The Relationship Between Demographic Similarity in Youth Mentoring Dyads and College Student Academic and Emotional Functioning

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ABSTRACT

Mentoring programs often match youth with mentors of the same race or sex, but the research linking matching practices to improved outcomes is limited and mixed. Extant literature also fails to assess whether the degree of demographic similarity (i.e. matching on both race and sex versus matching on sex alone) in mentoring dyads influences mentoring benefit. The present study examines the extent to which the level of mentor and mentee demographic similarity is associated with college student academic and emotional functioning, and whether those associations vary by sex of the student and the context of the mentoring relationship. This study also examines whether age difference between the mentor and mentee is associated with academic and emotional functioning. Analyses were based on a sample of 288 undergraduate students who participated in a survey study examining associations between participation in youth mentoring and college student wellbeing; all participants in the sample endorsed having a mentoring experience. Academic and emotional functioning was assessed via self-report measures of college self-efficacy, academic motivation, anxiety, emotion regulation, perceived stress, and self-esteem. Results suggest that a greater degree of demographic similarity in youth mentoring dyads is not associated with more positive functioning; specifically, mentees matching with their mentor on one demographic characteristic (i.e. race or sex) scored higher on measures of academic functioning in college than mentees matching with their mentor on multiple demographic characteristics. Furthermore, race matching in mentoring relationships appears to be important for college self-efficacy for males or mentees participating in program-based mentoring while sex matching is more strongly associated with academic motivation for individuals in natural mentoring relationships.

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION AND GENERAL INFORMATION

Youth Mentoring

Youth mentoring has emerged in recent decades as an efficacious intervention modality for improving a broad range of developmental outcomes in participating youth (DuBois, Portillo, Rhodes, Silverthorn & Valentine, 2011; Raposa, Rhodes & Herrera, 2016). Youth mentoring describes a relationship between a child or adolescent and a nonparental adult, in which the intent of the relationship involves helping promote positive youth development (DuBois et al., 2011). Emotional connection, guidance, and support and are thought to be key ingredients of effective mentoring relationships (DuBois & Karcher, 2014). Millions of volunteers yearly engage in formal program-based mentoring relationships within an organization (Raposa, Ben-Eliyahu, Olsho & Rhodes, 2018); an even greater number of adults are involved in mentoring relationships that develop naturally through interactions with youth in their everyday lives (DuBois & Silverthorn, 2005).

Meta-analytic studies suggest mentoring improves youth behavioral, social, emotional, and academic outcomes (DuBois, Holloway, Valentine, & Cooper, 2002; Dubois et al., 2011; Raposa et al., 2019). Research on positive youth development points to the importance of youth-adult relationships in optimizing successful development (DuBois & Rhodes, 2006; Lerner, Napolitano, Boyd, Mueller & Callina, 2014). In line with this message, mentoring practices have proliferated across youth programs, schools, and within intervention-based science (DuBois et al., 2011). Program-based mentoring opportunities, in which organizations facilitate pairing a child or youth with an adult volunteering within the program, offer a degree of control that leaves room for examining best-practice techniques to ensure efficacious mentoring experiences. While research establishes that mentoring programs are generally beneficial to youth who participate,

the positive effects can often be marginal, and the benefits may attenuate long-term following the termination of a mentoring experience (Raposa et al., 2019; DuBois et al., 2002; DuBois et al., 2011; Herrera, Grossman, Kauh, & McMaken, 2011). In developing youth mentoring interventions to benefit at-risk child populations and minority youth, it is crucial to understand what characteristics of a youth-adult dyad influence the quality of that experience and any long-term outcomes that might arise from mentoring. Examination of the personal qualities and identity characteristics of each individual in a mentoring relationship may reveal important insights into how to enhance the effectiveness of youth mentoring.

CHAPTER TWO: LITERATURE REVIEW

Theoretical Frameworks in Relationship Matching

Matching youth with mentors based on demographic characteristics could be a practice that influences, for better or worse, the impact of mentoring on youth functioning. Research that informs the process of formal mentor pairing to create more successful relationships could increase the benefit of mentoring programs. Many existing theoretical frameworks suggest that similarity (measured on various characteristics of personality, demographics, etc.) between a mentor and a youth mentee would be an important consideration in the benefit of a mentoring relationship.

The Similarity-Attraction Paradigm suggests that individuals tend to seek out and maintain relationships with those that are similar to themselves (Byrne, 1971). In line with this framework, youth who feel more connected to their mentor because of shared characteristics (e.g. race or gender) may experience greater benefits from mentoring interventions than youth who come from different backgrounds. A lack of consideration for the application of this theory could explain some of the marginal effect sizes research has shown mentoring interventions to produce (DuBois et al., 2002). However, it is worth noting that a mentoring relationship where individuals are not demographically similar may also have its advantages. Receiving advice and support from someone from a different race, ethnicity, or sex could afford different perspectives and resources that may not be available to youth matched with mentors possessing shared characteristics. Regardless, understanding the application of similarity-attraction as it relates to mentoring dyads could inform helpful strategies for mentoring organizations to implement.

Ragins' theoretical framework on diversified mentoring relationships posits that the demographic configuration of the mentoring relationship impacts the type of guidance and

support the mentor delivers (Ragins, 1997). It seems reasonable to speculate that youth falling under certain demographic categories may be especially affected by mentors from similar backgrounds. Youth that belong to marginalized categories of identity may be comforted and feel a greater sense of support from the guidance of someone who has experienced similar challenges associated with membership in one's marginalized group. A mentor with a similar background or shared identity can provide youth with a positive prototype that increases self-efficacy, anecdotal evidence of success in spite of shared circumstances, and a greater semblance of trust due to the ability to bond with an "ingroup" member rather than someone considered to be "the other" (Sosik & Godshalk, 2005). Again, this is a framework that outlines an unparsed element in how we construct successful youth mentoring relationships.

