity Measure (MEIM). The third instrument administered was the Psychological Sense of School Membership Scale (PSSM). The final instrument administered was the Academic Self-Concept Scale (ASCS). For participants who took the survey online, the last task was the option to enter their email address for a chance to win a gift card. After the administration of the in-person instruments, the primary researcher collected the packets from the participants.

Instrumentation

Instruments were distributed to participants in five sections: Section one was the informed consent document (which they either agreed to electronically or in-person). Section two was the demographic questionnaire. Section three was the Multigroup Ethnic Identity Measure (MEIM). Section four was the Psychological Sense of School Membership Scale (PSSM). Section five was the Academic Self-Concept Scale (ASCS).

Informed Consent

Section one of the administration of instruments consisted of the informed consent document (Appendix E). The document was agreed to electronically by choosing “yes” to agree to participate in the study or by choosing “no” to decline participation in the study. For participants who completed the survey in-person, the informed consent document required their signature for participation.

Demographic Questionnaire

Section two of the administration of instruments consisted of a demographic questionnaire (see Appendix A). A demographic questionnaire was used to collect information such as age, sex, high school GPA, and ethnicity. In addition, participants were asked to state whether they were enrolled at a two-year community college or four-year university.

Multigroup Ethnic Identity Measure (MEIM)

In section three of the administration of instruments, the Multigroup Ethnic Identity Measure (MEIM) was used. The complete MEIM consists of 12 items with two subscales: the ethnic identity exploration subscale and the commitment subscale (Phinney, 1992; Roberts et al., 1999). The ethnic identity exploration subscale of the MEIM (see Appendix B) contains seven items and measures the extent to which participants have explored, actively sought to learn about, and are involved with their ethnic group (Roberts et al., 1999). The commitment subscale contains five items and measures the degree to which participants have committed to an ethnic group. The MEIM uses a 5-point Likert-type scale with “1” equaling *strongly disagree* to “5” equaling *strongly agree* (Roberts et al., 1999). A sample question for the MEIM is, “I have a clear sense of my ethnic background and what it means for me.” Additionally, the MEIM asks

participants to fill in their ethnic group. The MEIM is scored by taking the mean of the 12 items of the overall score. The two subscales can also be independently scored by taking the mean of the scores for each subscale. Cronbach's alpha reliability for the overall MEIM is .85 (Roberts et al., 1999). For African Americans, the reliability has been found to be .85 and for Mexican and Central Americans has been found to be .81. Construct validity was established by administering the MEIM with an ethnically diverse sample of participants and finding that it differentiated across the various ethnic groups. Construct validity relates to the extent that a "test measures one or more dimensions of a theory or trait" (Wiersma & Jurs, 2009, p. 475). The MEIM is available for public use online. The author requests that any studies using the MEIM be reported to him upon final analysis.

Psychological Sense of School Membership Scale (PSSM)

Section four consisted of the Psychological Sense of School Membership Scale (PSSM). The PSSM (Goodenow, 1993b) is an 18-item instrument that measures the extent to which students feels accepted and included by others in their school environment (You, Ritchey, Furlong, Shochet, & Boman, 2011; Appendix D). The response format is a 5-point Likert-type scale, with 1= not at all true and 5= completely true. The PSSM was normed on subjects between 12-18 years of age but has been used with traditional, college-age participants in several studies (Freeman, Anderman, & Jensen, 2007; Hoffman et al., 2003; Johnson et al., 2007; Meeuwisse, Severiens, & Born, 2012; Pittman & Richmond, 2007). The Cronbach alpha ranges from .78 to .95. The test-retest reliability after four weeks was .78 (Hagborg, 1994) and after one year was found to be .56 for boys and .60 for girls (You et al., 2011). Construct validity was established by using contrasted group validation procedures, testing predictions about suburban vs.

urban students and various ethnically diverse populations using ANOVA. Scoring for the PSSM is done by reverse scoring five of the items; the higher the score the higher the sense of school belonging. The primary researcher obtained a License Agreement with John Wiley and Sons for the use of the PSSM (license number 2845550889181).

Academic Self-Concept Scale (ASCS)

Lastly in section five, the Academic Self-Concept Scale (ASCS) was administered to participants (Appendix C). This scale contains 40-items designed to measure the “academic facet of general self-concept” (Reynolds, Ramirez, Magrina, & Allen, 1980, p. 1013). The response format is “1” for strongly disagree to “4” for strongly agree. The ASCS has seven tentatively named scales: grade and effort dimension, study habits/organizational self-perceptions, peer evaluation of academic ability, self-confidence in academics, satisfaction with school, self-doubt regarding ability, and self-evaluation with external standards (Reynolds, 1988). The seven scales do provide individual scores; however, most research has utilized the global total scale score. Scoring for the ASCS is done by reverse scoring 18 of the item; higher ratings on the instrument indicate higher academic self-concept. In 1988, Reynolds validated the instrument on White, African American, and Latino/Latina students, by correlating the ASCS with student GPAs and their scores on the Rosenberg Self-Esteem Scale. The Cronbach’s alpha for the total scale is .91 (Reynolds et al., 1980). Criterion-related validity and predictive validity were established by comparing the ASCS to the Rosenberg Self-Esteem Scale and GPA (Reynolds, 1988; Reynolds et al., 1980). Divergent validity was established by examining the relationship of the ASCS and SAT, which found a low relationship (.22) between the two measures. The researcher sent an

email to Dr. William M. Reynolds, creator of the ASCS and received permission to use the scale.

Method

Data Analysis

SPSS 21.0 was utilized to analyze the data once all data collection procedures were completed. The data was downloaded from SurveyGizmo directly into SPSS. Data were then analyzed for completeness and partially completed surveys were removed. Using SPSS frequencies function, the demographic characteristics of survey participants was obtained, which included race/ethnicity, age, gender, GPA, and level of enrollment.

Research Questions and Hypotheses

Research Question 1: What are the levels (i.e. distribution of scores) of ethnic identity, academic self-concept, and sense of school belonging among African American and Latino/Latina students?

H₁: Latino/Latina students will have significantly higher ethnic identity, academic self-concept, and sense of school belonging scores than African Americans.

Hypothesis 1 (H₁) was analyzed by using descriptive statistics (means, ranges, and standard deviations) and a one-way ANOVA to compare group means on each instrument for statistically significant differences. Race served as the independent variable and the scores of each measure (MEIM, PSSM, and ASCS) served as the dependent variables.

Research Question 2: What are the bivariate correlations among all of the variables?

- a. What are the relationships between ethnic identity, academic self-concept, sense of school belonging, sex, GPA, and enrollment at various levels of postsecondary education?

H₂: There will be a significant relationship between ethnic identity, academic self-concept, and sense of school belonging with enrollment at various levels of postsecondary education.

- b. How does high school GPA relate to enrollment at various levels of postsecondary education?

H₃: There will be a significant relationship between high school GPA and the level of enrollment in postsecondary education (two-year community college or four-year university).

Hypotheses 2-3 (H₂-H₃) were analyzed using the Pearson product-moment correlational coefficient to determine if a relationship existed between the predictors and level of enrollment.

Research Question 3: What variables best predict enrollment in various levels of postsecondary education?

H₄: Enrollment in postsecondary education will be predicted by ethnic identity, sex, sense of school belonging, academic self-concept, sex, and GPA.

Hypothesis 4 (H₄) was analyzed using a binary logistic regression procedure. The level of enrollment, coded as 0 = four-year college and 1 = two-year college/reference group, served as the dichotomous dependent variable. The predictor variables were sex (coded as 1 = female/reference category, 0 = male), race (1 = Black/reference group, 0 = Latino/Latina), GPA, score on MEIM, score on PSSM, and score on ASCS.

Research Question 4: What main effects and/or interactions exist between ethnic identity, academic self-concept, and sense of school belonging, sex, and GPA and enrollment at various levels of postsecondary education?

H₅: There will be an individual main effect of sex, GPA, ethnic identity, academic self-concept, and sense of school belonging scores and enrollment in postsecondary education.

H₆: There will be a significant interaction between ethnic identity, academic self-concept, and sense of school belonging scores and enrollment in postsecondary education.

Hypothesis 6 was analyzed by using logistic regression to examine any possible interaction effects. Level of enrollment was the dependent variable and the predictors were the interaction terms: ZASCS* ZGPA, ZGPA * ZPSSM, ZGPA * ZMEIM, SEX * ZASCS, SEX * ZPSSM, SEX * ZMEIM, RACE * ZASCS, RACE * ZPSSM, RACE * ZMEIM, Age * ZASCS, Age * ZPSSM, Age * ZMEIM. Next, significant interactions were graphed using the regression equation.

Binary logic regression uses a dichotomous outcome variable with two levels (Kleinbaum & Klein, 2010). This analysis used nominal outcome variables, as the outcome variables do not have a significant natural ordering. Logistic regression is similar to multiple regression however the dependent or outcome variable must be categorical and dichotomous. The logistic regression model utilizes odds $[P/(1-P)]$ to represent the likelihood of an event occurring. For the purposes of this study, the primary researcher used SPSS to calculate: (1) the regression coefficient estimates; (2) the Wald statistic $[\beta/s.e.\beta]^2$, which tests the individual contribution of the predictor variables. The Wald statistic uses a chi-square distribution with one degree of freedom; (3) a log-likelihood statistic to assess the overall fit of the model to the data; and (4) the odds ratio which predicts the odds of an event occurring (Field, 2009); and (5) the 95% confidence

intervals. The predictors were entered into SPSS using the forced-entry method due to the order of predictor variables not having any rank. Data for the dependent variable was collected using the participants' type of enrollment (two-year community college or four-year university). The response to this question was dummy coded in SPSS as 0 = four-year university and 1 = two-year community college. Data for the predictor/independent variables was collected using the scores from the various instruments (MEIM, PSSM, ASCS, GPA, race (coded as 1 = Black and 2 = Latino/Latina) and sex (coded as 0 = male 1 = female).

Binary logistic regression has several assumptions that must be met in order for accurate interpretation of the results. The first assumption was that linearity which assumes that there should be a linear relationship between the continuous predictor (independent) variables and the logit of outcome (dependent) variable (Field, 2009). Logit is related to the log of the log-likelihood that the dependent variable will occur (Field, 2009). The second assumption was that the data cases should not be related to one another; this is called independence of errors. The last assumption that must be met is multicollinearity. Logistic regression is vulnerable to collinearity bias and must be tested (Field, 2009). Multicollinearity occurs when two or more predictor variables are very closely linearly related (Field, 2009). If the variables are too closely related, then the results will be incorrectly estimated. In addition, logistic regression requires large samples sizes of at least 100 and as the number of independent or predictor variables increase, so should the sample size (LeBlanc & Fitzgerald, 2001). This assumption was met at the four-year university level with a sample size of 182. However, at the two-year community college level, there were only 81 participants.

To avoid violating the assumptions, several statistical analyses were conducted. To test for multicollinearity, the researcher assessed the collinearity of each predictor variable to see if they are strongly correlated ($< .80$). Next, the researcher examined the variance inflation factor (VIF) and tolerance statistics to assess for acceptable values. Larger values of the VIF and smaller values of the tolerance are generally related to collinearity issues (Field, 2009). The researcher also tested for outliers in the data and removed outliers from the sample.

The researcher also examined the interactions between the levels of predictor variables and the outcome variables. Using the regression equation: $Y = a + b_1x + b_2z + \dots + b_3xz$, possible interactions were graphed. For example, hypothetically, high and low scores on the Academic Self-Concept scale will be graphed against the likelihood of enrolling in a type of postsecondary institution to examine how the varying level of scores (high vs. low) interact with the type of postsecondary institution.

Limitations

Due to limited availability of funding and time, participants were only recruited from within the state of Virginia. The study only focused on African American and Latino/Latina student enrollment in higher education and not other identified minority groups due their underrepresentation in higher education.

Internal validity. Internal validity threats deal with the assumption that the independent variables are somehow linked to the outcome or dependent variable. Internal validity explores the influence of various extraneous variables that may have an unaccounted for effect of the dependent variable. In reference to internal validity threats, the study was vulnerable to several types of instrumentation and selection barriers due to

the participants being in an academic setting. Academic settings have unique challenges due to unforeseen events that may affect data collection, such as unexpected school closures or social-cultural events that relate to the content being studied. Although historical events cannot be predicted, the primary researcher will schedule data collection times in advance and utilize online survey distribution to avoid losing data to unforeseen circumstances.

The study used several different instruments to measure the independent variables, which were vulnerable to variance in their administration and collection techniques. Although the researcher tried to control the variance in administration, subtle differences were observed due to the varied academic environments during the face to face administration. In addition, particularly long questionnaires may lead participants to believe that all remaining questionnaires will also be long, thereby causing them to forfeit completing the survey or fatigue. The administration of the instruments was standardized so that it can be replicated by other studies. The participants were given instruments in order: informed consent, demographic questionnaire, the ethnic identity measure, school belonging measure, and lastly the academic self-concept measure. Conversely, the collection of the instruments and subsequent scoring was standardized for consistency using SPSS 21.0 procedures. The study was also at risk for selection bias threats. The participants may have grouped around certain similar criterion such as being academically oriented therefore more likely to attend a postsecondary school, which may have affected the relationship between the independent and dependent variable. This was not be able to be avoided and is a limitation for extrapolation.

The primary researcher collected data at one-time from participants, not collecting test-retest data, in order to avoid maturation and mortality concerns in the study. However, collecting data one-time during the course of a study carried limitations such as the potential for having missing data on the various instruments or the participants choosing responses arbitrarily and not being able to retest to check for reliability. All survey packets with missing data were removed from the final analysis. The primary researcher counteracted these issues by thoroughly explaining the directions for each instrument being available during survey administration to assist participants with questions. In addition, there were several limitations to online distribution of instruments such as not reaching the required sample size, inability to verify that participants met the criteria for participating in the study, and being unavailable to answer questions for the participants.

External validity. External validity threats refer to whether or not the results of this study can be generalized to other populations and situations (Wiersma & Jurs, 2009). The study was limited by geographical location, as all of the participants were from Virginia, limiting generalizability of the results to other populations. Small sample sizes may also have limited the generalizability of the study. In general, larger sample sizes are more desirable and yield greater statistical power (Cohen, 1992). An interaction effect of testing occurs when participants perform differently based on a pretest. This was not expected to be a threat to the current study due to no pretesting occurring. In addition, the study was not be experimental in nature; therefore, multiple-treatment interference and reactive effects of experimental arrangements were not threats to external validity (Wiersma & Jurs, 2009). At times, certain characteristics of participants may interact

with the variables being measured, which can lead to a selection-bias interference. These characteristics can be prior experiences, personality traits, or other personal nuances that may interact with the study. The primary researcher is also a member of the group being studied (African-American minority who has engaged in postsecondary education); therefore the study may have been susceptible to unintentional experimenter effects. Lastly, if the variables in the study are were adequately defined and operationalized, replication of the study may be difficult for other future researchers. Conversely, if the variables were too rigidly defined, replication may be impossible. Threats to external validity were minimized by: (1) using “blind” collection procedures to minimize experimenter effects with online survey distribution and by training research assistants to assist in data collection during in-person data collection, (2) carefully defining and operationalizing of all variables being studied, and (3) careful selection of participants by using a diverse participant pool and sampling strategies.

Summary

This chapter explained the methodology involved in this study that sought to explore the importance of sex, GPA, racial/ethnic identity, academic self-concept, and sense of school belonging for minority students who have enrolled in a postsecondary schools. An explanation of the research questions and hypotheses were provided, including a plan for data analysis. This chapter included a brief discussion of the key concepts of binomial logistic regression and interactions. Also, a description of the potential participants and corresponding data collection procedures were reviewed. The types of instruments that were utilized in the study were explained in reference to their use, reliability, and validity. Lastly, the researcher provided a discussion of the potential

limitations of the study. Several appendices are provided for review of the instruments utilized in this chapter.

CHAPTER FOUR

RESULTS

The purpose of this study was to explore the relationship between sex, GPA, racial/ethnic identity, academic self-concept, and sense of school belonging with level of enrollment at postsecondary schools (two-year community college or four-year university) for African American and Latino/Latina students. The study employed a non-experimental survey design that incorporated both online and in-person survey distribution methods to obtain quantitative data regarding the relationship between the level of enrollment at two levels of postsecondary education (two-year community college or four-year university) and scores on several assessments (MEIM, PSSM, and ASCS). This chapter summarizes the demographic information of the sample, provides an overview of the scoring procedure and sample distribution for the MEIM, PSSM, and the ASCS, and describes the results of the study for each research question.

Sample and Data Collection

The focal population for this study was African American and Latino/Latina students between the ages of 18-20 who were enrolled in two-year community colleges or four-year universities and colleges in the state of Virginia. A total of 454 participants responded to the survey both online and in-person between October 2012 and February 2013. Participants did not have to complete the survey once they began, allowing students to partially complete the survey. A total of 92 participants, 20.2%, started the survey but did not complete it. Of the 362 remaining participants, an additional 99 were removed from the survey because they were not African American, Latino/Latina, or

between the ages of 18-20, leaving a total participant count of 263 for the study, before data cleaning procedure were implemented.

Demographic Information

The first inventory administered to participants was the demographic questionnaire, which asked participants' age, sex, race/ethnicity, current city of residence, final high school GPA, and the type of postsecondary institution they are currently attending.

Age.

Due to the requirements of the study, only participants in the target range of 18-20 were retained. The largest number of respondents indicated their age as "19" ($n = 99$, 37.6%). The second largest group indicated their age as "18" ($n = 90$, 34.2%). The lowest number of respondents indicated that their age was "20" ($n = 74$, 28.1%). Table 2 illustrates data regarding the sample's age distribution.

Sex.

The majority of survey participants indicated their sex as female ($n = 193$, 73.4%). Seventy participants (26.6%) indicated their sex as male. Table 2 illustrates data regarding the sample's sex distribution.

Race.

African Americans represented the largest respondent group ($n = 214$, 81.4%). A total of 49 participants (18.6%) indicated that their race was Latino/Latina in the study. Table 2 illustrates data regarding the sample's race distribution.

GPA.

Participants were asked to indicate their final high school grade point average (GPA). GPAs ranged from 1.97 to 4.60 with the mean being 3.30. Figure 1 illustrates the range of GPAs reported by participants.

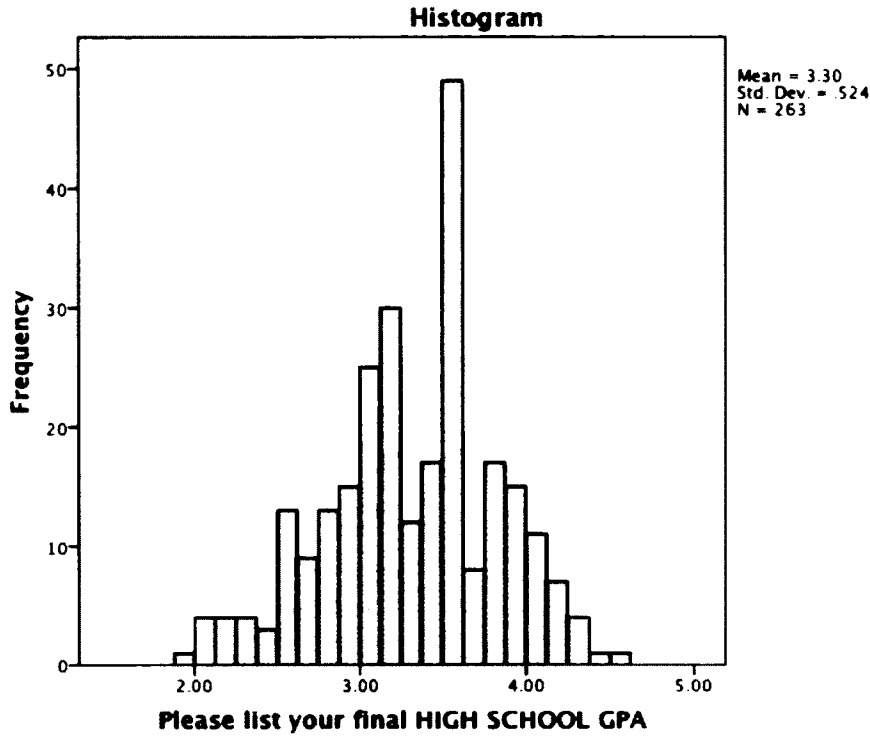


Figure 1. Distribution of GPAs of participants in this study.

Level of Postsecondary Education.

Regarding the overall level of postsecondary enrollments, participants from four-year universities had the largest response ($n = 182$, 69.2%). Eighty-one participants (30.85) indicated that they were enrolled in a two-year community college. Table 1 provides a summary of participant demographics by level of postsecondary enrollment.

Table 1
Summary Demographics by Level of Enrollment

Level of Enrollment	Race/Ethnicity			Total
	Black	Latino/Latina		
4-year	142	40		182
2-year	72	9		81
Total	214	49		263

Level of Enrollment	Sex		Total
	Male	Female	
4-year	45	137	182
2-year	25	56	81
Total	70	193	263

Level of Enrollment	Age			Total
	18	19	20	
4-year	62	67	53	182
2-year	28	32	21	81
Total	90	99	74	263

Summary of Participant Demographics.

The majority of the sample consisted of African American females ($n = 156$). African Americans responded more frequently to the survey ($n = 214$) than Latino/Latina students ($n = 49$). The majority of survey respondents were 19 years of age. The average GPA for survey participants was 3.30. Lastly, a larger number of students at four-year universities responded ($n = 182$) than students at two-year community colleges ($n = 81$). Table 2 provides an overall summary of participant demographics for the study.

Table 2
Summary Demographics for Sample

Characteristic	<i>n</i>	Percentage
Race/Ethnicity		
African American	214	81.4
Latino/Latina	49	18.6
Age (in years)		
18	90	34.2
19	99	37.6
20	74	28.1
Sex		
Male	90	26.6
Female	193	73.4
Level of Postsecondary Enrollment		
4-year	182	69.2
2-year	81	30.85
Total	263	100.0

Description of Instruments

This survey utilized three inventories: the Multigroup Ethnic Identity Measure (MEIM), the Psychological Sense of School Membership Scale (PSSM), and the Academic Self-Concept Scale (ASCS). Each inventory was scored using SPSS 21.0 software.

MEIM.

The MEIM consisted of 12 items (Appendix B). Scoring for the MEIM was completed by summing each of the 12 items, with higher scores indicating higher ethnic identity. The mean score for the MEIM was 59.64 (with a standard deviation of 14.63). Scores ranged from a minimum of 19.00 to a maximum of 90.00 for participants in this study. Scores from the MEIM were leptokurtic (-.53) and were slightly negatively skewed (-.078), as shown in Figure 2. The reliability of the measure was assessed by examining the Cronbach's alpha for the sample. The alpha coefficient can range from 0 to 1, and the overall reliability of the MEIM was .85.

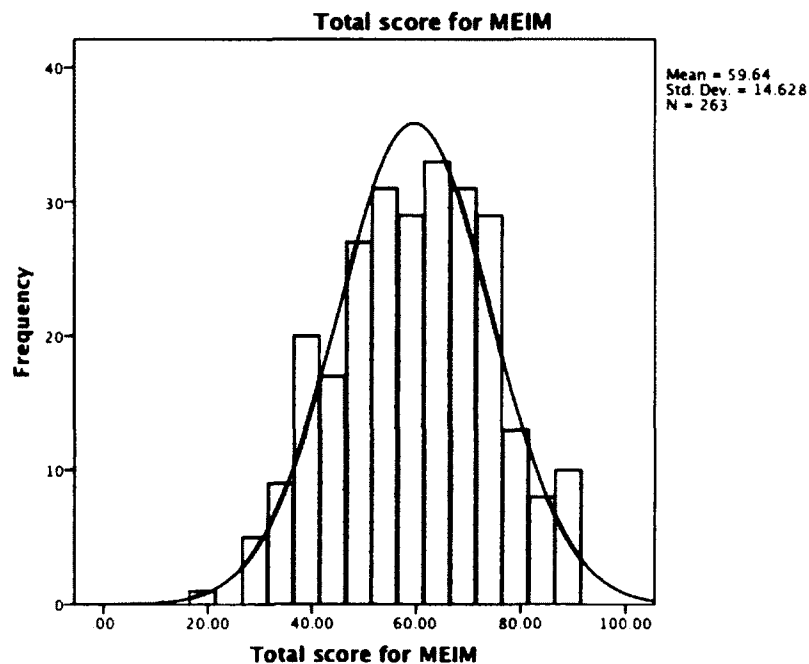


Figure 2. Distribution of participant's total MEIM scores.

PSSM.

The PSSM consisted of 18 items (Appendix C). Items 3, 6, 9, 12, and 16 were reverse scored and then all of the items were summed to get a total score. The mean score

for the PSSM was 71.33 (with a standard deviation of 13.33). Scores ranged from a minimum of 34.00 to a maximum of 90.00 for participants in this study. Scores from the PSSM were leptokurtic (-.25) and were negatively skewed (-.70), as shown in Figure 3. The reliability of the measure was assessed by examining the Cronbach's alpha for the sample. The alpha coefficient can range from 0 to 1, and the overall reliability of the PSSM was .92.

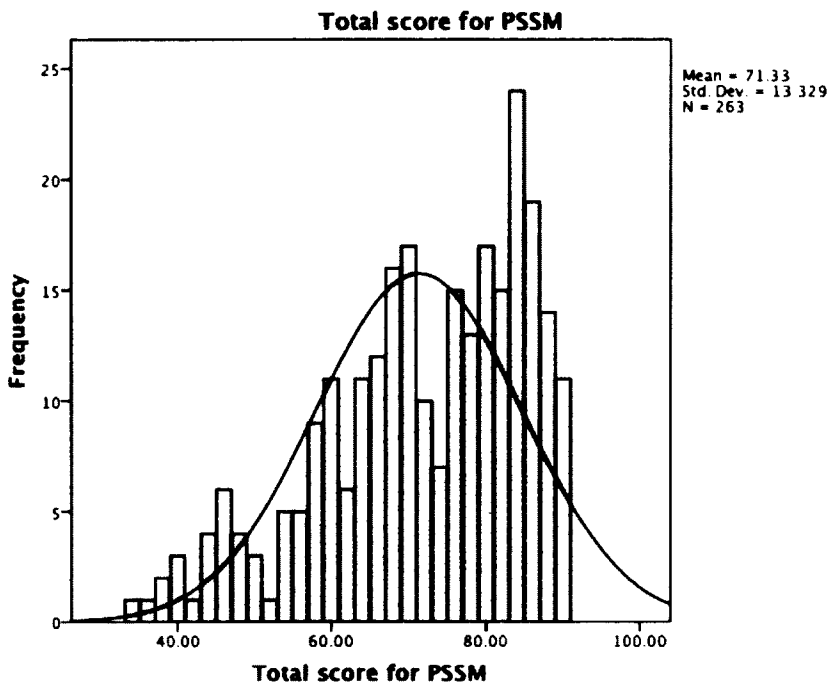


Figure 3. Distribution of participant's total PSSM scores.

ASCS.

The ASCS consisted of 40 items (Appendix D). Items 4, 5, 8, 11, 12, 14, 18, 19, 21, 22, 24, 26, 29, 30, 34, 38, 19, and 40 were reverse scored and then all of the items were summed to get a total score. The mean score for the ASCS was 120.16 (with a standard deviation of 15.83). Scores ranged from a minimum of 77.00 to a maximum of 159.00 for participants in this study. Scores from the ASCS were leptokurtic (-.43) and

were normally skewed (.08), as shown in Figure 4. The reliability of the measure was assessed by examining the Cronbach's alpha for the sample. The alpha coefficient can range from 0 to 1, and the overall reliability of the ACSC was .92. Table 3 presents a summary of the alpha coefficients for each instrument.

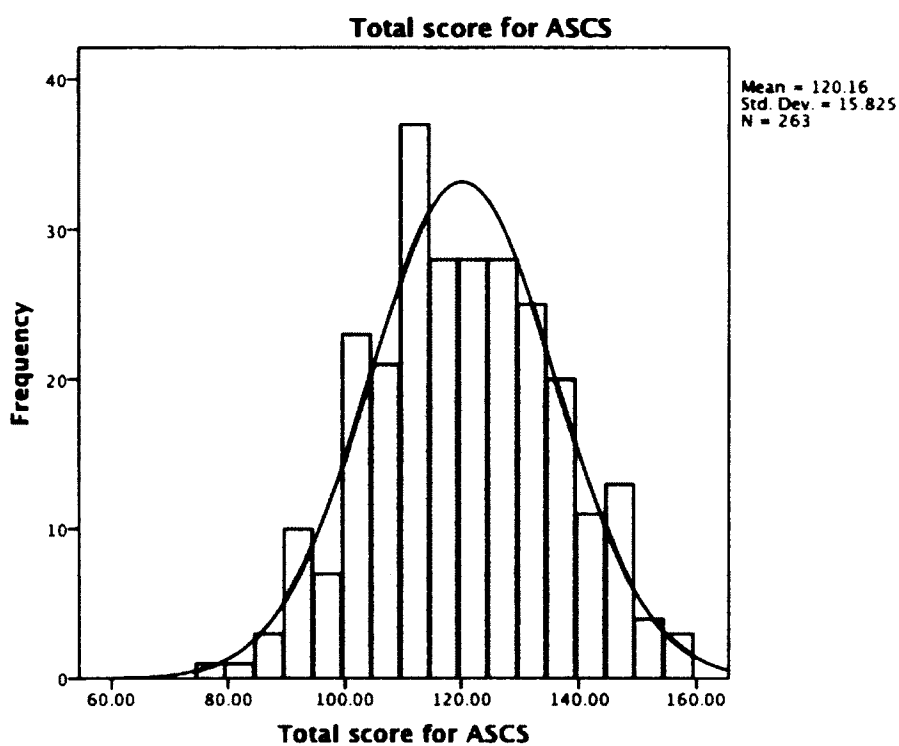


Figure 4. Distribution of participant's total ASCS scores.

Table 3
Overall Instrument Reliability

Instrument	α	N/items	N/cases
MEIM	.85	12	256
PSSM	.92	18	256
ASCS	.92	40	256

Results of Hypothesis Testing

This study explored four research questions with six corresponding hypotheses. This section details the statistical analysis for each research question, the results of the statistical analyses, and answers each corresponding hypothesis.

Data Cleaning Procedures

Initial data cleaning began with deleting all partially completed surveys from the final analysis. The data was analyzed to examine if any possible outliers were affecting data. First, the continuous variables (scores on the GPA, MEIM, PSSM, and ASCS) were converted to z-scores and examined to see if any scores were above 3 or below -3 standard deviations. No scores were removed at this level due to all scores falling within the specified criterion for standard deviations. Next, the dfBetas were examined for the scores of the Academic Self-Concept Scale, the Multigroup Ethnic Identity Measure, and the Psychological Sense of School Membership scale and were obtained by analyzing the frequency statistics for each scale. Scores that fell below the 1st and above the 99th percentile were removed. This resulted in a total of seven cases being removed, bringing the sample size down to 256, and improved skewness for the Psychological Sense of School Membership Scale and the Multigroup Ethnic Identity Measure, as shown in Table 4.

Table 4
Results of Data Cleaning on the scales

Variable	Before Data Cleaning		After Data Cleaning	
	Skewness	Kurtosis	Skewness	Kurtosis
MEIM	-.08	-.53	-.02	-.65
PSSM	-.70	-.25	-.66	-.29
ASCS	.08	-.43	.12	-.63

Research Question 1

The first research question asked, “What are the levels (i.e. distribution of scores) of each variable (ethnic identity score, academic self-concept score, and sense of school belonging score) among African American and Latino/Latina students?” To examine research question 1, a one-way between-subjects ANOVA was conducted to compare the scores of each measure (ASCS, PSSM, and MEIM) and the race of the participants. Table 5 provides a representation of the average scores on each measure by each ethnic group.

Table 5
Average scores by race

	Race/Ethnicity	M	SD	n
Total score for ASCS	BLACK	120.11	15.15	209
	LATINO/LATINA	121.53	14.92	47
	Total	120.37	15.09	256
Total score for PSSM	BLACK	71.21	13.19	209
	LATINO/LATINA	72.87	12.15	47
	Total	71.51	12.99	256
Total score for MEIM	BLACK	60.13	14.43	209
	LATINO/LATINA	59.11	14.40	47
	Total	59.94	14.40	256

Test of Hypothesis 1

Hypothesis 1 stated, “Latino/Latina students will have higher ethnic identity, academic self-concept, and sense of school belonging scores than African Americans.” To examine hypothesis 1, a one-way between-subjects ANOVA was conducted to compare the scores of each measure (ZASCS, ZPSSM, and ZMEIM) against the race of the students. The dependent variable was the z-score on each of the measures and the independent variable was race. The original data was analyzed to ensure that assumptions were met. An ocular test to check for normal distribution of scores on each measure showed that both the ASCS and MEIM were normally distributed and the PSSM had a moderate right skew. In addition, a Levene’s test to measure the assumption of homogeneity of variance was performed for each measure, revealing nonsignificant

results (ASCS = .84; PSSM = .32; MEIM = .93), meeting the assumption of homogeneity of variance.

There was not a significant effect of race on the scores of each measure (ASCS, PSSM, MEIM); therefore this hypothesis was not supported. For ASCS, $F(1, 255) = .34$, $p = .56$; for PSSM, $F(1, 255) = .63$, $p = .43$; and for MEIM, $F(1, 255) = .19$, $p = .67$, as shown in Table 6.

Table 6: ANOVA table
Dependent Variable: score on ASCS, PSSM, MEIM

Source		SS	df	MS	<i>F</i>	<i>p</i> <
Total score for ASCS	Between	78.09	1	78.09	.34	.56
	Within	57987.39	254	22.30	-	-
	Total	58065.49	255	-	-	-
Total score for PSSM	Between	106.58	1	106.58	.63	.43
	Within	42983.39	254	169.23	-	-
	Total	43089.965	255	-	-	-
Total score for MEIM	Between	40.14	1	40.14	.19	.67
	Within	52831.98	254	208.00	-	-
	Total	52872.12	255	-	-	-

Significant sex differences were found on the Academic Self Concept Measure, $F(1, 255) = 12.66$, $p < .001$, as shown in Table 7. However, no sex differences were found on the PSSM, $F(1, 255) = .30$, $p = .59$, or the MEIM, $F(1, 255) = .02$, $p = .92$. A Levene's test to measure the assumption of homogeneity of variance was performed for each measure, revealing non-significant results (ASCS = .50), meeting the assumption of homogeneity of variance.

Table 7: ANOVA Table
Dependent Variable: Score on ASCS

Source	SS	df	MS	F	p <
Between Groups	11.00	1	11.00	12.66	.0001
Within Groups	22.85	254	.87	-	-
Total	231.86	255			

Additionally, there was an interaction between sex and race for the Academic Self-Concept Scale, $F(1, 255) = 5.95, p = .015$. Post-hoc analysis could not be performed because there were only two groups for comparison in each category (Sex X Race). However, the means revealed that African Americans had lower scores than Latinos/Latinas and males had lower scores than females on the Academic Self-Concept Scale; with African American males had significantly lower scores than any other combination (see Figure 5).