Similarly, Critical Race Theory (CRT) asserts that racism is derived from socially-constructed categories that are manipulated by the dominant racial group in order to maintain power. CRT also suggests that racism permeates all social circumstances, relationships, and identities, and no one is exempt from its effects (Abrams & Moio, 2009). From a CRT standpoint, in a mentoring dyad in which the mentor is a member of the dominant racial group and the youth mentee is not, there will be a limit in how supportive that relationship will be, specifically regarding the mentor understanding a minority narrative (Park, Yoon & Crosby, 2016). This could result in a decrement of positive youth outcomes in comparison to a mentoring relationship where that demographic category is the same. A comparable paradigm could be applied to gender; a mentor who identifies as a member of the dominant male demographic may be unintentionally inept at providing optimal support of a youth mentee who belongs to the more marginalized female group. These theoretical considerations have spurred valid questions about how to

manipulate the conditions and characteristics of mentoring relationships to make them increasingly beneficial to diverse populations of youth.

Prior Research on Matching Practices

The benefits of mentoring for at-risk youth are not generalizable across diverse combinations of mentor and mentee identity characteristics; a youth's gender and race appear to meaningfully impact how mentoring benefits their functioning and development (Tenenbaum, Crosby & Gliner, 2001). This fact, along with the theoretical postulations previously summarized, has increased empirical research examining the importance of mentor matching practices (Blake-Beard, Bayne, Crosby, & Muller, 2011; Noe, 1988). While intuitively one might think that matching youth with mentors based on race, ethnicity, or gender should be a best practice, empirical evidence yields mixed and marginal results in support of matching on demographic similarity to improve mentor relationships (Blake-Beard et al., 2011; Ensher & Murphy, 1997). In metanalyses of mentoring program efficacy, various matching criteria utilized by programs (i.e., gender, race/ethnicity) were not consistently significant moderators of program effect size (DuBois et al., 2002; DuBois et al., 2011). It is also important to note that studies have varied in how mentorship success or effectiveness is measured, examining both perceptions of the relationship quality and aspects of youth wellbeing as outcomes (Blake-Beard et al., 2011).

Raposa et al. (2016) conducted a study examining match characteristics as they relate to duration of formal, program-based mentoring relationships and found that racial and ethnic similarity between a mentor and youth mentee predicted longer mentorship duration. A study conducted by Kalbfleisch and Davies (1991) found that among a sample of professionally-based mentoring relationships that included diverse racial and ethnic compositions, African American mentees indicated a stronger connection with African American mentors than they did with White

mentors. In contrast, a study from Rhodes, Grossman, and Roffman (2002) suggested that formal cross-race mentoring dyads maintained longer relationships than mentoring pairs from the same racial/ethnic category (Rhodes, Grossman, & Roffman, 2002). Regarding sex matching in mentoring relationships, research suggests that female youth need more psychosocial support than male youth, and that female mentors provide more psychosocial support than male mentors (Ensher & Murphy, 1997). It is possible that a male mentor may not be able to provide sufficient support to a female youth mentee. However, reports of relationship closeness are not significantly different between same-sex and cross-gender mentoring pairs (Herrera et al., 2007). One significant limitation of these particular investigations is that they neglect to examine how matching practices influence specific domains of outcomes following a mentoring experience (i.e. associations with subsequent psychological or academic functioning). While greater perceived relationship quality and mentoring relationship duration is associated with better outcomes (Allen &. Eby, 2008; DuBois & Neville, 1997), understanding the direct relationship between demographic similarity and particular areas of functioning may make stronger arguments about the utility of matching practices.

Matching practices and psychosocial functioning.

In light of the fact that mentoring often improves the psychosocial and emotional functioning of youth who participate, it would be beneficial to understand whether matching practices influence the effectiveness of mentoring experiences. However, literature examining demographic similarity in mentoring relationships and subsequent emotional or psychological outcomes is limited. Karcher, Roy-Carlson, and Benne (2006) reported that ethnic similarity for Latinx youth participating in a school-based mentoring program was not significantly related to improved social skills or self-esteem (Karcher, Roy-Carlson, & Benne, 2006). Wyatt (2000) found that African American male youth in mentoring relationships matched on race/ethnicity

displayed higher levels of self-concept and identity than those in cross-race mentoring relationships (Wyatt, 2000). There is also some evidence that children have better parent-reported peer relations when they participate in mentoring relationships not matched on race (Rhodes, Grossman, & Roffman, 2002).

Matching practices and academic functioning.

Academic trajectory and functioning are specific domains frequently considered in the context of examining youth mentoring efficacy; demographic matching in mentoring dyads may influence the ways in which a youth mentee benefits from instrumental academic support from their mentor. Existing research examines mentor matching across multiple academic contexts. Campbell and Campbell (2007) found no advantages in academic success or motivation when students and mentors were matched based on gender, but did find higher cumulative GPAs, graduation rates, and an increased likelihood of entering graduate study for students with a mentor of the same ethnicity (Campbell & Campbell, 2007). Other studies find no significant differences in children's academic performance between mentoring relationships matched on race or not matched on race (Mason, 2007). Blake-Beard and colleagues (2011) established that while female students and students of color report that having a mentor with shared demographic characteristics was important, evidence did not suggest that matching STEM students with a mentor based on race or gender significantly influenced academic outcomes (Blake-Beard et al., 2011). Furthermore, in a study of Mexican American high school students, Flores and Obasi found that students reporting a natural mentoring relationship with someone of the same sex or ethnic background did not have higher scores on measures of career interest or self-efficacy (Flores & Obasi, 2005).