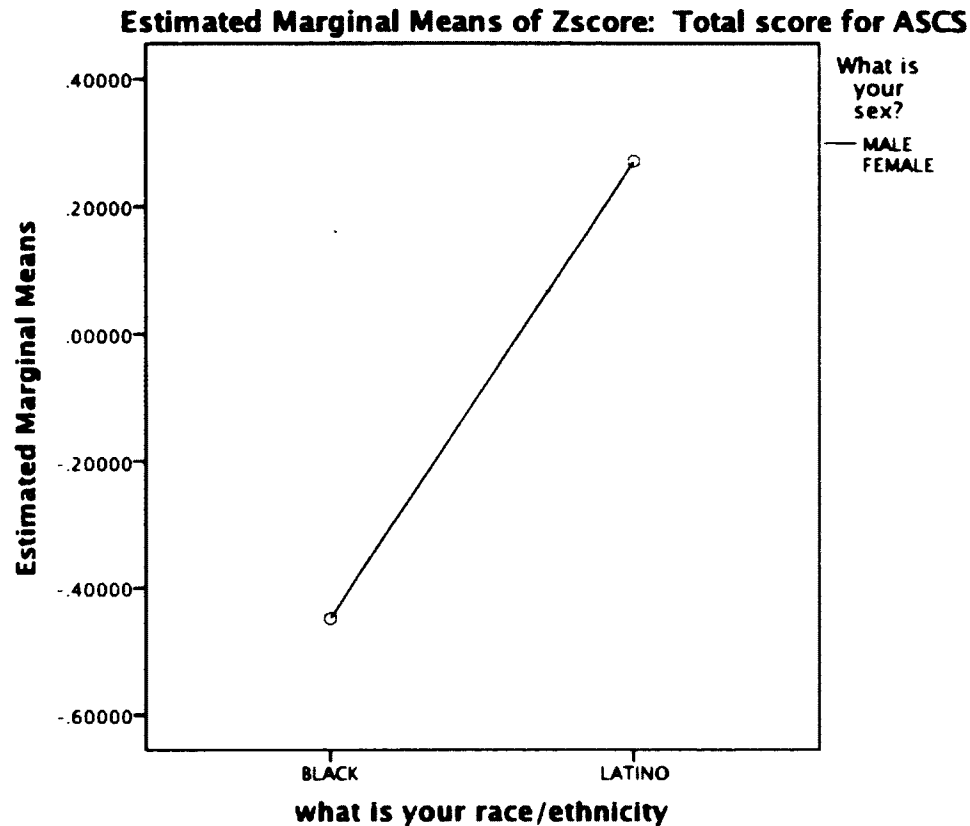


Figure 5. Graph showing the interaction of Race and Sex for scores on the ASCS.

Research Question 2

The second research questions asked, “What are the bivariate relationships among all of the variables?” The first sub-question of research question 2 asked, “What is the relationship between ethnic identity, academic self-concept, and sense of school belonging and enrollment at various levels of postsecondary education?” The second sub-question asked, “How does GPA relate to enrollment at various levels of postsecondary education?”

Test of Hypothesis 2

Hypothesis 2 stated that there would be a significant relationship between ethnic identity, academic self-concept, sense of school belonging and enrollment at various

levels of postsecondary education. To examine hypothesis 2, a Pearson product-moment correlational coefficient test was computed to assess the relationship between ethnic identity, academic self-concept, sense of school belonging and enrollment at various levels of postsecondary education. There was a negative correlation between academic self-concept and level of enrollment in postsecondary education, $r = -.11$, $n = 256$, $p = .04$. However, there was no significant correlation between ethnic identity and level of enrollment in postsecondary education, $r = .06$, $n = 256$, $p = .36$ and there was no significant correlation between sense of school belonging and level of enrollment in postsecondary education, $r = -.09$, $n = 256$, $p = .16$, therefore this hypothesis was partially supported.

Test of Hypothesis 3

Hypothesis 3 stated that there would be a significant relationship between level of GPA and enrollment at various levels of postsecondary education. To examine hypothesis 3, a Pearson product-moment correlational coefficient test was computed to assess the relationship between GPA and enrollment at various levels of postsecondary education. There was a negative correlation between GPA and level of enrollment in postsecondary education, $r = -.50$, $n = 256$, $p = .0001$, therefore this hypothesis was supported.

Additionally, several other correlations were found for the sample, which are summarized in Table 8. Specifically, there was a positive correlation between GPA and race, $r = .27$, $n = 256$, $p = .0001$; there was a positive correlation between GPA and academic self-concept, $r = .45$, $n = 256$, $p = .0001$; there was a positive correlation between sex and academic self-concept, $r = .22$, $n = 256$, $p = .0001$; there was a positive correlation between GPA and sense of school belonging, $r = .14$, $n = 256$, $p = .03$; there

was a negative correlation between academic self-concept and level of enrollment, $r = -.13$, $n = 256$, $p = .04$; and finally, there was a negative correlation between GPA and level of enrollment, $r = -.50$, $n = 256$, $p = .0001$.

Table 8. Correlations
Summary of Correlations

Variable	1	2	3	4	5	6	7	8
1. Age	1	-.05	-.01	-.01	.06	.01	.01	-.01
2. Sex	-.05	1	.03	-.07	.22**	.03	.01	.11
3. Race	-.01	.03	1	-.11	.04	.05	-.03	.27**
4. College	-.01	-.07	-.11	1	-.13*	-.09	.06	-.50**
5. ZASCS	.06	.22**	.04	-.13*	1	.42**	.10	.45**
6. ZPSSM	.01	.03	.05	-.09	.42**	1	.17**	.14*
7. ZMEIM	.01	.01	-.03	.06	.10	.17**	1	-.01
8. ZGPA	-.01	.11	.27**	-.50**	.45**	.14*	-.01	1

Note. **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). Sex is coded as 0 = male, 1 = female. College is coded as 0 = four-year university, 1 = two-year community college.

To address family-wise errors, a Bonferroni correction would have necessitated a significance level of $p < .001$. The correlations between GPA and race, GPA and academic self-concept, sex and academic self-concept, and GPA and level of enrollment met the significance level of $p < .001$.

Research Question 3

The third research question asked, “What variables best predict enrollment at various levels of postsecondary education?”

Test of Hypothesis 4

Hypothesis 4 stated that enrollment in postsecondary education will be predicted by ethnic identity, sense of school belonging, academic self-concept, race, sex, and GPA. To examine hypothesis, a logistic regression analysis was conducted in SPSS 21.0 to predict odds of enrollment for African American and Latino/Latina students using race, sex, GPA, ethnic identity, academic self-concept, and sense of belonging as predictors. Although academic self-concept and sense of school belonging ($r = .42$) as well as ethnic identity and sense of school belonging ($r = .17$) were found to be correlated, they were not closely related ($r < .80$; Field, 2009), therefore the assumption of multicollinearity was met. The dependent variable, which measures level of enrollment in postsecondary education, was coded as 0 = four-year university, and 1 = two-year community college. Additionally, when conducting a logistic regression analysis, the categorical variables must be specified and a reference category chosen. Race was coded as 0 for Latino/Latina, and 1 for African American, with Latinos/Latinas serving as the reference category. Sex was coded as 0 for female, and 1 for male, with female serving as the reference category.

A test of the model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between the two-year and four-year students ($\chi^2 = 79.51, p < .0001, df = 7$). Nagelkerke's R^2 of .378 indicated that 37.8% of the variance in the dependent variable was explained by the predictor variables included in the model. Additionally, the Hosmer and Lemeshow goodness-of-fit test revealed non-significant results meaning that the model prediction does not significantly differ from the observed model, which is desirable. The Wald criterion demonstrated that GPA ($p = .0001$) made a significant contribution to the prediction, after controlling for all

other variables in the model, with a 95% confidence interval of [.11, .30]. The confidence intervals are narrow which reveal that the population odds ratio falls within .11 and .30 with 95% confidence, which is good for smaller sample sizes. Academic self-concept ($p = .01$) also made significant contribution to the prediction, after controlling for all other variables in the model, with a 95% confidence interval of [1.14, 2.86]. The odds ratio for GPA indicates that for every one-point increase in high school GPA students are 5.4 times more likely to enroll in a four-year university. The odds ratio for academic self-concept indicate that higher academic self-concept scores lead to an increase in enrolling in a two-year university or that for every increase of one standard deviation of scores, students are 1.8 times likely to enroll in a two-year community college, after controlling for all other variables in the model.

Table 9
Logistic Regression Results

		<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp(B)</i>	<i>95% C.I. for EXP(B)</i>	
								<i>Lower</i>	<i>Upper</i>
Ste	SEX(1)	.33	.38	.763	1	.38	1.39	.67	2.90
p 1 ^a	RACE(1)	-.34	.48	.52	1	.47	.71	.28	1.80
	ZGPA	-1.69	.25	45.91	1	.001*	.18	.11	.30
	Age	-.13	.21	.38	1	.54	.88	.59	1.32
	ZASCS	.59	.24	6.23	1	.01*	1.80	1.14	2.86
	ZPSSM	-.34	.19	3.13	1	.08	.71	.49	1.04
	ZMEIM	.14	.17	.69	1	.41	1.15	.83	1.61
	Constant	1.39	3.95	.12	1	.73	4.02		

Cox and Snell $R^2 = .27$, Nagelkerke $R^2 = .38$
Hosmer & Lemeshow Goodness of Fit Test = $\chi^2 = 5.06$, $p = .75$, $df = 8$.

Note: * Significant at the 0.05 level

Research Question 4

The fourth research questions asked, “What main effects and/or interactions exist between ethnic identity, academic self-concept, sense of school belonging, race/ethnicity, sex, and GPA and level of enrollment at various levels of postsecondary education?”

Test of Hypothesis 5

Hypothesis 5 stated there would be an individual main effect of sex, GPA, ethnic identity, academic self-concept, and sense of school belonging scores and enrollment in postsecondary education. There were no main effects, therefore this hypothesis was not supported.

Test of Hypothesis 6

Hypothesis 6 stated there would be significant interactions between ethnic identity, academic self-concept, sense of school belonging, sex, GPA, and level of enrollment in postsecondary education. There were no significant interactions.

Summary

The results of this study support several findings. First, there was a negative correlation between academic self-concept and level of enrollment in postsecondary education, meaning that lower academic self-concept was related to enrollment in two-year community colleges. There was a significant interaction of race and sex for academic self-concept, with African American males having significantly lower academic self-concept. However, there was no significant correlation between ethnic identity or sense of school belonging and level of enrollment in postsecondary education.

Secondly, there was a negative correlation between GPA and level of enrollment in postsecondary education, meaning that lower GPAs were related to enrolling in two-

year community colleges and higher GPAs were related to enrolling in four-year universities.

Thirdly, it was also found that GPA and academic self-concept were predictors for level of enrollment in postsecondary education. Specifically, students with higher GPAs are 5.4 times more likely to enroll in a four-year university and students with higher academic self-concept are 1.8 times more likely to enroll in a two-year community college, when controlling for all other variables. There were no significant interactions between any of the predictor variables and level of enrollment in postsecondary education.

Lastly, no significant differences were found between African Americans and Latinos/Latinas in ethnic identity, sense of school belonging, or academic self-concept.

CHAPTER FIVE

DISCUSSION

The purpose of this study was to explore the relationship between sex, GPA, racial/ethnic identity, academic self-concept, and sense of school belonging for African American and Latino/Latina students with level of enrollment at postsecondary schools (two-year community college or four-year university). Participants completed either an online survey using SurveyGizmo software or an in-person survey packet. All in-person survey packets were then entered into the SurveyGizmo online database and transferred to SPSS 21.0 for further analysis. This chapter addresses each finding in relation to literature in the field, highlights limitations of the study, offers implications for counselors and educators, and discusses future directions.

Overall, after data cleaning, a total of 256 participants met the criteria for the study. The sample consisted of mostly African Americans (81.6%), with 47 Latinos/Latinas participants (18.4%). Participants in the sample were largely female (73.4%). Most of the participants in the sample reported attending a four-year university ($n = 180$, 70.3%) with 76 participants reporting attending a two-year community college (29.7%).

Summary and Discussion of Findings

Hypothesis I

The first finding in the study was that there were no significant differences between African American and Latino/Latina students on the Multigroup Ethnic Identity Measure, the Psychological Sense of School Membership scale, or the Academic Self-Concept Scale, which did not support the hypothesis that differences would be found.

This finding may have been greatly affected by the disparities between the number of African American participants, $n = 209$, and the number of Latino/Latina participants, $n = 47$. ANOVA analyses are susceptible to unequal numbers in groups (Cone & Foster, 2006; Field, 2009). In fact, using more evenly distributed groups, Kenny and McEachern (2009) found that African Americans had lower total self-concept, which included behavioral and academic self-concept, than Latino/Latina students.

A second finding found an interaction between race and sex with academic self-concept in the sample. Specifically, the current study found that African American males had lower academic self-concept than any other race or sex combination, highlighting the need for interventions that focus on this vulnerable group. Several studies have found separate relationships between sex and academic self-concept and race and academic self-concept (Altschul, Oyserman, & Bybee, 2006; Ong, Phinney, & Dennis, 2006; Oyserman, Harrison, & Bybee, 2001; Rowley, 1996; Zarate, Bhimji, & Reese, 2005) further supporting the importance of how students of color view their academic abilities.

Hypothesis II

There was negative correlation between academic self-concept and level of enrollment in postsecondary education ($r = -.11$, $n = 256$, $p = .04$), meaning that as academic self-concept scores decreased the likelihood of enrolling in a two-year community college increased. It's important to note that only about 1.2% of the variance in level of enrollment can be accounted for by academic self-concept scores which supports a weak but informative relationship. There are several possible explanations for this relationship. One possible explanation may be that the students used in the sample were between the ages of 18-20 and enrolled in their first two years of college. Reynolds

(1998) reported that freshman exhibited the lowest level of academic self-concept when compared to sophomores, juniors, and seniors; highlighting the fact that academic self-concept can improve over time. The students in this sample may begin college with lower levels of academic self-concept; however levels can improve as they progress through their schooling.

There was no significant relationship found between ethnic identity or sense of school belonging with level of enrollment in the current study. A possible explanation for this finding was offered by Faircloth and Hamm (2005) who found that the meaning of “school belonging” was not uniform across various ethnic groups therefore hard to correlate. Thus, it is possible that the instrument picks up “school belonging” for some ethnic groups but not others (e.g., Latinos/Latinas but not African Americans). If this is the case, we may have an instrument validity limitation (e.g. is the instrument measuring what it is supposed to measure?).

Alternative Explanations. Other studies have found a positive relationship between sense of school belonging and academic achievement, which is related to enrolling in higher education (Hagborb, 1994; Irvin, Meece, Byun, Farmer, & Hutchins, 2011). Anderman (2002) found that ethnicity was a predictor of school belonging for African Americans, pointing to a possible relationship between school belonging and ethnicity. Also, several studies have highlighted the connection between higher levels of ethnic identity and academic achievement (Altschul, Oyserman, & Bybee, 2006; Ong, Phinney, & Dennis, 2006), lending support to examining sense of school belonging and ethnic identity further in minority students.

Again, how ethnic groups define school belonging may be a key factor in examining the relationship between school belonging and enrollment in postsecondary education. Person and Rosenbaum (2006) distinguished between school belonging and “academic integration,” stating that Latinos/Latinas more often reported feeling a sense of school belonging, however, they rarely relied on school resources for help, which they described as academic integration (p. 56). For Latinos/Latinas in their sample, feeling connected to the college and actually feeling secure enough to ask for help from campus resources were two different phenomena, offering a possible explanation for the lack of relationship found in the current study. This points to a possible limitation related to the validity of the Psychological Sense of School Membership Scale in measuring school belonging in various ethnicities.

Hypothesis III

There was a negative correlation between grade point average and level of enrollment, meaning that higher GPAs were associated with enrolling in a four-year university and lower GPAs were associated with enrolling in a two-year community college. This effect was particularly meaningful with approximately 25% of the variance in enrollment being accounted for by GPA. The finding that a relationship exists between GPA and enrolling in higher education has been widely supported in several studies (Awad, 2007; Cokley et al., 2011; Ong, Phinney, & Dennis, 2006).

Additionally, a positive correlation between GPA and academic self-concept was found, meaning that as GPA increased so did academic self-concept. The relationship between GPA and academic self-concept was moderate; showing that about 20% of the variance in academic self-concept was directly accounted for by GPA. These findings

reveal the integral role that GPA and academic self-concept may play in enrollment in higher education for students in this sample.

Other findings. The current study supported findings by several studies about the relationship between GPA and sense of school belonging (Anderman, 2002; Awad, 2007; Cokley, 2002; Cokley & Chapman, 2008; Cokley et al., 2011; Powel & Arriola, 2003; Reynolds, 1988). Specifically, a weaker positive correlation between GPA and sense of school belonging was found, with about 2% of variance in sense of school belonging being accounted for by GPA. Also a weak positive correlation was found between GPA and race, with about 7.3% of the variance in GPA being accounted for by race. For the sample, being African American was related to having higher GPAs. This finding may have been influenced by the larger numbers of African American women in the sample, who have been found to having higher GPAs (Cokley & Moore, 2007; NCES, 2011; Osborne, 1997).

Hypothesis IV

The results of the logistic regression analysis to obtain a list of the best predictors for enrolling in either a two-year community college or four-year university found GPA and academic self-concept to be the only significant predictors, which has been confirmed in other literature as cited above. These findings may have been affected by the unequal numbers of participants per level of enrollment, with only 76 participants at the two-year level and 180 at the four-year level. Logistic regression offers clues as to the directionality of the relationship by providing the odds ratio, which “is an indicator of the change in odds resulting from a unit change in the predictor,” (Field, 2009, p. 270). The

current study found that students with higher GPAs are 5.4 times more likely to enroll in a four-year university, which has been supported in the literature.

The finding that students with higher academic self-concept are 1.8 times more likely to enroll in a two-year community college was unexpected. There are several possible explanations for this finding. First, community colleges are sometimes used as a stepping-stone to enrolling in a four-year university, lending support to the idea that students may be headed to a four-year university eventually and therefore would have higher academic self-concept. A study conducted by Horn and Neville (2006) found that 83% of students attending community college enrolled with the goal of transferring to a four-year university. Secondly, the inverse relationship could also be related to some students entering community college with the express goal of obtaining a job certificate and/or training. These students may show stronger academic self-concept because they have clear reasons for attending a community college. Horn and Neville (2006) found that 42% of students reported enrolling in community college did so with the goal of obtaining job skills. A final explanation of this finding could be related to the type of students enrolled in community colleges. Grimes (1997) compared the characteristics of underprepared and college-ready community college students and found that college-ready community college students demonstrated more internal locus of control, which they found to be more important in predicting academic achievement than academic self-concept. This finding suggests other confounding variables not captured in the current study. Unfortunately, the literature that compares level of enrollment (two-year vs. four-year) and student characteristics is either outdated or non-existent.

Hypothesis V-VI

Lastly, there were no significant interactions between any of the predictor variables and level of enrollment in postsecondary education.

Limitations of the Study

Several limitations to the study were observed that should be taken into consideration when interpreting the results of the study. These included limitations to the internal and external validity. As described previously, internal validity threats deal with the assumption that the independent variables are somehow linked to the outcome or dependent variable. The study utilized a non-experimental, survey design; therefore, causality could not be attributed to the variables being measured. External validity threats refer to whether or not the results of this study can be generalized to other populations and situations (Wiersma & Jurs, 2009).

Recall Bias

The survey may have been vulnerable to recall bias due to requiring participants to respond to the survey based on their memory of their high school experiences. This was addressed by limiting the age range of participants to between 18 and 20 years of age in order to reduce time since actually being in high school. However, participants may have guessed at some of their responses, increasing recall bias and limiting the interpretation of the results.

Social Desirability

Due to the sensitive nature of the concepts being measured (i.e., GPA, ethnic identity, sense of school belonging, and academic self-concept), the entire survey packet may have been vulnerable to social desirability effects. For example, students may have reported higher GPAs than actually obtained or higher levels of ethnic identity in order to

seem more connected to their ethnic group. Nederhof (1985) suggested several strategies aimed at decreasing the social desirability bias such as using social desirability scales to measure the bias, using forced-choice items which forces users to choose between two items that relate to different topics, using neutral questions that are assumed to be void of social desirability, and using self-administered questionnaires. As a means of reducing social desirability in the current study, the researcher used self-administration method by providing participants the opportunity to take the survey online or privately during the in-person administrations. The researcher did not employ a social desirability measure, which could have potentially measured for social desirability bias.

Response Rate

A response rate could not be accurately calculated due to the primary researcher not having control over the distribution of the survey to students. All of the schools sent the link of the survey directly to the students at their respective sites and did not provide the total number of students receiving the link to the survey. Of the 454 participants that began the survey, 79.7% completed the survey either online or in-person. A total of 20.2% did not complete the survey, which may have been related to the length of the survey.

Logistic regression requires larger sample sizes, with a minimum of 100 participants in the sample. The sample size was met at the four-year level of enrollment but not at the two-year level. Additionally, there were only 49 Latino/Latina participants in the sample, greatly reducing power at the level of ethnicity. Gaining access to college students as well as working through the chains of command and review processes at each school proved to be a major challenge. Despite several attempts of increasing the sample

size, the results may be difficult to generalize due to the limitations in sample size, especially across race and at the two-year community college level.

The Internet was used as the main medium for collecting surveys, which presented additional limitations. First, there was no way to ensure that the same participant did not respond more than once to the survey. Second, there was no way to verify that participants met the criteria for inclusion in the study, being African American or Latino/Latina between the ages of 18-20 years of age, although the likelihood of them misrepresenting themselves is low. Lastly, potential participants may have been overlooked due to them not having easy access to a computer to complete the survey online.

Selection

The study may have been susceptible to additional internal validity threats due to the nature of the sample. The participants used in the study were exclusively attending public colleges and universities in Virginia, possibly leading to geographic influence or bias. The participants in the sample were mostly African American (81.6%) and mostly female (73.4%), limiting the generalizability of the results to other populations. Additionally, most participants were enrolled in the four-year level of postsecondary education (70.3%), which affects the ability of others to extrapolate the findings to other levels of education. Participants may have also grouped around certain characteristics common to individuals willing to take surveys such as high academic achievement.

Additionally, while 37 schools were targeted for the study, only 11 schools approved the study for distribution at their schools. Also, all schools used in the study were public community colleges and universities. This greatly limited the researcher's

ability to obtain a large and representative sample from all areas of Virginia.

Geographically, participants in the study were mostly students from local colleges and universities in the Hampton Roads area, which led to a more homogeneous sample, although multiple efforts were made to diversify the sample throughout Virginia.

Instrumentation

Several instrumentation threats may have possibly influenced the study.

Participants may have become fatigued by having to take four measures: the demographic questionnaire which consisted of seven questions; the MEIM which consisted of 12 questions; the PSSM which consisted of 18 questions; and the ASCS which consisted of 40 questions. Participant fatigue may have led to participants selecting answers arbitrarily or incorrectly or even dropping out of the study. All efforts were made to ensure that the procedures for the administration of the survey were standardized meaning the researcher attempted to explain the instructions to participants in a standardized way and that all research assistants were trained on how to explain the instructions. However, standardized administration may have also been a limitation. Also, the instruments used in the study may have not measured what they were intended to measure. There was no test-retest data collected, however, the internal consistency for each instrument were at acceptable limits (MEIM = .85, ASCS = .92, and PSSM = .92) for the sample.

External Validity

The study may have been limited by threats to the external validity, which deal specifically with the generalizability of the results (Wiersma & Jurs, 2009). First, the prior experiences of the sample participants may have influenced their responses to the study (e.g., having been subjected to racism or prejudice in their school environment or

not feeling connected to their ethnic identity). Also, recent experiences could have potentially influenced how students remembered their high school experiences. For example, having positive and encouraging faculty in their college environment could cause the participants to view their high school experiences in a more positive light than warranted. Second, individual characteristics such as personality traits or feelings about their race could have influenced the way participants responded to the survey. Lastly, the researchers own personal characteristics and/or possible influence on participants could have been influenced participation in the study, although not necessarily in a negative manner. For example, participants may have felt inclined to assist in completing the survey during the in-person survey administration due to the researcher being from a minority group as well. Also, the small sample size limited statistical power.

Implications for Educators

Results of this study found that African American males had significantly lower academic self-concept than African American females and Latinos/Latinas in the study. As highlighted earlier, how African Americans perceive themselves academically is directly related to how well they do in school which is further complicated in light of the phenomenon of academic disidentification, common to African Americans. Cokley et al. (2011) reported that academic disidentification occurs when there is no relationship between how students view their academic abilities and their actual academic outcomes. So when there is no direct relationship between how students view themselves and their actual outcomes, academic self-concept is adversely affected. They highlighted that African American males are especially at risk, a finding also supported by Osborne (1997) and in the current study. Academic disidentification is especially concerning

because students who do not view themselves academically capable are potentially less motivated to obtain higher grades and attend institutions of higher education, which presents special challenges to educators. Educators may need to find ways to identify students who have exhibited signs of academic disidentification, as well as develop new and innovative ways of encouraging motivation in those students. Conceptually, this could possibly involve educators administering the Academic Self-Concept Scale to African American males that earn lower GPAs to examine if their view their academic abilities is influencing their academic achievement. Once identified, educators will have key information about the needs of this vulnerable group and can begin to identify strategies to improve their academic self-concept.

The finding of a significant interaction of race and sex on academic self-concept also calls attention to other possible influences for academic disidentification. For example, a study conducted by Cokley et al. (2003) highlighted the influence of other people's perception of the academic abilities of the student. Specifically, academic self-concept involved an additional dimension called negative performance expectations in which African Americans felt that others' negative expectations of them influenced their grades as well. African American students in their sample were faced with an additional challenge of overcoming their teachers' and/or administrators' view of the academic capabilities. These findings point to the complexity of how minorities view themselves in relation to academic achievement and also present educators and counselors with a major challenge of not only helping students improve their own academic self-concept but also working within the educational system to overcome negative stereotypes placed on minority students.

It is also important to note that several correlations involved academic self-concept: positive correlations between GPA and ASCS, sex and ASCS, a negative correlation between ASCS and level of enrollment in postsecondary education, spotlighting the centrality of how students view themselves academically. The role that academic self-concept plays in academic achievement, academic persistence, and race warrants further exploration.

Although no correlation was found between ethnic identity and GPA, a positive correlation was also found between GPA and race, meaning that higher GPAs were associated with the African American participants lending support to helping students explore their ethnic identity (Elam, 1989; Johnson et al., 1997; Zarate et al., 2005). Educators hoping to further the academic achievement of minorities should integrate strategies for assisting ethnic identity development into education. Ideally, this would involve taking the discussion about ethnic identity past a “Black History Month” and to a more personal level of ethnic identity exploration. A possible solution would be to incorporate a genogram project that challenges students to explore their family history, paying special attention to their ethnic identity and how it evolved throughout the generations.

A significant positive correlation was found between GPA and sense of school belonging, calling attention to the importance of educators creating welcoming and interactive environments for minority students especially. Current literature has suggested that interactions between students and faculty as well the assignment of mentors are effective ways of increasing school belonging for minority students (Faircloth & Hamm, 2005; Freeman, Anderman, & Jensen, 2007; Meeuwisse, Severiens, & Born, 2010;

Roeser, et al., 1996). The concept of *school belonging* is complicated due to the lack of a uniform meaning across race (Faircloth & Hamm, 2005), and educators may want to consider how they can best form alliances with students from different ethnic groups. Some ideas include offering workshops on ethnic identity or cultural exploration/pride, having one-on-one meetings with students to increase engagement with minority students, or offering fun project/contest that asks students to be creative in identifying sources of school belonging, and more. Additionally, educators could work with students to develop a definition of school belonging and strategies for increasing their interaction in school-related activities.

Implications for Counselors

This study attempted to examine the internal/psychosocial aspects of enrolling in higher education. As mentioned earlier, numerous studies have explored the external aspects and/or barriers to enrollment for minority students; however, less research has been conducted that explores how minorities see themselves in relation to various aspects of higher education. For adolescents and young adults, academic self-concept has been found to be connected to ethnic identity (Cokley & Chapman, 2008), lending support to the need for counselors to explore how students feel about their academic abilities as a whole as well as in relation to how they conceptualize their ethnic identity. Specifically, Cokley et al. (2003) highlighted that African American students did not feel that the amount of effort they put into their academics was directly related to them obtaining good grades; instead they felt that negative expectations of them also affected their academic achievement. This finding highlights the phenomenon of stereotype threat that many minority groups face (Steele & Aronson, 1995), and the increased anxiety and pressure

experienced by African American students at the high school and college level. Okeke, Howard, and Kurtz-Costes (2009) also found support that race moderated the relationship between academic self-concept and academic stereotypes, explaining that if participants endorsed academic stereotypes about their performance they were more likely to have lower academic self-concept. These areas: exploring ethnic identity, academic self-concept, and stereotype threats, may be helpful topics for exploration in a group counseling setting.

At the high school level, a possible implication may be conducting a college readiness group that explores the internal barriers in detail with minority students with the goal of preparing them for possible barriers and increasing academic persistence. These group and/or individual counseling sessions may be especially helpful for African American males as the current study found that African American males were at an increased risk of having lower academic self-concepts.

Although not found in the current study, other studies have found that academic self-concept was highly correlated with self-esteem (Reynolds, 1988), which may be important to explore with students at this stage in their ego and academic development. Similarly, Bordes-Edgar et al. (2011) posited that students' beliefs about themselves were strongly related to their persistence decisions in obtaining higher education, further supporting the importance of how students view themselves academically and holistically.

Additionally, the internal barriers students face academically have been found to have psychological implications for students. Sense of school belonging did not meet the criteria for being a significant predictor for enrollment in higher education, although

coming close with an alpha of .077. Despite no significant relationship being found between sense of school belonging and enrollment in higher education in the current study, Pittman and Richmond (2007) reported that students' sense of belonging at a university is directly related to their psychological adjustment, which included participants' self-worth. In addition, Hagborg (1994) found that students with lower sense of school belonging were linked to being more emotionally distressed. Furthermore, Woolfolk and Perry (2012) posited that lower sense of school belonging was related to increased dropout rates, lower self-esteem, and higher rates of delinquency and risk taking behaviors, further highlighting the importance increasing the feeling of school belonging for students. Counselors can play a key role in advocating for students by conducting staff trainings around having empathy, positive regard, and active listening skills when interacting with students.

As highlighted previously, school belonging involves one's sense of acceptance from peers, interaction with teachers, and one's own view of self (Freeman et al., 2007; Hoffman et al., 2003; Osterman, 2000; Woolfolk & Perry, 2012). This is also related to Erikson's exploration of the psychosocial crisis of *isolation* in which individuals would be subjected to a lack of relationships, intimacy, or not having belongingness, which is especially important in adolescence and young adulthood (Berk, 2012). Exploring the area of school belonging may be more appropriate for school and community counselors as it may have the greatest influence on students' decisions to dropout of higher education.

Implications for Future Research

In order to more adequately explore the best set of possible predictors of enrollment at various levels of postsecondary education, a more evenly distributed and larger sample should be sought. Specifically, logistic regression is more robust with larger sample sizes and has more accurate estimates of power. The current study was severely limited by having a very small sample of Latino/Latina students; therefore, true effects may have been undeterminable. Future research would also benefit by implementing a social desirability measure due to the vulnerability of self-report data. A major area of future research would be to focus on high school students currently enrolled in high school so that the prediction would not be retrospective but predictive at the college level. This study was limited due to not obtaining access to high school students.

The study also lends itself to being conducted as a qualitative study that can explore the experiences of minority students at both the community college level and four-year university level. A potentially interesting direction would be a grounded theory that could identify some of the common internal barriers experienced by minorities when making their decision to enroll in higher education. Future studies may benefit from including measures to account for income, self-esteem, locus of control, and academic persistence. Additionally, future research may also consider utilizing a different ethnic identity measure that can account for various levels of ethnic identity (e.g. achieved, foreclosed, moratorium, etc.), or by using targeted ethnic identity measures based on the participant's ethnicity.

The current study was limited by access to specific populations: therefore, only included African American and Latino/Latina students, however, future research would benefit from exploring other underrepresented groups in higher education such as Native

Americans. Future research may also want to explore other age groups depending on the goal of the research. If the research has a preventative goal, exploring middle school-aged children may be appropriate. If the research has a goal of intervention, exploring older, non-traditional age students may provide important implications. Additionally, future research would benefit from finding more effective sampling methods at the school and participant level. A major limitation for the current study was not reaching the desired amount of schools due to being denied access to some schools and not receiving responses from other schools. In redoing the study, the researcher would attempt to forge stronger relationships with a larger number of schools by attempting to meet with administrators in person to increase investment in the study. Additionally, the researcher would increase student participation by meeting with the leaders of Latino/Latina and African American student organizations and arranging meetings with their membership and by scheduling more in-person survey administration meetings in the student centers at each school.

Summary

This study sought to explore the relationship between sex, GPA, racial/ethnic identity, academic self-concept, and sense of school belonging for African American and Latino/Latina students with level of enrollment at postsecondary schools (two-year community college or four-year university). Additionally, this study endeavored to identify a set of predictors of enrollment in postsecondary education. Academic self-concept and GPA were found to be significantly related to enrollment in postsecondary education as well as predictors for enrollment.

This chapter recommended areas for future research in this area, implications for educators and counselors, and identified the limitations of the current study. Although several hypotheses were not supported or partially supported, the study added to the literature that compares community college and four-year university student characteristics.

Chapter 6

Manuscript Submission

Factors that Influence Minority Student Enrollment in Two-Year and Four-Year

Postsecondary Education

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Abstract

This retrospective study explored the relationship between sex, GPA, ethnic identity, academic self-concept, and sense of school belonging for African American and Latino/Latina students with level of enrollment at postsecondary schools (two-year community college or four-year university). Participants included 256 students at universities in Virginia. GPA and academic self-concept were found to be predictors of enrollment. Specifically, students with higher GPAs are 5.4 times more likely to enroll in a four-year university and students with higher academic self-concept are 1.8 times more likely to enroll in a two-year community college, when controlling for all other variables. There was a significant interaction of race and sex on academic self-concept, specifically that African American males had the lowest academic self-concept. No group differences were found between African Americans and Latinos/Latinas in ethnic identity, sense of school belonging, and academic self-concept. The limitations of the current study as well as implications for educators and counselors are also presented.