Existing literature also indicates there may be differences in how matching in mentor relationships affects both male and female youth. Spencer et al., (2018) in an examination of the

role of gender in youth mentoring relationship duration and quality, found that male youth who were matched with male mentors were more likely to have a longer lasting mentor experience and reported stronger mentoring relationships compared to female youth who were matched with female mentors (Spencer, Drew, Walsh & Kanchewa, 2018). Additionally, mentoring programs serving larger proportions of male youth and employing larger proportions of male mentors yield stronger effects (Dubois et al., 2011; Raposa et al., 2019). Key disparities in the relational patterns and social needs of male and female youth may influence the salience of matching on mentoring benefit. Female youth report lower quality relationships with parents and guardians compared to male youth, and tend to participate in mentoring programs because of relational challenges with their primary caregivers (Rhodes, Lowe, Litchfield, & Walsh-Samp, 2008; Raposa et al., 2019). Additionally, females are more likely than males to engage in co-ruminating behavior in their dyadic relationships, spending extensive time discussing personal problems and focusing on negative feelings (Spendelow, Simonds & Avery, 2017; Rose, 2002). This may be evidence of a more complex level of interpersonal labor necessary to benefit female youth in the mentoring context. The ways in which matching on demographic characteristics influences the ability of mentors to meet the unique needs and expectations of their mentees could vary by mentee sex.

Mentor-Mentee Age Difference as a Factor of Influence

In light of theory regarding how similarity affects relationships and literature examining how demographic characteristics affect mentoring efficacy, there are identity-bound aspects of mentoring dyads that are crucial to understand. Most research examining the influence of mentor demographic characteristics on mentor relationship quality has focused on gender and race but has neglected to assess whether the age difference between a child and their mentor influences the development of a beneficial mentoring relationship. This is an important topic of exploration

because mentoring programs recruit volunteers from all stages of life. It remains an open question whether individuals too far from or too close to the age of their mentee can serve as an effective source of support. A mentor closer in age may be better able to relate and communicate with their mentee but may have limited experience and intellectual support to offer. Alternatively, mentors further from their mentee's age can provide more experiential life guidance and support but may find it difficult to connect with a mentee much younger than them, interfering with their ability to form a strong alliance or interpersonal connection.

Some literature suggests that mentoring is more beneficial for youth in late elementary school, and less meaningful for adolescents (Kupersmidt, Stump, Stelter, & Rhodes, 2017), but previous studies fail to explore what age mentor is best for participating youth. Peer mentoring programs and interventions that pair youth with older peers have also increased in popularity over the past decade. It is speculated that youth may be more receptive to guidance and instruction around effective coping, social practices, and academic behaviors when it comes from a mentor who is less removed from the youth's own experiences. Researchers investigating the efficacy of peer mentoring programs find that the positive impacts of these programs often approximate those of programs where youth are paired with adults (DuBois et al., 2011; Karcher, 2005). Despite these findings, no study has established whether there is an age difference between the mentee and mentor at which the positive benefits of mentoring are assuaged.

It is also possible that the extent to which age difference is associated with domains of youth functioning following a mentoring experience depends on the sex of the mentee. In light of some evidence suggesting that the benefits of matching on race or sex varies for male and female mentees (Blake-Beard et al., 2011; Spencer, Drew, Walsh & Kanchewa, 2018; Wyatt, 2000), it is worth considering whether the relative importance of having a mentor closer to or father from

the age of the youth may depend on the sex of the mentee. The relational needs of female youth relative to male youth are more complex and require greater attention to relational and psychosocial needs (Rhodes, Lowe, Litchfield, & Walsh-Samp, 2008; Raposa et al., 2019). It is possible that female mentees may be more sensitive to the mentor-mentee age difference than male mentees. Through sheer opportunity, older mentors on average have accumulated a larger and more diverse set of learning experiences (e.g. professional and relational) than younger mentors. It could be argued that these learning experiences provide a context for delivering higher-quality relational or instrumental support to mentees, which may be particularly important for female youth. This study will explore whether the influence of mentor-mentee age difference on the relative benefits that accrue from participating in youth mentoring vary as a function of mentee sex.

Natural versus Programmatic Mentoring

Whether or not demographic similarity promotes or detracts from the benefits of youth mentoring may depend on the context of mentoring. Research in mentoring relationships differentiates between natural and program-based or formal mentoring. A programmatic mentoring relationship involves the pairing and monitoring of mentees and mentors, who are often given specific guidelines and expectations about the relationship. Informal or natural mentoring, in contrast, involves relationships that develop organically between youth and older non-parental adults in their existing social environment (Van Dam et al., 2018; Raposa, Dietz, & Rhodes, 2017). While not all youth participate in formal mentoring programs, most can identify an adult in their social network who has served as a natural mentor in some capacity. Considering natural mentoring relationships develop on their own and are self-sustaining sans involvement from a program, it is likely that youth who view demographic similarity as important would seek out and

connect with a mentor possessing the desired demographic characteristic. As a consequence, youth mentoring outcomes in natural mentoring relationships may be less influenced by demographic similarity between the mentor and youth. This possibility will be explored in the current investigation.

Limitations of Prior Research

Across the literature, researchers have attempted to investigate the role of demographic match in mentoring relationships in numerous ways. However, each empirical study seems to paint a complexly different contextual picture of mentor match within youth mentoring dyads, across and within different racial/ethnic and gender combinations. Clearly this investigative feat presents an array of challenges for researchers; there is a large number of important factors to consider. Some inconsistency in observed effects of mentor matching may be related to the varied operationalization of mentoring efficacy (i.e., measuring mentoring benefit via perceived relationship quality versus youth outcomes). While positive outcomes are associated with longer-lasting mentoring experiences, observing the effects of mentor match on actual developmental functioning (i.e. academic, emotional, and psychological measures) may make stronger arguments about how mentor matching consequences manifest in participating youth. In addition, evaluative mentoring research relies heavily on comparing developmental outcomes in youth that do or do not participate in mentoring programs, but little research examines how mentor-mentee match characteristics relate to a similar range of psychological and academic outcomes.