Keywords: academic self-concept, sense of school belonging, racial/ethnic identity, logistic regression, two-year community college students, four-year university students

Factors that Influence Minority Student Enrollment in Two-Year and Four-Year Postsecondary Education

The problem of underrepresentation of minorities in higher education has been well documented. A 2010 report by the National Center for Education Statistics (NCES) showed that 32% of African Americans between the age of 18 and 24 were enrolled in colleges and universities and that even fewer Latinos/Latinas were enrolled with a rate of 26% for the same age range. This compares to a rate of 44% for Whites. Although the numbers demonstrate a disparity in enrollment in postsecondary education for minorities, the reasons for the disparity are less clear, but probably include high school dropout rates, high rates of poverty, and high percentages of Latinos/Latinas and African Americans who come from single-parent families who lack a model and encouragement to attend college. In addition, Elam (1989) found that "...minorities are not identified, recruited, and encouraged to attend universities and colleges" (p. 89), which may add to the low enrollment rate of minorities in postsecondary education.

Although the need for more access to higher education for minorities has been acknowledged throughout the literature and provisions have been made to increase access, several internal and external challenges continue to encumber minorities that influence their decision and ability to obtain postsecondary education. Internal challenges concern how minorities perceive their abilities and sense of belonging in their cultural community and school environment. Ethnic identity, academic self-concept, and sense of school belonging are related to the internal struggles faced by minorities (Freeman, 1997). External challenges include racial microaggressions and lack of access to financial support and/or opportunities to fund postsecondary education (Elam, 1989). The

purpose of this article is to explore those internal challenges such as ethnic identity, academic self-concept, and sense of school belonging, as well as the external challenges such as sex and academic performance (G.P.A.) in relation to how each predict enrollment in two-year community colleges and four-year universities.

Ethnic Identity

Research indicates that ethnic identity is a critical component of identity development in minorities (Phinney & Alipuria, 1990). Ethnic identity is defined as how one perceives his or her belongingness to a certain cultural group or a group with shared heritage and practices (Torres, 2003). In the 1960s, African Americans racial/ethnic identity models emerged in response to discrimination. Cross (1971) was one of the first to develop a model of African American identity that was based on identity development and progressed from non-exploration of ethnicity to an integrated, explored ethnic identity. Early models of ethnic identity were oriented around stages which saw individuals move through organized, linear steps in their ethnic identity development. However, Parham suggested a racial identity development model that posited a life-long, cyclical identity development process for African Americans (Chavez & Guido-DiBrito, 1999). Parham proposed that there are and will be many episodic encounter experiences faced by African Americans, which will change their perception process throughout the lifespan.

Latino/Latina models of ethnic identity emerged in the late 1990s. Torres (1999) developed a racial/ethnic model of identity that focused on how Latinos/Latinas face challenges in integrating their Latino/Latina culture with that of the American mainstream culture. One of the first challenges faced by Latino/Latina adolescents is the

determination of how to “label” themselves: Latino/Latina, Mexican, Hispanic, American, etc. Johnson et al. (1997) reported that people of Hispanic origin prefer to identify by their country of origin (i.e. Puerto Rican, Cuban, Mexican, etc.) vs. using the term Hispanic. The diversity of Latino/Latina culture makes consolidating one model of racial/ethnic identity development difficult.

Although there are a number of ethnic identity models that address specific ethnicities, Phinney (1989) developed a model of ethnic identity development that aimed at incorporating most racial/ethnic minorities. Although research has been extensive in exploring ethnic identity at the four-year university level, research has not been extensive in exploring the relationship between ethnic identity, academic self-concept, and sense of school belonging with differential enrollment in community colleges and four-year universities.

Academic Self-Concept

Academic self-concept consists of “the attitudes and feelings that an individual has about his or her academic abilities” (Cokley & Chapman, 2008, p. 354), and includes domains that involve peer evaluation and self-evaluation with external standards. A positive relationship has been shown to exist between academic self-concept and academic achievement (Lyon, 1993; Marsh & O’Mara, 2008). Students with higher academic self-concept experienced more academic success, which has been defined as higher GPAs and higher grades in individual courses (Awad, 2007; Cokley, 2000; Cokley & Chapman, 2008; Muijs, 1997). In fact, Marsh and Craven (2006) asserted that academic self-concept and performance are “...mutually reinforcing constructs,” each having an impact on the other and that as self-concept improves so will performance and

vice versa (p. 159). With such a strong link to academic achievement, academic self-concept is a variable of interest in the success of minority students.

Racial differences exist in how minorities perceive academic achievement, with minority students perceiving themselves as less academically competent or able (Phinney, Dennis, & Osorio, 2006). This is important because research indicates that more positive academic self-concept is related to better academic performance. Little had been written on the relationship between academic self-concept and the pursuit of postsecondary education at the community college level.

Sense of School Belonging

Sense of school belonging is defined as students feeling accepted, respected, and included at their school environment (Goodenow, 1993). It is also related to how students feel about their relationship with peers and teachers (Faircloth & Hamm, 2005). Research indicates that ethnicity plays a large mediating factor in school belonging (Anderman, 2002), and feelings of isolation, fighting against perceived stereotypes, and adjustment difficulties have been found with minority students when attending college (Elam, 1989; Freeman, 1997). A study by Leonard and Alvarez (2007) explored the school belonging in African American, Asian, Hispanic, and White students and found that White students expressed the highest level of school belongingness of all the ethnic groups. For Latino/Latina high school students, relationships with teachers, involvement in school activities, and involvement with peers were linked to school belonging (Faircloth & Hamm, 2005). For African American high school students, relationships with teachers and involvement in school activities were linked to school belonging (Faircloth & Hamm, 2005).

With studies suggesting that higher sense of school belonging is related to academic achievement, developing a stronger sense of belonging for minority students seems critical (Faircloth & Hamm, 2005; Hagborg, 1994; Pittman & Richmond, 2007; Sanchez et al., 2005). Little research has explored the relationship between sense of school belonging and pursuit of postsecondary education at the vocational or community college levels.

Sex

For the purposes of this study, sex was defined as the biological sex at birth either male or female, and was examined as a possible predictor. Research has supported that sex is an additional influencing factor for minority enrollment in postsecondary education (NCES, 2011). Such that 57% of all Bachelor degrees issued in 2009, were earned by females. Previous literature has supported that differences exist in the academic achievement of females and males, and that in recent years; females have graduated high school and enrolled in higher education at higher rates than males. In addition, females have also reported higher ethnic identity, academic self-concept, and a stronger sense of school belonging (Chae, 2000; Hagborg, 1994; Johnson et al., 2007; Sanchez et al., 2005).

Minority females have outperformed males in academic tasks and have been found to place more value in their education (Cokley & Moore, 2007; NCES, 2011; Osborne, 1997). African American women earned 65% of the 9.8% of bachelor degrees issued to African Americans (NCES, 2011). Likewise, Hispanic women earned 60% of the 8.1% of bachelor degrees issued to Hispanic students highlighting the need for further exploration of possible mediating factors.

GPA and Academic Achievement

A number of studies examining postsecondary enrollment have defined academic achievement by a student's grade point average (Awad, 2007; Cokley et al., 2011). Likewise, research has also found that academic achievement is related to enrollment in postsecondary education (Muijs, 1997). Unfortunately minority students often earned lower GPAs than White students (LeCroy & Krysik, 2008) and this, in turn, is reflected in their ability to gain entrance to postsecondary institutions. Literature has also demonstrated that GPA is positively predicted by academic self-concept and sense of school belonging (Anderman, 2002; Awad, 2007; Cokley, 2002; Cokley & Chapman, 2008; Cokley et al., 2011; Powel & Arriola, 2003; Reynolds, 1988), lending support to examining the relationship of GPA and enrollment at various levels of postsecondary education. This intricate relationship among academic self-concept, sense of belonging, and GPA was believed to have a profound impact on the likelihood of minority high school students applying to and attending postsecondary education.

The purpose of this study was to explore the relationship between sex, GPA, racial/ethnic identity, academic self-concept, and sense of school belonging for African American and Latino/Latina students with level of enrollment at postsecondary schools (two-year community college or four-year university). Few studies focused on the relationship of ethnic identity, sense of school belonging, and academic self-concept with enrollment in two-year community colleges vs. four-year universities. The study examined several hypotheses: 1) that group differences would exist in ethnic identity, academic self-concept, and sense of school belonging between African Americans and Latinos/Latinas; and 2) that there would be a relationship between ethnic identity,

academic self-concept, sense of school belonging, sex, GPA, and enrollment at various levels of postsecondary education. In addition, this study also sought to identify the best list of predictors of enrollment in postsecondary education for each race. This researcher sought to further the literature regarding the enrollment and retention strategies for minority students in order to increase minority enrollment in both the two-year community college and the four-year university level of postsecondary education.

Method

Participants

Participants consisted of 256 African American and Latino/Latina students between the ages of 18-20 who were enrolled in public, two-year community colleges or four-year universities and colleges in the state of Virginia. A total of 454 participants responded to the survey both online and in-person between October 2012 and February 2013. A total of 92 participants, 20.2%, started the survey but did not complete it. Of the 362 remaining participants, an additional 99 were removed from the survey because they were not African American, Latino/Latina, or between the ages of 18-20, leaving a total participant count of 263 for the study, before data cleaning procedures were implemented that resulted in the removal of an additional seven participants due to having scores outside of desirable scoring percentiles.

Overall, after data cleaning, a total of 256 participants met the criteria for the study. The sample consisted of mostly African Americans (81.6%), with 47 Latinos/Latinas participants (18.4%). Participants in the sample were largely female (73.4%). Most of the participants in the sample reported attending a four-year university

($n = 180$, 70.3%) with 76 participants reporting attending a two-year community college (29.7%).

Procedure

The study employed a retrospective, correlational design. The sample was selected based on criterion and convenience sampling at various postsecondary educational settings in Virginia that included community colleges and universities. The researcher sent an initial batch of emails to the directors of the Office of Diversity/Multiculturalism at every public four-year university and two-year community college in Virginia. The initial email contained an explanation of the survey, an informed consent document, and the proposed letter to research participants. A total of 11 schools participated in the study. A SurveyGizmo link to survey was electronically distributed via email to participants directly from the school contacts and was posted on the announcement board at several schools. In addition, face-to-face data collection sessions were held to increase participation in the study. Participants were asked to answer the assessments based on recollection of their high school experiences.

Instruments

Multigroup Ethnic Identity Measure (MEIM). The complete MEIM consists of 12 items (Phinney, 1992; Roberts et al., 1999). The MEIM uses a 5-point Likert-type scale with “1” equaling *strongly disagree* to “5” equaling *strongly agree* (Roberts et al., 1999). The MEIM is scored by taking the mean of the 12 items of the overall score. Construct validity was established by administering the MEIM with an ethnically diverse sample of participants and finding that it differentiated across the various ethnic groups. Cronbach’s alpha reliability for the overall MEIM is .85 (Roberts et al., 1999). For

African Americans, the reliability has been found to be .85 and for Mexican and Central Americans has been found to be .81. The Cronbach's alpha was found to be .85.

Psychological Sense of School Membership scale (PSSM). The PSSM (Goodenow, 1993) is an 18-item instrument that measures the extent to which students feels accepted and included by others in their school environment (You, Ritchey, Furlong, Shochet, & Boman, 2011). The response format is a 5-point Likert-type scale, with 1 = not at all true and 5 = completely true. The PSSM was normed on subjects between 12-18 years of age but has been used with traditional, college-age participants in several studies (Freeman, Anderman, & Jensen, 2007; Hoffman et al., 2003; Johnson et al., 2007; Meeuwisse, Severiens, & Born, 2012; Pittman & Richmond, 2007). The Cronbach alpha ranges from .78 to .95. Construct validity was established by using contrasted group validation procedures, testing predictions about suburban vs. urban students and various ethnically diverse populations using ANOVA. Higher scores are associated with a higher the sense of school belonging. The Cronbach's alpha was found to be .92.

Academic Self-Concept Scale (ASCS). The ASCS contains 40-items designed to measure the "academic facet of general self-concept" (Reynolds, Ramirez, Magrina, & Allen, 1980, p. 1013). The response format is "1" for strongly disagree to "4" for strongly agree. Higher ratings on the instrument indicate higher academic self-concept. In 1988, Reynolds validated the instrument on White, African American, and Latino/Latina students, by correlating the ASCS with student GPAs and their scores on the Rosenberg Self-Esteem Scale. The Cronbach's alpha for the total scale is .91 (Reynolds et al., 1980). Criterion-related validity and predictive validity were established by comparing the

ASCS to the Rosenberg Self-Esteem Scale and GPA (Reynolds, 1988; Reynolds et al., 1980). Divergent validity was established by examining the relationship of the ASCS and SAT, which found a low relationship (.22) between the two measures. The Cronbach's alpha was found to be .92.

Demographic questionnaire and informed consent. A demographic questionnaire was used to collect information such as age, sex, GPA, and ethnicity. In addition, participants were asked to state whether they were enrolled at a two-year community college or four-year university. The informed consent document was agreed to electronically by choosing "yes" to agree to participate in the study or by choosing "no" to decline participation in the study. For participants who completed the survey in-person, the informed consent document required their signature for participation.

Results

Group Differences and Correlations

Results showed a non significant effect of race on the scores of each measure (ASCS, PSSM, MEIM). However, there was an interaction between sex and race for the Academic Self-Concept Scale, $F(1, 255) = 5.95, p = .02$. Post-hoc analysis could not be performed because there were only two groups for comparison in each category (Sex X Race). However, the means revealed that African Americans males had significantly lower scores than any other combination (see Figure 1).

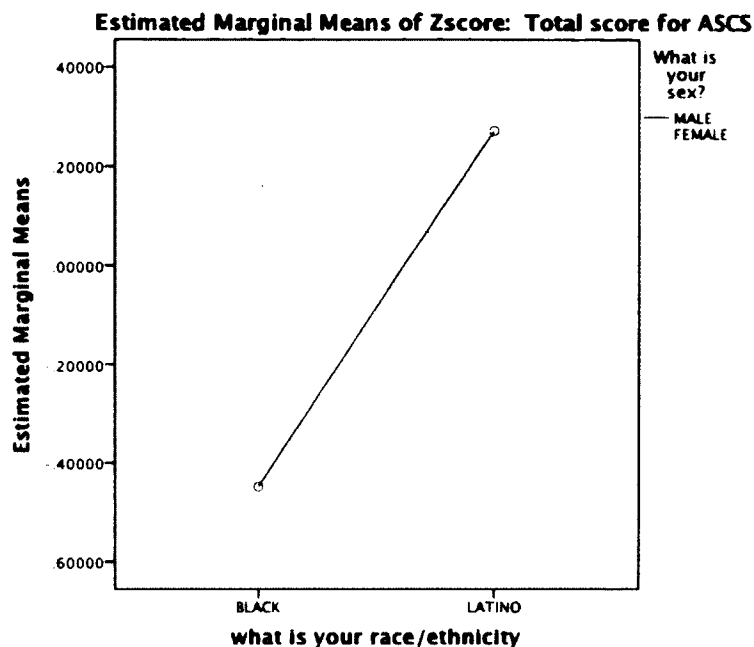


Figure 1. Graph showing the interaction of Race and Sex for scores on the ASCS.

Results indicated a negative correlation between academic self-concept and level of enrollment in postsecondary education, $r = -.13$, $n = 256$, $p = .04$. There was no significant correlation between ethnic identity and between sense of school belonging and level of enrollment in postsecondary education. In addition, there was a negative correlation between GPA and level of enrollment in postsecondary education ($r = -.50$, $n = 256$, $p = .0001$). Additionally, several other correlations were found for the sample, which are summarized in Table 1.

Table 1. Correlations
Summary of Correlations

Variable	1	2	3	4	5	6	7	8
1. Age	1	-.05	-.01	-.01	.06	.01	.01	-.01
2. Sex	-.05	1	.03	-.07	.22**	.03	.01	.11
3. Race	-.01	.03	1	-.11	.04	.05	-.03	.27**
4. College	-.01	-.07	-.11	1	-.13*	-.09	.06	-.50**
5. ZASCS	.06	.22**	.04	-.13*	1	.42**	.10	.45**
6. ZPSSM	.01	.03	.05	-.09	.42**	1	.17**	.14*
7. ZMEIM	.01	.01	-.03	.06	.10	.17**	1	-.01
8. ZGPA	-.01	.11	.27**	-.50**	.45**	.14*	-.01	1

Note. **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). Sex is coded as 0 = male, 1 = female. College is coded as 0 = four-year university, 1 = two-year community college.

Results of Logistic Regression Analysis

The dependent variable, which measures level of enrollment in postsecondary education, was coded as 0 = four-year university, and 1 = two-year community college. Additionally, when conducting a logistic regression analysis, the categorical variables must be specified and a reference category chosen. Race was coded as 0 for Latino/Latina, and 1 for African American, with Latinos/Latinas serving as the reference category. Sex was coded as 0 for female, and 1 for male, with female serving as the reference category. Nagelkerke's R^2 of .378 indicated that 37.8% of the variance in the dependent variable was explained by the predictor variables included in the model. The Wald criterion demonstrated that GPA ($p = .0001$) made a significant contribution to the prediction, after controlling for all other variables in the model, with a 95% confidence interval of [.11, .30]. Academic self-concept ($p = .01$) also made significant contribution

to the prediction, after controlling for all other variables in the model, with a 95% confidence interval of [1.14, 2.86]. The odds ratio for GPA indicates that for every one-point increase in high school GPA students are 5.4 times more likely to enroll in a four-year university. The odds ratio for academic self-concept indicate that higher academic self-concept scores lead to an increased likelihood of enrolling in a two-year university, after controlling for all other variables in the model. Lastly, there were no main or interactional effects.