Existing studies examining demographic matching in mentoring relationships focus heavily on how matching on race/ethnicity or matching on gender affects youth mentoring outcomes. However, no study has previously investigated whether the degree of demographic similarity (matching on multiple demographic characteristics versus matching on only one

demographic characteristic) between a mentor and a youth is associated with a participating youth's later functioning. While theories support the idea that a greater degree of demographic similarity between a youth and their mentor would lead to stronger impacts for mentoring, mixed findings in extant literature suggest this may not be the case. The relative value of matching youth based on demographic similarity is an important research question because existing youth mentoring programs often rely on this practice without data supporting its utility. Multiple characteristics of youth and mentors influence their identity and subsequently influence their roles within a mentoring relationship.

The Present Study

The present study uses data collected from a sample of college students who reported engaging in a natural and/or programmatic mentoring relationship prior to entering college. The broad aim of this study is to investigate how levels of demographic similarity in youth mentoring experiences relate to subsequent student functioning. A number of constructs related to student functioning in academic and emotional domains were selected for this investigation to reflect the fact that the efficacy of youth mentoring extends to a broad range of developmental constructs. The first goal of this study is to examine whether degree of demographic similarity in mentoring dyads is associated with measures of academic and emotional functioning. It is hypothesized that students who identify as both the same race and sex as their mentor will have better academic and emotional functioning than students who only match with their mentor on race or sex. Although it is hypothesized that this association will be found across both academic and emotional domains, it is predicted that the association between degree of match similarity and measures of academic performance—including college GPA, college self-efficacy, and academic motivation—will be particularly strong. Measures of academic functioning may be more strongly associated with

degree of demographic match, as the provision of instrumental support (as opposed to less tangible psychological or social support) from a mentor who shares multiple demographic characteristics may increase the value of the support offered. Additionally, constructs such as college self-efficacy and academic motivation are closely tied to an individual's sense of identity and their ability to achieve their own goals. These particular constructs may have a stronger association with degree of demographic matching in a mentoring dyad based on aforementioned theory.

The second goal of this study is to examine whether the relationship between degree of demographic similarity and academic and emotional functioning varies as a function of student sex. Extant literature has established that male youth generally accrue greater benefit from mentoring experiences than female youth do (Dubois et al., 2011; Raposa et al., 2019). Females in mentoring relationships tend to have more interpersonal conflict with parents or caregivers and require greater psychosocial support from mentors (Rhodes, Lowe, Litchfield, & Walsh-Samp, 2008; Spendelow, Simonds & Avery, 2017; Rose, 2002). Clearly there are specific factors that influence how beneficial a relationship is for female youth; degree of similarity between a female youth and her mentor may be more strongly related to her subsequent functioning. Therefore, it is hypothesized that degree of demographic similarity will be more strongly associated with measures of academic and emotional functioning for female students relative to male students.

The third goal of this study is to examine whether the relationship between demographic similarity and academic and emotional functioning varies as a function of whether the mentoring is programmatic or natural. As previously discussed, natural mentoring relationships develop and sustain on their own, suggesting that whether or not demographic similarity is present may be less salient in a natural mentoring relationship than it would be in a program-constructed dyad.

Outcomes for youth involved in natural mentoring relationships may subsequently be less related to demographic similarity between the mentor and youth. Therefore, it is predicted that the association between demographic similarity and student measures of academic and emotional functioning will be stronger when mentoring is programmatic compared to natural.

The final goal of this study is to examine whether the age difference between mentor and mentee is associated with academic and emotional functioning. Specifically, it is speculated that a significant quadratic effect of age difference will emerge as it relates to measures of academic and emotional functioning; a larger age difference between the mentor and mentee will be associated with positive academic and emotional functioning until the age gap becomes sufficiently large at which time the relationship between age difference and student functioning will be attenuated. Also examined in the current investigation was the extent to which the association between mentor-mentee age difference and academic and emotional functioning varies as a function of student sex. Although this is an exploratory goal, it is speculated that a sex difference will emerge that suggests the importance of mentor-mentee age difference on young adult functioning is stronger for female students.

CHAPTER THREE: METHOD

Procedure

Participants were recruited from introductory psychology courses at a large, Southeastern university and received partial course credit for their participation. Participants voluntarily completed an online survey regarding mentoring relationships and academic, behavioral, and psychological functioning. Informed consent was obtained from participants prior to completing the study.

Participants

Data were collected from 422 undergraduate students. Of the 422 total students, 294 (70%) of them reported having a mentor that they had met prior to entering college (in youth) and were retained as participants for the current investigation. These participants were 49.7% male, 48.4% female, and 1.9% identifying as non-binary, preferring to self-describe, or preferring not to say. Due to a low number of non-binary participants and participants who did not identify their sex, 6 additional participants were excluded from the sample, for a total sample of 288. Participants were between the ages of 19-29 years (M = 20.2, SD = 2.07). The majority of mentored participants self-identified as White (81.9%) followed by Asian (8.0%), Black (4.5%), mixed race (4.2%), and less than 2% identified as other, Native Hawaiian or Pacific Islander, or preferred not to say. Participants in the sample reported that their youth mentors were 57.6% male and 42.4% female and ranged between the ages of 18 and 96 years (M = 41.65, SD = 13.26). The average reported length of mentoring relationships in the sample was 5.98 years (M = 5.98, SD = 4.80).

Measures

Demographic Information

Participants completed a demographic questionnaire assessing characteristics such as age, gender, race/ethnicity, sexual orientation, religion, class-standing in college, relationship status, marital status, income, and parental education level.

Academic Functioning

Grade point average.

To offer an objective view of a student's academic performance, students reported their current Grade Point Average (GPA) as part of the survey. GPA at the participants' university ranges from 0.00 to 4.00, with a higher GPA indicating higher letter grades earned in courses and better academic performance.

Academic motivation.