Discussion

The results of this study indicate that an interaction was found between race and sex with academic self-concept in the sample. Specifically, African American males had significantly lower academic self-concept than any other race or sex combination, highlighting the need for interventions that focus on this vulnerable group.

There was negative correlation between academic self-concept and level of enrollment in postsecondary education, indicating that as academic self-concept scores decreased the likelihood of enrolling in a two-year community college increased. Only about 1.2% of the variance in level of enrollment can be accounted for by academic self-concept scores, which supports a weak but informative relationship. There was no significant relationship found between ethnic identity and sense of school belonging with level of enrollment in the current study. A possible explanation for this finding was offered by Faircloth and Hamm (2005) who found that the meaning of “school belonging” was not uniform across various ethnic groups therefore hard to correlate. Thus, it is possible that the instrument picks up “school belonging” for some ethnic groups but not others (e.g., Latinos/Latinas but not African Americans). If this is the case,

we may have an instrument validity limitation (e.g. is the instrument measuring what it is supposed to measure?).

There was a negative correlation between GPA and level of enrollment, indicating that higher GPAs were associated with enrolling in a four-year university and lower GPAs were associated with enrolling in a two-year community college with approximately 25% of the variance in enrollment being accounted for by GPA.

Additionally, a positive correlation between GPA and academic self-concept was found, meaning that as GPA increased so did academic self-concept. GPA directly accounted for about 20% of the variance in academic self-concept. These findings reveal the integral role that GPA and academic self-concept may play in enrollment in higher education for minority students. Lastly, the results showed GPA and academic self-concept to be the only significant predictors of enrollment in higher education. The current study found that students with higher GPAs are 5.4 times more likely to enroll in a four-year university, which has been supported in the literature. A number of intercorrelations involved GPA which highlights just how vulnerable GPA is to other confounding factors, which in this study were race, academic self-concept, and sense of school belonging lending support to current research that posits that GPA should not be the only measure of college admittance for students.

The finding that students with higher academic self-concept are 1.8 times more likely to enroll in a two-year community college was unexpected. Possible explanations for this finding include the idea that colleges are sometimes used as a stepping-stone to enrolling in a four-year university. In fact, Horn and Neville (2006) found that 83% of students attending community college enrolled with the goal of transferring to a four-year

university. The inverse relationship could also be related to some students entering community college with the express goal of obtaining a job certificate and/or training which was also supported in the same study finding that 42% of students reported enrolling in community college did so with the goal of obtaining job skills. A final explanation of this finding could be related to the characteristics of students enrolled in community colleges with Grimes (1997) finding that college-ready community college students demonstrated more internal locus of control, which they found to be more important in predicting academic achievement than academic self-concept. This finding suggests other confounding variables not captured in the current study. Unfortunately, the literature that compares level of enrollment (two-year vs. four-year) and student characteristics is either outdated or non-existent.

Implications for Educators

Results of this study found that African American males had significantly lower academic self-concept than African American females and Latinos/Latinas in the study. As highlighted earlier, how African Americans perceive themselves academically is directly related to how well they do in school which is further complicated in light of the phenomenon of academic disidentification, common to African Americans. Cokley et al. (2011) reported that academic disidentification occurs when there is no relationship between how students view their academic abilities and their actual academic outcomes. So when there is no direct relationship between how students view themselves and their actual outcomes, academic self-concept is adversely affected. Educators may need to find ways to identify students who have exhibited signs of academic disidentification, as well as develop new and innovative ways of encouraging motivation in those students.

Conceptually, this could possibly involve educators administering the Academic Self-Concept Scale to African American males that earn lower GPAs to examine if their view their academic abilities is influencing their academic achievement. Once identified, educators will have key information about the needs of this vulnerable group and can begin to identify strategies to improve their academic self-concept.

In addition, academic self-concept has been found to be connected to ethnic identity for adolescents and young adults (Cokley & Chapman, 2008), lending support to the need for educators to explore how students feel about their academic abilities as a whole as well as in relation to how they conceptualize their ethnic identity. Specifically, Cokley et al. (2003) highlighted that African American students did not feel that the amount of effort they put into their academics was directly related to them obtaining good grades; instead they felt that negative expectations of them also affected their academic achievement. This finding highlights the phenomenon of stereotype threat that many minority groups face (Steele & Aronson, 1995), and the increased anxiety and pressure experienced by African American students at the high school and college level, highlighting that if participants endorsed academic stereotypes about their performance they were more likely to have lower academic self-concept. These areas: exploring ethnic identity, academic self-concept, and stereotype threats, may be helpful topics for exploration for minority students who may be facing those barriers.

A positive correlation was also found between GPA and race, meaning that higher GPAs were associated with the African American participants lending support to helping students explore their ethnic identity. Educators hoping to further the academic achievement of minorities should integrate strategies for assisting ethnic identity

development into education. Ideally, this would involve taking the discussion about ethnic identity past a “Black History Month” and to a more personal level of ethnic identity exploration. A possible solution would be to incorporate a genogram project that challenges students to explore their family history, paying special attention to their ethnic identity and how it evolved throughout the generations.

A significant positive correlation was found between GPA and sense of school belonging, calling attention to the importance of educators creating welcoming and interactive environments for minority students especially. Current literature has suggested that interactions between students and faculty as well the assignment of mentors are effective ways of increasing school belonging for minority students (Faircloth & Hamm, 2005; Freeman, et al., 2007; Meeuwisse, Severiens, & Born, 2010; Roeser, et al., 1996). The concept of *school belonging* is complicated due to the lack of a uniform meaning across race (Faircloth & Hamm, 2005), and educators may want to consider how they can best form alliances with students from different ethnic groups. Some ideas include offering workshops on ethnic identity or cultural exploration/pride, having one-on-one meetings with students to increase engagement with minority students, or offering fun project/contest that asks students to be creative in identifying sources of school belonging, and more. Additionally, educators could work with students to develop a definition of school belonging and strategies for increasing their interaction in school-related activities.

The importance of exploring sense of school belonging for minorities cannot be overstated as the lack of it has psychological implications for students. Sense of school belonging did not meet the criteria for being a significant predictor for enrollment in

higher education, although coming close with an alpha of .08. Despite not being found in the current study, Hagborg (1994) found that students with lower sense of school belonging were linked to being more emotionally distressed. Furthermore, Woolfolk and Perry (2012) posited that lower sense of school belonging was related to increased dropout rates, lower self-esteem, and higher rates of delinquency and risk taking behaviors, further highlighting the importance increasing the feeling of school belonging for students. Educators and administrators can play a key role in advocating for students by conducting staff trainings around having empathy, positive regard, and more effective communication skills when interacting with students.

Limitations of the Study

Limitations included recall bias by requiring participants to respond to the survey based on their memory of their high school experiences. This was addressed by limiting the age range of participants to between 18 and 20 years of age in order to reduce time since actually being in high school. Also, due to the sensitive nature of the concepts being measured the entire survey packet may have been vulnerable to social desirability effects, which was addressed by allowing participants to self-administer the test confidentially.

Additionally, Logistic regression requires larger sample sizes, which was only partially met in the study. The sample size was met at the four-year level of enrollment but not at the two-year level. Additionally, there were only 49 Latino/Latina participants in the sample, greatly reducing power at the level of ethnicity. Despite several attempts of increasing the sample size, the results may be difficult to generalize due to the limitations in sample size.

The Internet was used as the main medium for collecting surveys, which presented additional challenges of access for some populations and verifying participant demographic information. Also, the participants used in the study were exclusively attending colleges and universities in Virginia, possibly leading to geographic influence or bias. The participants in the sample were mostly African American (81.6%) and mostly female (73.4%), limiting the generalizability of the results to other populations. Additionally, most participants were enrolled in the four-year level of postsecondary education (70.3%), which affects the ability of others to extrapolate the findings to other levels of education. While 37 schools were targeted for the study, only 11 schools approved the study for distribution at their schools greatly limiting the researcher's ability to obtain a large and representative sample from all areas of Virginia, which led to a more homogeneous sample.

Finally, participants may have become fatigued by having to take four measures, which consisted of a total of 70 questions not including the demographic questionnaire. All efforts were made to ensure that the procedures for the administration of the survey were standardized meaning the researcher attempted to explain the instructions to participants in a standardized way and that all research assistants were trained on how to explain the instructions, however, this may have also been a limitation.

Implications for Future Research

A more evenly distributed and larger sample should be sought. Special attention should be given to recruiting Latino/Latina students. Future research would also benefit by implementing a social desirability measure due to the vulnerability of self-report data. A major area of future research would be to focus on high school students currently

enrolled in high school so that the prediction would not be retrospective but predictive at the college level.

The study also lends itself to being conducted as a qualitative study that can explore the experiences of minority students at both the community college level and four-year university level. For example, a grounded theory study could identify some of the common internal barriers experienced by minorities when making their decision to enroll in higher education. Future studies may benefit from including measures to account for income, self-esteem, locus of control, and academic persistence. Additionally, future research may also consider utilizing a different ethnic identity measure that can account for various levels of ethnic identity (e.g. achieved, foreclosed, moratorium, etc.), or by using targeted ethnic identity measures based on the participant's ethnicity.

Future research would benefit from exploring other underrepresented groups in higher education such as Native Americans, which was a limitation in the current study due to access. Additionally, future research would benefit from finding more effective sampling methods at the school and participant level. A major limitation for the current study was not reaching the desired amount of schools due to being denied access to some schools and not receiving responses from other schools.

In summary, although this was just a preliminary study that sought to explore the internal components of retention and enrollment for African American and Latino/Latina students at two-year community colleges or four-year universities, there are several ways of broadening this area of research. This study endeavored to identify a set of predictors of enrollment in postsecondary education based on race and academic self-concept and

GPA were found predictors for enrollment. Future research would benefit from recruiting larger, more diverse samples that are representative geographically and racially.

References

- Altschul, I., Oyserman, D., & Bybee, D. (2006). Racial-ethnic identity in mid adolescence: Content and change as predictors of academic achievement. *Child Development, 77*(5), 1155-1169. doi:10.1111/j.1467-8624.2006.00926.x
- American Psychological Association. (2010). *Publication manual of the American psychological association* (6th edition). Washington, DC: American Psychological Association.
- Ancis, J. R., Sedlacek, W. E., & Mohr, J. J. (2000). Students perceptions of campus cultural climate by race. *Journal of Counseling Development, 78*, 180-186. doi:10.1002/j.1556-6676.2000.tb02576.x
- Anderman, E. M. (2002). School effects on psychological outcomes during adolescence. *Journal of Educational Psychology, 94*(4), 795-809. doi: 10.1037//0022-0663.94.4.795
- Anderman, L. H. (2003). Academic and social perceptions as predictors of change in middle school students' sense of school belonging. *The Journal of Experimental Education, 72*(1), 5-22. doi:10.1080/00220970309600877
- Awad, G. H. (2007). The role of racial identity, academic self-concept, and self-esteem in the prediction of academic outcomes for African-American students. *Journal of Black Psychology, 33*(2), 188-207. doi:10.1177/0095798407299513
- Bateman, M., & Hossler, D. (1996). Exploring the development of postsecondary education plans among African American and White students. *The Journal of the American Association of Collegiate Registrars, 72*(1), 2-9.
- Berk, L. E. (2012). *Infants, Children, and Adolescents* (7th ed.). Massachusetts: Allyn &

Bacon.

Bong, M., & Clark, R. E. (1999). Comparison between self-concept and self-efficacy in academic motivation research. *Educational Psychologist, 34*(3), 139-153.

doi:10.1207/s15326985ep3403_1

Booker, K. C. (2006). School belonging and the African American adolescent: What do we know and where should we go? *High School Journal, 89*(4), 1-7.

doi:10.1353/hsj.2006.0005

Bordes-Edgar, V. Arrendondo, P., Kurpius, S.R., & Rund, J. (2011). A longitudinal analysis of Latina/o students' academic persistence. *Journal of Hispanic Education, 10*(4), 358-368. doi: 10.1177/1538192711423318.

Chae, M. H. (2000, August). *Gender and ethnic identity development among college students from four ethnic groups*. Paper presented at the 108th Annual Conference of the American Psychological Association, Washington, DC.

Chavez, A. F., & Guido-DiBrito, F. (1999). Racial and ethnic identity and development. *New Directions for Adult and Continuing Education, 84*, 39-47.

CNN. (2008, August 13). Minorities expected to be majority in 2050. *CNN, U.S.*

Retrieved from [http://articles.cnn.com/2008-08-](http://articles.cnn.com/2008-08-13/us/census.minorities_1_hispanic-population-census-bureau-white-population?_s=PM:US)

[13/us/census.minorities_1_hispanic-population-census-bureau-white-population?_s=PM:US](http://articles.cnn.com/2008-08-13/us/census.minorities_1_hispanic-population-census-bureau-white-population?_s=PM:US)

Cohen, J. (1992). A power primer. *Psychological Bulletin, 122*(1), 155-159.

Coker, A. D. (2003). African American female adult learners: Motivations, challenges, and coping strategies. *Journal of Black Studies, 33* (5), 654-674.

doi:10.1177/0021934703033005007

- Cokley, K. (2000). An investigation of academic self-concept and its relationship to academic achievement in African American college students. *Journal of Black Psychology, 26*(2), 148-164. doi: 10.1177/0095798400026002002
- Cokley, K. (2002). The impact of college racial composition on African American students' academic self-concept: A replication and extension. *Journal of Negro Education, 71*(4), 288-296. doi:10.2307/3211181
- Cokley, K. O., & Chapman, C. (2008). The roles of ethnic identity, anti-white attitudes, and academic self-concept in African American student achievement. *Social Psychology of Education, 11*, 349-365. doi: 10.1007/s11218-008-9060-4
- Cokley, K., & Helm, K. (2007). The relationship between African American enculturation and racial identity. *Journal of Multicultural Counseling and Development, 35*, 142-153. doi:10.1002/j.2161-1912.2007.tb00056.x
- Cokley, K. O., Komarraju, M., King, A., Cunningham, D., & Muhammad, G. (2003). Ethnic differences in the measurement of academic self-concept in a sample of African American and European American college students. *Educational and Psychological Measurement, 63*(4), 707-722. doi: 10.1177/0013164402251055
- Cokley, K., McClain, S., Jones, M., & Johnson, S. (2011). A preliminary investigation of academic disidentification, racial identity, and academic achievement among African American adolescents. *High School Journal, 95*(2), 54-68.
- Cokley, K., & Moore, P. (2007). Moderating and mediating effects of gender and psychological disengagement on the academic achievement of African American college students. *Journal of Black Psychology, 33*(2), 169-187. doi: 10.1177/0095798407299512

- Cone, J. D., & Foster, S. L. (2006). *Dissertations and theses from start to finish: Psychology and related fields*. Washington, DC: American Psychological Association.
- Day, J. C. (n.d). *National population projections*. Retrieved from U.S. Census Bureau website: <http://www.census.gov/population/www/pop-profile/natproj.html>
- Delgado-Romero, E. A. (2001). Counseling a Hispanic/Latino client- Mr. X. *Journal of Mental Health Counseling*, 23(3), 207-221.
- East, R., & Uncles, M. D. (2008). In praise of retrospective surveys. *Journal of Marketing Management*, 24(9-10), 929-944. doi: 10.1362/026725708X381975
- Eaton, J. S. (2011). *An overview of U.S. accreditation*. Washington, DC: Council for Higher Education Accreditation.
- Edman, J. L., & Brazil, B. (2009). Perceptions of campus climate, academic efficacy, and academic success among community college students: An ethnic comparison. *Social Psychology of Educational*, 12(3), 371-383. doi: 10.1007/s11218-008-9082-y
- Education.com. (2012). *Grade point average (GPA)*. Retrieved from <http://www.education.com/definition/grade-point-average-gpa/>
- Elam, J. C. (1989). *Blacks in higher education: Overcoming the odds*. Lanham, MD: University Press of America, Inc.
- Faircloth, B. S., & Hamm, J. V. (2005). Sense of belonging among high school students representing four ethnic groups. *Journal of Youth and Adolescence*, 34(2), 293-309. doi: 10.1007/s10964-005-5752-7
- Field, A. (2009). *Discovering statistics using SPSS, 3rd edition*. Thousand Oaks, CA:

Sage Publications Inc.

Freeman, K. (1997). Increasing African Americans' participation in higher education.

Journal of Higher Education, 68(5), 523-550. doi:10.2307/2959945

Freeman, T. M., Anderman, L. H., Jensen, J. M. (2007). Sense of belonging in college

freshman at the college and campus levels. *The Journal of Experimental*

Education, 75(3), 203-220. doi:10.3200/JEXE.75.3.203-220

French, S. E., & Chavez, N. R. (2010). The relationship of ethnicity-related stressors and

Latino ethnic identity to well-being. *Hispanic Journal of Behavioral Sciences*,

32(3), 410-428. doi: 10.1177/0739986310374716

Gamst, G. C., Liang, C. T. H., & Der-Karabetian, A. (2011). *Handbook of multicultural*

measures. California: Sage Publications, Inc.

Garrett, J. T., & Walking Stick Garrett, M. (1994). The path of good medicine:

Understanding and counseling Native American Indians. *Journal of Multicultural*

Counseling and Development, 22(3), 134-144. doi:10.1002/j.2161-

1912.1994.tb00459.x

Gerardi, S. (1990). Academic self-concept as a predictor of academic success among

minority and low-socioeconomic status students. *Journal of College Student*

Development, 31, 402-407.