Academic motivation describes an individual's desire to succeed (as reflected in approach, persistence, and level of interest) in reference to academic subjects where a student's capability is judged against a standard of performance (DiPerna & Elliott, 1999). The Academic Motivation Scale (AMS) is a 28-item scale used to assess academic motivation. The survey items are answered on a 7-point Likert scale with a higher score representing a stronger endorsement of that particular motivation (Fairchild, Horst, Finney, & Barron, 2005). Academic motivation as measured by the AMS has been found to be significantly and positively correlated with other measures of school- and work-focused motivation and goal orientation (Fairchild et al., 2005). The AMS shows satisfactory levels of internal consistency, with a mean Cronbach's alpha value = .81 (Vallerand et al., 1992). Within the current study, the AMS demonstrated good internal consistency ($\alpha = .83$) for the total sample.

College self-efficacy.

Self-efficacy is viewed as an individual's perception of their ability to accomplish a specific goal or complete a specific task (Bandura, 1993). The College Self-Efficacy Inventory (CSEI; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993) assessed students' perception of their ability to attain college-related tasks. The CSEI includes 20 items rated on a Likert-scale ranging from 0 (not at all confident) to 10 (extremely confident). Extant literature has established that the CSEI's subscales show negative associations with academic concern and social anxiety, and positive associations with self-regulatory learning and academic confidence (Barry & Finney, 2007). The CSEI demonstrates adequate internal consistency of college self-efficacy total scores, with Cronbach's alpha = .91 (Brady-Amoon & Fuertes, 2011). Within the current study, the CSEI demonstrated good internal consistency ($\alpha = .95$) for the total sample.

Emotional Functioning

Generalized anxiety.

The Generalized Anxiety Disorder (GAD-7) questionnaire is a seven-item, self-report anxiety questionnaire designed to assess an individual's health status during the previous two weeks (Spitzer, Kroenke, Williams, & Lowe, 2006). Items query about the degree to which the individual has been bothered by feeling nervous, anxious, restless, and not being able to stop or control worrying. Each item was answered with one of four scaled options of how often they experience symptoms of anxiety: Not at all, Several days, Over half the days, or Nearly every day. The GAD-7 has been found to show internal consistency (Cronbach's alpha = .79-.91), with a sensitivity of 89% and specificity of 82% for generalized anxiety disorder (Williams, 2014). Within the current study, the GAD-7 demonstrated good internal consistency ($\alpha = .94$) for the total sample.

Emotion regulation.

Emotion regulation describes the capacity one has to modulate, maintain, and inhibit an emotional response to stimuli (Eisenberg & Sulik, 2012). The Emotion Regulation Questionnaire (ERQ) is a 10-item scale designed to measure respondents' tendency to regulate their emotions via cognitive reappraisal and expressive suppression (Gross & John, 2003). Respondents answered each item on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The ERQ has adequate internal consistency within the two subscales, with Cronbach's alpha for the suppression subscale = .73, and Cronbach's alpha for the reappraisal subscale = .79 (Melka, Lancaster, Bryant & Rodriguez, 2011). Within the current study, the ERQ yielded alpha coefficients of .69 and .85 for the expressive suppression and cognitive reappraisal subscales, respectively.

Perceived stress.

Perceived stress describes an individual's observations of the distress caused by events or circumstances in their life. The Perceived Stress Scale (PSS) is a widely used psychological instrument for measuring the degree to which situations in an individual's life are appraised as stressful (Cohen & Williamson, 1988). The measure is a 10-item questionnaire designed to assess how unpredictable, uncontrollable, and overloaded individuals find their lives to be. The items on this measure ask the frequency of stressful feelings rated on a 5-point Likert scale ranging from 0 (never) to 4 (very often). The PSS has been found to show internal consistency (Cronbach's alpha = .89) and maintains convergent validity with associating measures of stress (Roberti, Harrington & Storch, 2006). Within the current study, the PSS demonstrated good internal consistency ($\alpha = .81$) for the total sample.

Self-esteem.

Self-esteem refers to the perception or overall positive or negative attitude towards the self (Rosenberg & Rosenberg, 1978). The Rosenberg Self-Esteem Scale (RSE) is a 10-item Guttman scale intended to measure self-esteem (Rosenberg, 1965). Each item, regarding how much a person endorses the given statement, was answered on a four-point scale, with 0 indicating Strongly Disagree and 3 indicating Strongly Agree. The measure also demonstrates concurrent, predictive and construct validity using known groups (Rosenberg, 1979). The RSE has been found to show internal consistency with Cronbach's alpha = .91 (Sinclair et al., 2010). Test-retest reliability over a period of 2 weeks reveals correlations of .85 and .88, indicating good stability. Within the current study, the RSE demonstrated good internal consistency ($\alpha = .89$) for the total sample.

Data Analytic Plan

Descriptive statistics, correlations among study variables, and regression models were conducted in Mplus 8.1 (Muthén & Muthén, 2017). Primary analyses used maximum likelihood estimation with robust standard errors (MLR) to accommodate violations of normality. Separate models were estimated for measures of academic functioning and measures of emotional functioning and all models were fully saturated (i.e. all associations among variables were estimated in the model). Student minority status (dummy code 1 = minority mentee) was included as a control variable in all models and student sex (dummy code 1 = female mentee) was included as a control variable in models testing study goal 1; control variables were regressed on all independent variables in the models.

To address study goal 1, two path models were estimated to examine the extent to which degree of mentoring dyad demographic match similarity was associated with measures of college

student academic and emotional functioning. A variable was created to identify whether a student matched their mentor on race only (n = 49), sex only (n = 42), or both race and sex (n = 192). Only 5 students did not match their mentor on race or sex. Given the small number of participants not matching their mentor on sex or race, these participants were excluded from analyses. Included in regression models were two dummy coded demographic similarity variables: 1) Matched on Race Only (1 = matched on race; 0 = not matched on race) and 2) Matched on Sex Only (1 = matched on sex; 0 = not matched on sex). The category *Matching on Both Race and Sex* served as the reference group for interpreting the regression parameters for the demographic similarity dummy coded variables included in regression models.

To address study goal 2, a pair of multiple group models, with mentee sex as the grouping variable, were estimated to examine the extent to which the association between degree of mentoring dyad demographic match similarity (i.e. matching on race only, matching on sex only, matching on race and sex) and college student academic and emotional functioning varied by sex of the student. To address goal 3, two multiple group models, with mentor relationship type (natural mentor versus programmatic mentor) as the grouping variable, were estimated to examine the extent to which the association between degree of mentoring dyad demographic match similarity (i.e. matching on race only, matching on sex only, matching on race and sex) and college student academic and emotional functioning varied by the context of mentoring.

To address study goal 4, a multiple group model, with mentee sex as the grouping variable, was estimated to examine the extent to which age difference between the mentor and mentee was associated with college student academic and emotional functioning. Both the linear and quadratic effect of age difference were examined in each model. Measures of academic and emotional functioning were regressed on to age difference and age difference squared (i.e. quadratic effect).

Mentee sex (dummy code 1 = female mentee) and mentee minority status (dummy code 1 = minority mentee) were included as control variables in this model. For study goals 2, 3, and 4, models where parameter estimates were freely estimated were compared to models where estimates were constrained to be equal across the respective grouping variable (i.e. sex or mentoring type) to establish support of running multiple group path models.

Treatment of Missing Data

Analyses for this study were based on a sample of 288 students. Across variables, 0.30-20.5% of data were missing. Little's MCAR analysis was conducted in SPSS 26 to examine whether or not data were missing at random. All variables used in the current investigation were included in the MCAR analysis, and results from this test indicated that data were missing completely at random (χ^2 (110) = 78.92, p = .989). Full information maximum likelihood (FIML) estimation was used to address missing data, utilizing all available information in the data set to estimate model parameters.

CHAPTER FOUR: RESULTS

Descriptive Statistics

Means and standard deviations for study variables are presented in Table 1; correlations among primary study variables are reported in Table 2. There were significant sex differences in the mean scores for several study variables. Female students reported significantly higher college GPAs, academic motivation, generalized anxiety, and perceived stress than male students. Generally, variables were correlated in the expected direction. College GPA, academic motivation, and college self-efficacy were positively correlated. Measures of academic performance were positively correlated with self-esteem and negatively correlated with perceived stress. College GPA and college self-efficacy were negatively correlated with generalized anxiety. College self-efficacy was positively correlated with the cognitive reappraisal domain of emotion regulation and negatively correlated with the expressive suppression domain of emotion regulation. Academic motivation was positively correlated with cognitive reappraisal as well. Generalized anxiety, expressive suppression, and perceived stress were all negatively correlated with self-esteem. Perceived stress was positively correlated with generalized anxiety and negatively correlated with cognitive reappraisal. Cognitive reappraisal was positively correlated with expressive suppression and negatively correlated with self-esteem.

Primary Analyses

To examine whether degree of demographic similarity in mentoring dyads was associated with measures of academic and emotional functioning, two path models were estimated. Parameter estimates for the path models examining the association between demographic match and academic and emotional functioning are reported in Table 3. Findings indicated that level of

demographic match similarity in a mentoring relationship was not associated with academic or emotional functioning.

Demographic match similarity and functioning by sex.

To examine whether the relationship between degree of demographic similarity and academic and emotional functioning varies as a function of student sex, a pair of multiple group models, with mentee sex as the grouping variable, was estimated. For measures of both academic and emotional functioning, a model where parameter estimates were free to vary across sex was compared to a model where parameter estimates were constrained to be equal for males and females using a chi-squared differences test. When comparing freely estimated multiple group models to models constrained to be equivalent across sex, results from one of the two models suggested that models where parameters were freely estimated across sex fit the data better than models where parameters were constrained to be equal across sex (academic functioning, $\Delta\chi^2$ (Δ 8) = 21.801, $p < .05$). Findings suggested that for academic constructs, a freely estimated multiple group model was an appropriate approach for the data. There was no evidence that the associations between demographic match and emotional functioning varied by student sex.

The multiple group model examining the association between demographic match and academic functioning for males is shown in in Figure 1. Parameter estimates for the full path models are reported in Table 4. Male students who endorsed a sex-matched mentoring relationship reported significantly higher college GPAs than male students who endorsed a mentoring relationship matched on race and sex (β = .271, *SE* = .082, p < .01, 95% CI [.136, .405]). Additionally, male students who endorsed a race-matched mentoring relationship reported significantly higher levels of college self-efficacy than male students who endorsed a mentoring relationship matched on race and sex (β = .128, *SE* = .052, p < .05, 95% CI [.042, .214]). Female

students who endorsed a sex-matched mentoring relationship reported higher levels of academic motivation than female students who endorsed a mentoring relationship matched on race and sex, but only at the level of a non-significant trend (β = .173, *SE* = .092, p = .059, 95% CI [.022, .323]).

Demographic match similarity and functioning by mentoring type.

To examine whether the relationship between demographic similarity and academic and emotional functioning varies as a function of whether the mentoring is programmatic or natural, a pair of multiple group models was estimated. For measures of both academic and emotional constructs, a model where parameter estimates were free to vary across mentoring type was again compared to a model where parameter estimates were constrained to be equal for natural and program-based mentoring dyads using a chi-squared differences test. When comparing freely estimated multiple group models to models constrained to be equivalent across mentoring type, results from one of the two models suggested that models where parameters were freely estimated across mentoring type fit the data better than models where parameters were constrained to be equal across mentoring type (academic functioning, $\Delta\chi^2$ (Δ 8) = 18.766, $p < .05$). Findings suggested that for academic constructs, a freely estimated multiple group model was an appropriate approach for the data. There was no evidence that the associations between demographic match and emotional functioning in our model varied by mentoring type.