Gloria, A. M., & Robinson-Kurpius, S. E. (2001). Influences of self-beliefs, social

support, and comfort in the university environment on the academic

nonpersistence decisions of American Indian undergraduates. *Cultural Diversity*

and Ethnic Minority Psychology, 7(1), 88-102. doi: 10.1037//1099-9809.7.1.88

Goodenow, C. (1993a). Classroom belonging among early adolescent students:

- Relationships to motivation and achievement. *Journal of Early Adolescence*, 12(1): 21–43. doi: 10.1177/0272431693013001002
- Goodenow, C. (1993b). The psychological sense of school membership among adolescents scale development and educational correlates. *Psychology in the schools*, 30(1), 79-90. doi:10.1002/1520-6807(199301)30:1<79::AID-PITS2310300113>3.0.CO;2-X
- Gordon, K. A. (1996). Resilient Hispanic youths' self-concept and motivation patterns. *Hispanic Journal of Behavioral Sciences*, 18(1), 63-73. doi: 10.1177/07399863960181007
- Graaf, H. & Rademakers, J. (2011). The psychological measurement of childhood sexual development in Western societies: Methodological challenges. *Journal of Sex Research*, 48(2-3), 118-129. doi: 10.1080/00224499.2011.555929
- Grimes, S. K. (1997). Underprepared community college students: Characteristics, persistence, and academic success. *Community College Journal of Research and Practice*, 21(1), 47-56. doi: 10.1080/1066892970210105
- Guttman, L. M., & Midgley, C. (2000). The role of protective factors in supporting the academic achievement of poor African American students during the middle school transition. *Journal of Youth and Adolescence*, 29(2), 223-248.
- Hagborg, W. J. (1994). An exploration of school membership among middle-and high school students. *Journal of Psychoeducational Assessment*, 12, 312- 323. doi: 10.1177/073428299401200401
- Harper, S., Patton, L., & Wooden, O. (2009). Access and equity for African American

- students in higher education: A critical race historical analysis of policy efforts. *Journal of Higher Education*, 80(4), 389-414.
- Herndon, M. K., & Hirt, J. B. Black students and their families: What leads to success in college. *Journal of Black Studies*, 34(4), 489-513.
- Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2003). Investigating “sense of belonging” in first-year college students. *Journal of College Student Retention*, 4(3), 227- 256.
- Horn, L., & Nevill, S. (2006). *Profile of undergraduates in U.S. postsecondary education institutions: 2003–2004: With a special analysis of community college students* (NCES 2006-184). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Horvat, E. M. (1997). Structure, standpoint, and practices: the construction and meaning of the boundaries of blackness for African-American female high school students in the college choice process. *Paper presented at the Annual Meeting of the American Educational Research Association*, Chicago, IL, March 1997.
- Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.). New York, NY: Wiley Interscience Publication.
- Humes, K. R., Jones, N. A., & Ramirez, R.R. (2011). *Overview of race and Hispanic origin in 2010* (U.S. Census Bureau, Report No. C2010BR-02). Retrieved from <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>
- Irvin, M. J., Meece, J. L., Byun, S., Farmer, T. W., & Hutchins, B.C. (2011). Relationship

of school context to rural youth's educational achievement and aspirations.

Journal of Youth and Adolescence, 40, 1225-1242. doi: 10.1007/s10964-011-9628-8

Johnson, D. R., Soldner, M., Leonard, J. B., & Alvarez, P. (2007). Examining sense of belonging among first-year undergraduates from difference racial/ethnic groups.

Journal of College Student Development, 48(5), 525-542. doi: 10.1353/csd.2007.0054

Johnson, T. P., Jobe, J. B., O'Rourke, D., Sudman, S., Warnecke, R., Chavez, N., Chapa-Resendez, G., & Golden, P. (1997). *Dimensions of self identification among multiracial and multiethnic respondent in survey interviews*. (Research Report No. HHS 0009430486). Retrieved from The United States Census Bureau website: <http://www.census.gov/prod/2/gen/96arc/iiiiajohn.pdf>

Johnson, T. M., Kurpius, S. E., Rayle, A. D., Arredondo, P., & Tovar-Gamero, Z. G. (2005). The multidimensional inventory of Black identity: Its use with Euro-American, Latino, and Native American undergraduates. *Measurement and Evaluation in Counseling Development*, 38, 92-103.

Jones, M. D., & Galliher, R. V. (2007). Ethnic identity and psychological functioning in Navajo adolescents. *Journal of Research on Adolescence*, 17(4), 683-696. doi:10.1111/j.1532-7795.2007.00541.x

Kenyan, D. B., & Carter, J. S. (2011). Ethnic identity, sense of community, and psychological well-being among Northern Plains American Indian youth. *Journal of Community Psychology*, 39(1), 1-9.

Kenny, M. C., & McEachern, A. (2009). Children's self-concept: A multicultural

comparison. *Professional School Counseling*, 12(3), 207-212.

doi:10.5330/PSC.n.2010-12.207

Kleinbaum, D. G., & Klein, M. (2010). *Logistic regression: A self-learning text* (3rd ed.).

New York, NY: Springer.

LeBlanc, M., & Fitzgerald, S. (2000). Logistic regression for school psychologists.

School Psychology Quarterly, 15(3), 344-358. doi:10.1037/h0088791

LeCroy, C. W., & Krysik, J. (2008). Predictors of academic achievement and school attachment among Hispanic adolescents. *Children & Schools*, 30(4), 197-209.

doi:10.1093/cs/30.4.197

Lent, R. W., Brown, S. D., & Gore, P. A. (1997). Discriminant and predictive validity of academic self-concept, academic self-efficacy, and mathematics-specific self-

efficacy. *Journal of Counseling Psychology*, 44(3), 307-315. doi:10.1037//0022-0167.44.3.307

Love, D. (2008). Revitalizing retention efforts for African-American college students at predominately white institutions. Proceedings of the Academy of Educational Leadership: Allied Academies International Conference. Reno, NV: AAIC.

Lyon, M. A. (1993). Academic self-concept and its relationship to achievement in a sample of junior high school students. *Educational and Psychological*

Measurement, 53, 201-210. doi: 10.1177/0013164493053001022

Marable, M. (2008). Incarceration vs. education: Reproducing racism and poverty in America. *Racism and Regionalism*, 15(1), 59-61.

Marsh, H. W., & Craven, R.G. (2006). Reciprocal effects of self-concept and

- performance from a multidimensional perspective. *Perspectives on Psychological Science*, 1(2), 133-163. doi:10.1111/j.1745-6916.2006.00010.x
- Marsh, H. W., & Martin, A. J. (2010). Academic self-concept and academic achievement: Relations and causal ordering. *British Journal of Educational Psychology*, 81, 59-77. doi:10.1348/000709910X503501
- Marsh, H. W., & O'Mara, A. (2008). Reciprocal effects between academic self-concept, self esteem, achievement, and attainment over several adolescent years: Unidimensional and multidimensional perspectives of self-concept. *Personality and Social Psychology Bulletin*, 34(4), 542-552. doi: 10.1177/0146167207312313
- Meeuwisse, M., Severiens, S. E., & Born, M. P. (2010). Learning environment, interaction, sense of belonging, and study success in ethnically diverse student groups. *Research in Higher Education*, 51, 528-545. doi: 10.1007/s11162-010-9168-1
- Mertler, C. A., & Vannatta, R. A. (2009). *Advanced and multivariate statistical methods* (4th ed.). Glendale, CA: Pyrczak Publishing.
- Milner, H. (2004). *Long way to go: Conversations about race by African American faculty & graduate students*. New York, NY: Peter Lang Publishing.
- Moos, R. H. (1993). Review of the coping responses inventory- adult and youth. *Mental Measurements Yearbook with Tests in Print*, 14.
- Morrison, G. M., Cosden, M. A., O'Farrell, S. L., & Campos, E. (2003). Changes in Latino students' perceptions of school belonging over time: Impact of language proficiency, self-perceptions, and teacher evaluations. *The California School Psychologist*, 8, 87-98.

- Muijs, R. D. (1997). Predictors of academic achievement and academic self-concept: A longitudinal perspective. *British Journal of Educational Psychology*, 67, 263-277.
- National Center for Education Statistics. (2008). *Trends among high school seniors 1972 2004*. (NCES 2008-320). Washington, D.C.: Institute for Educational Sciences, U.S. Department of Education.
- National Center for Education Statistics. (2010). *Status and trends in the education of racial and ethnic groups*. (NCES 2010-015). Washington, D.C.: Institute for Educational Sciences, U.S. Department of Education.
- National Center for Education Statistics. (2011). *The condition of education 2011* (NCES 2011-033). Retrieved from: <http://nces.ed.gov/fastfacts/display.asp?id=72>.
- National TRIO Clearinghouse, Council for Opportunity in Education. (2003). *The Early History of the Higher Education Act of 1965*. Retrieved from <http://www.pellinstitute.org/Clearinghouse>.
- Nederhof, A. J. (1985). Methods of coping with social desirability bias: A review. *European Journal of Social Psychology*, 15, 263-280.
- Neukrug, E. (2012). *The world of the counselor: An introduction to the counseling profession* (4th ed.). California: Brooks/Cole- Thomson Learning.
- Neville, H. A., Heppner, P. P., & Wang, L. (1997). Relations among racial identity attitudes, perceived stressors, and coping styles in African American college students. *Journal of Counseling & Development*, 75, 303-311.
doi:10.1002/j.1556-6676.1997.tb02345.x
- Okeke, N. A., Howard, L. C., & Kurtz-Costes, B. (2009). Academic race stereotypes,

- academic self-concept, and racial centrality in African American youth. *Journal of Black Psychology*, 35(3), 366-387. doi: 10.1177/0095798409333615
- Ong, A. D., Phinney, J. S., & Dennis, J. (2006). Competence under challenge: Exploring the protective influence of parental support and ethnic identity in Latino college students. *Journal of Adolescence*, 29, 961-979. doi: 10.1016/j.adolescence.2006.04.010
- Osborne, J. W. (1997). Race and academic disidentification. *Journal of Educational Psychology*, 89(4), 728-735. doi: 10.1037/0022-0663.89.4.728
- Osterman, K. F. (2000). Students' need for belonging in the school community. *Review of Educational Research*, 70(3), 323-367. doi:10.3102/00346543070003323
- Oyserman, D., Harrison, K., & Bybee, D. (2001). Can racial identity be promotive of academic efficacy? *International Journal of Behavioral Development*, 25(4), 379-385. doi: 10.1080/01650250042000401
- Person, A. E., & Rosenbaum, J. E. (2006). Chain enrollment and college enclaves: Benefits and drawbacks of Latino college students' enrollment decision. *New Directions for Community Colleges*, 113, 51-60. doi: 10.1002/cc.227
- Peter, K., and Horn, L. (2005). *Gender differences in participation and completion of undergraduate education and how they have changed over time* (NCES 2005-169). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Phinney, J. S. (1989). Stages of ethnic identity development in minority group adolescents. *The Journal of Early Adolescence*, 9(34), 34-49. doi: 10.2277/0272431689091004

- Phinney, J. S. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with adolescents and young adults from diverse groups. *Journal of Adolescent Research, 7*(2), 156-176. doi:10.1177/074355489272003
- Phinney, J. S., & Alipuria, L. L. (1990). Ethnic identity in college students from four ethnic groups. *Journal of Adolescence, 13*, 171-183. doi:10.1016/0140-1971(90)90006-S
- Phinney, J. S., Cantu, C. L., & Kurtz, D.A. (1997). Ethnic and American identity as predictors of self-esteem among African Americans, Latino, and White adolescents. *Journal of Youth and Adolescence, 26*(2), 165-185. doi:10.1023/A:1024500514834
- Phinney, J. S., Dennis, J., Osorio, S. (2006). Reasons to attend college among ethnically diverse college students. *Cultural Diversity and Ethnic Minority Psychology, 12*(2), 347-366. doi: 10.1037/1099-9809.12.2.347
- Pittman, L. D., & Richmond, A. (2007). Academic and psychological functioning in late adolescence: The importance of school belonging. *The Journal of Experimental Education, 75*(4), 270-290. doi:10.3200/JEXE.75.4.270-292
- Poulsen, J., & French, A. (n.d.). Discriminant function analysis (DA). Retrieved from: <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCYQFjAA&url=http%3A%2F%2Fuserwww.sfsu.edu%2F~efc%2Fclasses%2Fbio171%2Fdiscrim%2Fdiscrim.pdf&ei=H-UZT7Qckv-xAvfsmOAL&usg=AFQjCNGqyD3fzrOUun96llv4Vt6jXKtOnQ>
- Powell, C. L., & Jacob-Arriola, K. R. (2003). Relationship between psychosocial factors

and academic achievement among African American students. *Journal of Educational Research*, 96(3), 175-181. doi:10.1080/00220670309598805

Reynolds, W. M. (1988). Measurement of academic self-concept in college students. *Journal of Personality Development*, 52(2), 223-240.

doi:10.1207/s15327752jpa5202_4

Reynolds, W. M., Ramirez, M. P., Magrina, A., & Allen, J. E. (1980). Initial development and validation of the academic self-concept scale. *Educational and Psychological Measurement*, 40, 1013-1016. doi:10.1177/001316448004000428

Robbins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg self-esteem scale. *Personality and Social Psychology Bulletin*, 27(2), 151-161. doi:10.1177/0146167201272002.

Roberts, R., Phinney, J., Masse, L., Chen, Y., Roberts, C., & Romero, A. (1999). The structure of ethnic identity in young adolescents from diverse ethnocultural groups. *Journal of Early Adolescence*, 19(3), 301-322.

doi:10.1177/0272431699019003001

Robinson-Kurpius, S. E., Payakkakom, A., Rayle, A. D., Chee, C., & Arredondo, P. (2008). The appropriateness of using three measures of self-beliefs with European American, Latino/a, and Native American college freshman. *Journal of Multicultural Counseling and Development*, 36(1), 2-14.

Roeser, R. W., Midgley, C., & Urdan, T. C. (1996). Perceptions of the school

- psychological environments and early adolescents' psychological and behavioral functioning mediating role of goals and belonging. *Journal of Educational Psychology*, 88(3), 408-422. doi: 10.1037//0022-0663.88.3.408
- Rowley, S. J. (1996). *Perceptions of discrimination and achievement in African American students*. Paper presented at the 104th Annual Meeting of the American Psychological Association, Toronto, Canada.
- Rowley, S. J., Sellers, R. M., Chavous, T. M., & Smith, M.A. (1998). The relationship between racial identity and self-esteem in African American college and high school students. *Journal of Personality and Social Psychology*, 74(3), 715-724. doi:10.1037//0022-3514.74.3.715
- Ruiz, A. S. (1990). Ethnic identity: Crisis and resolution. *Journal of Multicultural Counseling and Development*, 18(1), 29-40. doi:10.1002/j.2161-1912.1990.tb00434.x
- Russell, S. T., Ryan, C., Toomey, R. B., Diaz, R. M., & Sanchez, J. (2011). Lesbian, gay, bisexual, and transgender adolescent school victimization: Implications for young adult health and adjustment. *Journal of School Health*, 81(5), 223- 230. doi:10.1111/j.1746-1561.2011.00583.x
- Sanchez, B., Colon, Y., & Esparza, P. (2005). The role of sense of school belonging and gender in the academic adjustment of Latino adolescents. *Journal of Youth and Adolescence*, 34(6), 619-628. doi: 10.1007/s10964-005-8950-4
- Sheperis, C. J., Young, J. S., & Daniels, H. (2010). *Counseling research: Quantitative, qualitative, and mixed methods*. Upper Saddle River, NJ: Pearson Education, Inc.

- State Council of Higher Education for Virginia. (2011). *About SCHEV*. Retrieved from http://www.schev.edu/About_SCHEV.asp
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology, 69*(5), 797-811. doi: 10.1037/0022-3514.69.5.797
- Tan, H. (2010). Recruitment of participants using Facebook. *Contemporary Approaches to Research in Mathematics, Science, Health and Environmental Education, 1-5*. Retrieved from <http://www.deakin.edu.au/arts-ed/efi/conferences/car-2010/papers/tan-recruitment-facebook.pdf>
- Torres, V. (1999). Validation of the bicultural orientation model for Hispanic college students. *Journal of College Student Development, 43*, 285-298.
- Torres, V. (2003). Influences on ethnic identity development of Latino college students in the first two years of college. *Journal of College Student Development, 44*(4), 532-547. doi:10.1353/csd.2003.0044
- Umana-Taylor, A. J., Gonzales-Backen, M. A., & Guimond, A. B. (2009). Latino adolescents' ethnic identity: Is there a developmental progression and does growth in ethnic identity predict growth in self-esteem? *Child Development, 80*(2), 391-405.
- U.S. Census Bureau. (2008). An older and more diverse nation by mid-century [Press Release]. Washington, DC: U.S. Department of Commerce. Retrieved from <http://www.census.gov/press-release/www/releases/archives/population/012496.html>
- U.S. Census Bureau. (2012). Most children younger than age 1 are minorities [Press

- Release]. Washington, DC: U.S. Department of Commerce. Retrieved from <http://www.census.gov/newsroom/releases/archives/population/cb12-90.html>
- United States Census Bureau. (2012). *The American Indian and Alaska Native population*. Washington, DC: U.S. Government Printing Office.
- United States Census Bureau. (2012). *Race*. Retrieved from <http://www.census.gov/population/race/>
- Vandiver, B. C. (2001). Cross's nigrescence model: From theory to scale to theory. *Journal of Multicultural Counseling & Development, 29*(3), 173-200. doi:10.1002/j.2161-1912.2001.tb00516.x
- Vandiver, B. J., Worrell, F. C., & Delgado-Romero, E. A. (2009). A psychometric examination of multidimensional inventory of Black identity (MIBI) scores. *Assessment, 16*(4), 337-351. doi:10.1177/1073191109341958
- Walpole, M. (2008). Emerging from the Pipeline: African American Students, Socioeconomic Status, and College Experiences and Outcomes. *Research in Higher Education, 49*(3), 237-255. doi:10.1007/s11162-007-9079-y
- Wiersma, W., & Jurs, S. G. (2009). *Research methods in education*. Boston, MA: Pearson Education, Inc.
- Woolfolk, A., & Perry, N. E. (2012). *Child and adolescent development*. New Jersey: Pearson Education Inc.
- You, S., Ritchey, K. M, Furlong, M. J., Shochet, I. & Boman, P. (2011). Examination of latent Structure of the psychological sense of school membership scale. *Journal of Psychological Assessment, 29*(3), 225-237. doi: 10.1177/0734282910379968
- Zarate, M. E., Bhimji, F., & Reese, L. (2005). Ethnic identity and academic achievement

among Latino/a adolescents. *Journal of Latinos and Education*, 4(2), 94-114.