Results from the multiple group model examining the association between demographic match and academic functioning for students in program-based mentoring relationships is shown in shown in in Figure 2; associations between demographic match and academic functioning for students in natural mentoring relationships is shown in Figure 3. Parameter estimates for the full path models are reported in Table 5. Students in program-based mentoring relationships that were matched on race reported significantly higher college self-efficacy compared to students who

endorsed a mentoring relationship matched on race and sex (β = .203, *SE* = .084, p < .05, 95% CI [.065, .340]). Students in natural mentoring relationships that were matched on sex reported significantly higher academic motivation than students who endorsed a mentoring relationship matched on both race and sex (β = .194, *SE* = .071, p < .01, 95% CI [.077, .311]).

Age difference and functioning.

To examine the relationship between mentor-mentee age difference and subsequent college student academic and emotional functioning, both a linear and quadratic age difference term were created, and a path model was estimated. For measures of student functioning, a model where parameter estimates were free to vary across sex was compared to a model where parameter estimates were constrained to be equal for males and females using a chi-squared differences test. The freely estimated model resulted in a unique pattern of effects for male and female student, but the overall constrained model did not fit the data significantly worse than the freely estimated model. However, when the freely estimated model was compared to a model where only significant effects were constrained to be equal across models, there was a significant loss in model fit for the constrained model ($\Delta\chi^2$ (Δ 1) = 6.276, $p < .05$). Because a unique pattern of findings emerged for male and female students and because constraining significant effects to equality resulted in a significant loss of model fit, the freely estimated multiple group model was retained as the final model. Parameter estimates for the full path model are reported in Table 6. The multiple group model examining the association between mentor-student age difference and academic functioning for female students is shown in in Figure 4. This model indicated that there is a significant positive relationship between the quadratic term for mentor-student age difference and academic motivation for female students (β = .223, *SE* = .083, p < .05, 95% CI [.086, .359]). The positive association between age

difference and academic motivation becomes increasingly stronger as the age difference increases beyond the mean age difference of the sample. A graphic display of this relationship is shown in Figure 5.

CHAPTER FIVE: DISCUSSION

Youth mentoring is a popular form of prevention for at-risk youth and is found to have positive impacts on a wide range of outcomes (DuBois & Karcher, 2014; Raposa, Rhodes & Herrera, 2016). Despite its broad appeal, meta-analytic studies reveal that youth mentoring has modest effects (DuBois et al. 2011). Scholars have devoted increased attention in recent years to identifying factors that enhance the efficacy of youth mentoring interventions. Matching practices is one factor that may influence the extent to which a youth benefits from having a mentor. Previous studies have examined the ways in which single demographic characteristics shared between a mentor and mentee impact relationship quality, match duration, and some developmental outcomes (Kalbfleisch & Davies, 1991; Raposa et al., 2016; Spencer et al., 2018). The current investigation builds on existing literature by examining the relationship between level of demographic similarity in a youth mentoring dyad and subsequent college student academic and emotional functioning. Based on theory and prior research on mentoring efficacy, it was predicted that greater degree of demographic similarity in a mentoring dyad would be associated with more positive academic and emotional functioning, in addition to differences relative to the student's sex and the context of their mentoring relationship.

The first goal of this study was to examine whether demographic match similarity was associated with college student academic or emotional functioning. In models that did not examine these associations separately by student sex or mentoring type, demographic match similarity was not associated with academic or emotional functioning. However, a unique pattern of findings emerged when associations were examined separately for male and female college students (study goal 2) or students endorsing participating in program-based and natural mentoring relationships (study goal 3).

Past studies examining the efficacy of youth mentoring interventions have found differing patterns of effects based on mentee sex (Ensher & Murphy, 1997; Raposa et al., 2019; Tenenbaum, Crosby, & Gliner, 2001) and this study provides further support for considering mentee sex when examining youth mentoring efficacy. It was hypothesized that associations between degree of demographic similarity and measures of student functioning would be stronger for female students relative to male students, but this hypothesis was not supported in the current investigation. Instead, these associations were stronger for male students than for female students. Male students who reported a sex-matched mentoring relationship had significantly higher college GPAs than male students who had a mentoring relationship matched on both race and sex. There was also evidence that male students who reported a race-matched mentoring relationship endorsed significantly higher levels of college self-efficacy than male students who reported a relationship matched on both race and sex. These associations were not significant for female students. For female college students, there was a small association between match similarity and functioning, but only at the level of a non-significant trend; females who endorsed a mentoring relationship matched on sex reported higher academic motivation than females who endorsed a mentoring relationship matched on both race and sex.

The fact that matching on one demographic characteristic was more strongly associated with measures of college academic success than matching on multiple demographic characteristics did not align with study hypotheses and challenges the notion that mentees derive greater benefits from mentors of greater demographic similarity. In fact, these findings suggest that matching on multiple demographic characteristics could interfere with the academic benefits that a mentee could accrue from mentoring. Perhaps there is a shift in the balance between a relational and instrumental focus when mentoring dyads share multiple demographic

characteristics relative to dyads sharing only one characteristic. It is possible that mentoring activities take on more of a relational focus when members of the mentoring dyad feel more strongly connected to each other through sharing multiple characteristics. This relative emphasis on relational goals over instrumental goals may explain why mentoring dyads matching on multiple demographic characteristics score lower on measures of academic functioning compared to dyads matched on only one characteristic. Furthermore, matching on fewer identity characteristics may prove valuable in promoting self-efficacy; the ability of a mentor to offer a unique perspective may enable the mentee to acquire a sounder sense of self and a more comprehensive set of goals. Another possible explanation for the pattern of findings is that mentors and mentees that share a common race and gender, particularly dyads who identify with multiple marginalized groups, develop a shared narrative that emphasizes the struggles and barriers faced by groups with an intersecting minority status. This shared narrative may shape the content of mentor-mentee discussions, detracting the mentor's capacity to provide a youth with instrumental support. It is important to note that a similar pattern of associations between demographic matching and college student functioning did not emerge for the female students. It is possible that that female mentees are less sensitive to the degree of demographic matching similarity in mentoring relationships than male mentees.