Appendix A

Demographic Questionnaire	
Participant Code: _____	
1. Age: _____	
2. Sex:	
<input type="checkbox"/> Female	
<input type="checkbox"/> Male	
3. Race/Ethnicity: <i>If you are of a multiracial background, please select the race you primary identify.</i>	
<input type="checkbox"/> Black/African-American	
<input type="checkbox"/> White/European/Caucasian American	
<input type="checkbox"/> Hispanic/Latino/Latina	
<input type="checkbox"/> Native American	
<input type="checkbox"/> Multiracial (please indicate your racial background):	
<input type="checkbox"/> Other: _____	
4. Please list the city you currently live in: _____	
5. Please list your final high school GPA: _____	
6. Are you enrolled in a two- year community college?	
<input type="checkbox"/> Yes <input type="checkbox"/> No	
7. Are you enrolled in a four- year university?	
<input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Are you enrolled in a vocational school?	
<input type="checkbox"/> Yes <input type="checkbox"/> No	

Appendix B

Multigroup Ethnic Identity Measure

In this country, people come from many different countries and cultures, and there are many different words to describe the different backgrounds or *ethnic groups* that people come from. Some examples of ethnic groups are Latino, African American, Mexican, Asian American, Chinese, and many others. These questions are about your ethnicity or your ethnic group and how you feel about it or react to it.

Please fill in: In terms of ethnic group, I consider myself to be _____
Use the numbers below to indicate how much you agree or disagree with each statement.

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

- 1- I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs. _____
- 2- I am active in organizations or social groups that include mostly members of my own ethnic group. _____
- 3- I have a clear sense of my ethnic background and what it means for me. _____
- 4- I think a lot about how my life will be affected by my ethnic group membership. _____
- 5- I am happy that I am a member of the group I belong to. _____
- 6- I have a strong sense of belonging to my own ethnic group. _____
- 7- I understand pretty well what my ethnic group membership means to me. _____
- 8- In order to learn more about my ethnic background, I have often talked to other people about my ethnic group. _____
- 9- I have a lot of pride in my ethnic group. _____
- 10- I participate in cultural practices of my own group, such as special food, music, or customs. _____
- 11- I feel a strong attachment towards my own ethnic group. _____
- 12- I feel good about my cultural or ethnic background. _____

Appendix C

Psychological Sense of School Membership Scale (PSSM)

Age: _____ Please circle: Male/Female

Read each sentence carefully and circle a number to show how true it is for you.

Remember, there are no right or wrong answers.

		Not at all true	←————→			Completely true
1.	I feel like a real part of my school.	1	2	3	4	5
2.	People here notice when I am good at something.	1	2	3	4	5
3.	It is hard for people like me to be accepted here.	1	2	3	4	5
4.	Other students in the school take my opinions seriously.	1	2	3	4	5
5.	Most teachers at (name of school) are interested in me.	1	2	3	4	5
6.	Sometimes I feel as if I do not belong here.	1	2	3	4	5
7.	There is at least one teacher or other adult in this school that I can talk to if I have a problem.	1	2	3	4	5
8.	People at this school are friendly to me.	1	2	3	4	5
9.	Teachers here are not interested in people like me.	1	2	3	4	5
10.	I am included in lots of activities in my school.	1	2	3	4	5
11.	I am treated with as much respect as other students.	1	2	3	4	5
12.	I feel very different from most other students here.	1	2	3	4	5
13.	I can really be myself at this school.	1	2	3	4	5
14.	The teachers here respect me.	1	2	3	4	5
15.	People here know I can do good work.	1	2	3	4	5
16.	I wish I were in a different school.	1	2	3	4	5
17.	I feel proud of belonging to my school.	1	2	3	4	5
18.	Other students here like me the way I am.	1	2	3	4	5

Appendix D: Academic Self-Concept Scale

ASCS/Reynolds

COLLEGE ATTITUDE SURVEY

Name/ID# _____

Listed below are a number of statements concerning school-related attitudes. Rate each item as it pertains to you personally. Base your ratings on how you feel most of the time. INDICATE YOUR RESPONSE BY CIRCLING THE APPROPRIATE NUMBERS. Be sure to answer all items. Please response to each item independently; do not be influenced by your previous choices.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Being a student is a very rewarding experience.	1	2	3	4
2. If I try hard enough, I will be able to get good grades.	1	2	3	4
3. Most of the time my efforts in school are rewarded.	1	2	3	4
4. No matter how hard I try I do not do well in school.	1	2	3	4
5. I often expect to do poorly on exams.	1	2	3	4
6. All in all, I feel I am a capable student.	1	2	3	4
7. I do well in my courses given the amount of time I dedicate to studying.	1	2	3	4
8. My parents are not satisfied with my grades in college.	1	2	3	4
9. Others view me as intelligent.	1	2	3	4
10. Most courses are very easy for me.	1	2	3	4
11. I sometimes feel like dropping out of school.	1	2	3	4
12. Most of my classmates do better in school than I do.	1	2	3	4
13. Most of my instructors think that I am a good student.	1	2	3	4
14. At times I feel college is too difficult for me.	1	2	3	4
15. All in all, I am proud of my grades in college.	1	2	3	4
16. Most of the time while taking a test I feel confident.	1	2	3	4
17. I feel capable of helping others with their class work.	1	2	3	4
18. I feel teachers' standards are too high for me.	1	2	3	4
19. It is hard for me to keep up with my class work.	1	2	3	4
20. I am satisfied with the class assignments that I turn in.	1	2	3	4
21. At times I feel like a failure.	1	2	3	4
22. I feel I do not study enough before a test.	1	2	3	4
23. Most exams are easy for me.	1	2	3	4
24. I have doubts that I will do well in my major.	1	2	3	4
25. For me, studying hard pays off.	1	2	3	4
26. I have a hard time getting through school.	1	2	3	4
27. I am good at scheduling my study time.	1	2	3	4
28. I have a fairly clear sense of my academic goals.	1	2	3	4
29. I'd like to be a much better student than I am now.	1	2	3	4
30. I often get discouraged about school.	1	2	3	4
31. I enjoy doing my homework.	1	2	3	4
32. I consider myself a very good student.	1	2	3	4
33. I usually get the grades I deserve in my courses.	1	2	3	4
34. I do not study as much as I should.	1	2	3	4
35. I usually feel on top of my work by finals week.	1	2	3	4
36. Others consider me a good student.	1	2	3	4
37. I feel that I am better than the average college student.	1	2	3	4
38. In most of the courses, I feel that my classmates are better prepared than I am.	1	2	3	4
39. I feel that I do not have the necessary abilities for certain courses in my major.	1	2	3	4
40. I have poor study habits.	1	2	3	4

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Appendix E: Research Solicitation Packet

Letter to Research and Assessment Coordinators

September 2012

Dear Administrator:

I am a graduate student working on my dissertation in Counselor Education and Supervision at Old Dominion University. The title of my study is Factors that Influence Minority Student Enrollment at Various Levels of Postsecondary Education (IRB Approval # 12-164). This quantitative study attempts to gain a better understanding of the factors that influence minority student enrollment in institutions of higher education. Several factors will be explored such as the importance of sex (gender), high school GPA, income, racial identity, academic self-concept, and sense of school belonging for undergraduate African American and Latino/Latina students between the ages of 18-20 who are enrolled in vocational schools, two-year community college, or four-year universities. Through this research, I hope to further the literature regarding the enrollment and retention strategies for minority students and increase enrollment of minority students in institutions of higher education. I have attached my research design and methodology section and plan for analyzing the data.

In order to assist in the data collection phase of the study, I am asking that you send the message below in the body of an email to all of your students, and the Letter to Participants document as an attachment. In the body of the email to your students, could you please include the following message:

Students, if you are African American or Latino/Latina/Hispanic between the ages of 18-20, please consider taking a few minutes of your time to be a part of a research study. At your convenience, you will complete an online survey based on your high school experiences. There is also a chance to win one of several gift cards as a thank you for your participation! If you qualify for the study, please read the attached letter and click on the link at the bottom of the survey. Thanks!

Also, it would be helpful to increase participation if the study could be offered as extra credit in some classes. In some psychology programs, for example, there is a research participation requirement for students so I would like to work with those instructors as well to increase participation.

The administration of the instruments is anticipated to take 25-35 minutes. The first instrument to be given will be the demographic form, which should take approximately two minutes. The second instrument will be Multigroup Ethnic Identity Measure (MEIM), which should take approximately seven minutes. The third instrument to be administered will be the Academic Self-Concept Scale (ASCS), which should take approximately 15 minutes. The last instrument will be the Psychological Sense of School Membership Scale (PSSM), anticipated to take approximately 10 minutes.

Participation in this study will be voluntary and confidentiality of participants will be maintained. Questions about this study can be directed to me or to my supervising professor, Dr. Ed Neukrug, Department of Counseling and Human Services, eneukrug@odu.edu, 757-683-6497.

Thank you for taking the time to consider assisting me with this research.

Dr. Edward Neukrug
Responsible Project Investigator
Old Dominion University
110 Education Building
Norfolk, VA 23529
757-683-6497
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LaShauna Dean
Principle Co-Investigator
Old Dominion University
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Norfolk, VA 23529
757-749-3593
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Attachments: Informed Consent and Letter to Participants.

Letter to Participants

September 2012

Dear Participant:

My name is LaShauna Dean and I am a Doctoral student at Old Dominion University. For my dissertation, I am examining the association between gender, income, GPA, racial identity, academic self-concept, and sense of school belonging for undergraduate minority students' who are enrolled higher education. Because you are an African American or Latino/Latina/Hispanic student between the ages of 18-20 enrolled in postsecondary education, I am inviting you to participate in this research study by completing a brief online survey.

The following questionnaire will require approximately 25-35 minutes to complete. There is no compensation for responding nor is there any known risk. However, there is a chance to win one of (3) \$25 gift certificates, by submitting your email address at the completion of the survey. In order to ensure that all information will remain confidential, please *do not* include your name anywhere on the survey. Copies of the project will be provided to Dr. Ed Neukrug at Old Dominion University and other members of my dissertation committee. If you choose to participate in this project, please answer all questions as honestly as possible based on your high school experiences and return the completed questionnaires promptly to the research assistants or your instructor. Participation is strictly voluntary and you may refuse to participate at any time.

Thank you for taking the time to assist me in my educational endeavors. The data collected will provide useful information regarding factors that influence minority students to obtain higher education. If you would like a summary copy of this study please send a request to: LaShauna Dean, 110 Education Building, Norfolk, VA 23529. Completion and return of the questionnaire will indicate your willingness to participate in this study. If you require additional information or have questions, please contact me at the number listed below.

If you are not satisfied with the manner in which this study is being conducted, you may report (anonymously if you so choose) any complaints to the Dr. Ed Neukrug, Old Dominion University, Counseling and Human Services Program, 757-683-3326.
Sincerely,

Dr. Edward Neukrug
Responsible Project Investigator
Old Dominion University
110 Education Building
Norfolk, VA 23529
757-683-6497

LaShauna Dean
Principle Co-Investigator
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IF YOU AGREE TO PARTICIPATE IN THIS STUDY, CLICK ON THE FOLLOWING LINK:

<http://edu.surveymoz.com/s3/1012737/Factors-that-Influence-Minority-Student-Enrollment-at-Variou-Levels-of-Postsecondary-Education>

PARTICIPANT NOTIFICATION STATEMENT OLD DOMINION UNIVERSITY

PROJECT TITLE: Factors that Influence Minority Student Enrollment at Various Levels of Postsecondary Education.

INTRODUCTION

The purposes of this form are to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. The study is called Factors that Influence Minority Student Enrollment at Various Levels of Postsecondary Education and will be conducted at various schools in Virginia through an online survey distribution process.

RESEARCHERS

Responsible Project Investigator: Dr. Edward Neukrug, Professor in the Counseling & Human Services Program, Department of Education. Co-Principle Investigator: LaShauna Dean-Nganga, Doctoral student in the Counselor Education and Supervision program, under the Department of Education.

DESCRIPTION OF RESEARCH STUDY

This quantitative study endeavors to gain a better understanding of the factors that influence minority student enrollment in postsecondary schools. This research has the potential to address an important literature gap and provide implications that can benefit various stakeholders in Colleges of Education specifically and colleges and universities in general. If you agree to participate in the study, it is anticipated to take approximately 25-35 minutes to complete. During the online survey, you will be answering a series of questions based on your high school experiences. Approximately 360 other students will be participating in this study.

EXCLUSIONARY CRITERIA

You should have classified yourself as either African American or Latino/Hispanic and be between the ages of 18-20 during the demographic questionnaire in order to participate in this study. To the best of your knowledge, you should not have any intellectual disabilities or serious mental health concerns that would keep you from participating in this study.

RISKS AND BENEFITS

RISKS: If you decide to participate in this study, then you may face a risk of some discomfort as you address any of the questions posed. The researcher tried to reduce these risks by providing support via assigned research assistants and/or providing the contact information for primary researchers. And, as with any research, there is some possibility that you may be subject to risks that have not yet been identified. **BENEFITS:** There are no direct benefits for participation in the study however your participation in this study is helping to further the understanding of ways minority students can increase enrollment in higher education.

COSTS AND PAYMENTS

There are no direct payment for participation in this study however participants will be entered into a drawing to win several gift cards. At the completion of the online survey, you will be given an opportunity to enter your email address to win one of several gift cards. Participation in this study is not expected to cost any additional money.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY

The researchers will take reasonable steps to keep private information, such as keeping the questionnaires and demographic sheet utilized, confidential. The researcher will remove any identifying information on the questionnaires utilized, destroy the questionnaires once the data is entered, and store information in a locked filing cabinet prior to its processing and once processed the data will be saved to a password protected shared account. The results of this study may be used in reports, presentations, and publications; but the researcher will not identify you. Of course, your records may be subpoenaed by court order or inspected by government bodies with oversight authority.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Your decision will not affect your relationship with your school, or otherwise cause a loss of benefits to which you might otherwise be entitled.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of psychological distress arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such harm. In the event that you suffer injury as a result of participation in any research project, you may contact Dr. Ed Neukrug at 757-683-6497, Ms. LaShauna Dean at 757-749-3593, or George Maihafer the current IRB chair at 757-683-4520 at Old Dominion University. Either will be glad to review the matter with you. You may additionally contact the Office of Research at 757-683-3460.

VOLUNTARY CONSENT

By agreeing with this form and taking the survey, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them: Dr. Edward Neukrug at 757-683-6497 or Ms. LaShauna Dean at 757-749-3593. If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call George Maihafer, the current IRB chair, at 757-683-4520, or the Old Dominion University Office of Research, at 757-683-3460.

INVESTIGATOR'S STATEMENT

I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws, and promise compliance. I have answered the subject's questions and have encouraged him/her to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

Investigators Printed Name and Signature

Date:

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Appendix F: Email Solicitation sent to Students and posted on Facebook

Dear Students, please consider helping me with my dissertation study. If you are African American or Latino/Latina/Hispanic between the ages of 18-20, please consider taking a few minutes of your time to be a part of a research study. At your convenience, you will complete an online survey based on your high school experiences. There is also a chance to win one of several gift cards as a thank you for your participation!

Here is the link:

[http://edu.surveymoz.com/s3/1012737/Factors-that-Influence-Minority-](http://edu.surveymoz.com/s3/1012737/Factors-that-Influence-Minority-Student-Enrollment-at-Variou-Levels-of-Postsecondary-Education)

[Student-Enrollment-at-Variou-Levels-of-Postsecondary-Education](http://edu.surveymoz.com/s3/1012737/Factors-that-Influence-Minority-Student-Enrollment-at-Variou-Levels-of-Postsecondary-Education)

VITA

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LaShauna Dean earned a Bachelor of Arts in Psychology in 2004 from Virginia Wesleyan College and a Masters of Arts in Counseling in 2008 from Regent University. She is a Nationally Certified Counselor, Certified Substance Abuse Counselor and is a Licensed Professional Counselor in Maryland.

Ms. Dean has worked in the field of mental health counseling for over seven years in a variety of roles. She has worked with clients diagnosed with Axis I and II disorders as a counselor, substance abuse clinician, case manager, crisis intervention worker, and intake/assessment clinician. She specializes in clinical diagnosis and treatment planning, diversity and social justice research, and research design and methodology. She currently is on dissertation fellowship while completing her dissertation.

Ms. Dean is active in community service and has worked with local agencies to improve service provision to clients. In addition, she has engaged in service to the counseling profession through the American Counseling Association, Chi Sigma Iota (Omega Delta Chapter President), Association for Assessment in Counseling and Education, Association for Counselor Education and Supervision, and International Association of Addictions and Offender Counselors.