The current study also provides partial support for the hypothesis that the association between mentor demographic similarity and student functioning depends on whether the mentee is participating in a program-based or natural mentoring relationship (study goal 3), with disparate associations found for each group. Students participating in program-based mentoring relationships that were matched on race reported significantly higher levels of college self-efficacy than students in program-based mentoring relationships matched on both race and sex.

Again, the current investigation found evidence that students who shared a racial identity with a youth mentor reported higher levels of college self-efficacy than youth sharing a common race and sex with their mentor. It appears, however, that this relationship holds only for students who reported participating in a program-based mentoring relationship. It is possible that because natural mentoring relationships often emerge organically (Van Dam et al., 2018), the relative benefits of matching on gender and/or race is reduced. In other words, in natural mentoring relationships students self-select into relationships with adults, gravitating toward individuals possessing characteristics they find important or acceptable.

Alternatively, the current study also revealed that students who endorsed a natural mentoring relationship matched on sex had significantly higher levels of academic motivation than students in natural mentoring relationships matched on both race and sex. This result is similar to the non-significant trend found for female participants mentioned previously; it appears that the motivation to perform well academically may be a construct more readily influenced by a mentor of the same sex. This pattern is consistent with extant literature indicating that in the context of academic success, females benefit from having female mentors. Studies have found that sex-matched mentoring relationships for female graduate students are associated with higher academic achievement and higher publication rates than for females in cross-sex mentoring dyads (Blake-Beard, et al., 2011; Goldstein, 1979). Perhaps there are ways in which having a model of academic achievement from someone who experiences similar challenges based on sex identity increases an individual's drive to meet academic goals.

Also considered in the current investigation was whether the age difference between a mentor and mentee was associated with emotional and academic functioning. Consistent with our findings for demographic similarity, no association emerged as significant when analyses were

aggregated across sex. However, significant associations emerged when models estimated associations separately for male and female students. The quadratic term for age difference was positively associated with female academic motivation. Plotting the quadratic effect revealed that scores on academic motivation became increasingly larger for female students as the age difference between a mentor and their female mentee increases beyond the mean age difference of the sample. This finding suggests that female youth may benefit more from receiving guidance and support from an older mentor, particularly around issues related to achievement and academic behavior. It is possible that a mentor closer in age to a female mentee may not have the experience or expertise to provide guidance around issues related to academic motivation. For female youth who experience higher levels of interpersonal difficulty and are more likely to engage in co-rumination (Raposa et al., 2019; Rhodes et al., 2008; Spendelow, Simonds, & Avery, 2017; Rose, 2002), having an older mentor to serve as an effective role model may be especially important. A female mentee may be more motivated to achieve her own academically related goals when her mentor has an established history of success in an area and can provide specific guidance around the process of academic goal attainment.

Limitations

The present study has several limitations that should be acknowledged. Findings from the current study inform our understanding of whether the degree of match similarity is associated with college student academic and emotional functioning but cannot speak to the benefits of matching on race and/or gender relative to not matching on these characteristics. A more comprehensive understanding of the influence of degree of match similarity would require a group of participants not matched on demographics. However, findings from the current study suggest that identifying mentoring dyads not matched on race, gender, or race and gender may be

difficult. Our sample is also comprised of students studying at a four-year university; it is unclear whether we would find similar associations (especially to academic functioning) in other individuals pursuing various post-secondary degrees.

The fact that only 18.1% of the sample identified as racial or ethnic minorities is also a limitation. It is possible that the associations found in the current investigation are driven in large part by students identifying as White. Relatedly, due to the lower number of students identifying as racial minorities, the current study was not powered to examine whether associations between demographic match similarity and college student functioning varied depending on the minority status of the student. In light of some prior research suggesting demographic matching in mentoring relationships is associated with more positive functioning for mentored individuals (Blake-Beard et al., 2011; Campbell & Campbell, 2007; Raposa et al., 2017), future research should seek to replicate findings from the current investigation in a sample with adequate representation of individuals from different racial and ethnic backgrounds.

This study was part of a larger project investigating the impacts of youth mentoring on college student academic, psychological, and behavioral functioning. The constructs included in the current investigation were limited to the types of constructs included in the overarching study; it is possible that demographic similarity may influences domains of functioning that were not captured by this investigation (e.g. substance use, delinquency, identify development). Finally, data for the current study were collected at a single point in time. It is possible that characteristics of the participants influenced the extent to which they, or important adults in their lives seeking mentoring services for them, sought out mentoring relationships with individuals of similar race or sex. Selection processes may have biased findings in the current investigation. Longitudinal investigations with long-term follow up assessments would help address this concern.

Conclusions and Future Research

This study examined whether the degree of demographic match similarity in a youth mentoring relationship is related to college student academic and emotional functioning. While some previous studies have found that youth sharing a single demographic characteristic (e.g. race or sex) experience higher quality mentoring relationships and mentoring relationships of longer duration (Kalbfleisch & Davies, 1991; Raposa et al., 2016; Spencer et al., 2018), empirical investigations have failed to consider whether the degree of similarity between a youth and their mentor is associated with subsequent functioning in young adulthood. Several interesting and unexpected finding emerged from the current investigation. First, it does not appear that a greater degree of demographic match similarity in a mentoring dyad (i.e. matching on both race and sex) leads to better emotional or academic outcomes than matching on only one characteristic. These findings do not align with theory on similarity in close relationships, which would suggest that greater demographic similarity would be related to more positive functioning (Abrams & Moio, 2009; Byrne, 1971; Ragins, 1997). It may be important to consider the nature of the constructs that had significant associations with match levels in mentoring relationships. A mentee identifying too closely with their mentor may not be beneficial in the context of particular outcomes. Diversity or the ability to offer a unique perspective may aid the mentee in developing a more coherent sense of self and a more robust catalogue of goals.

Additionally, the extent to which the degree of demographic match in a mentoring dyad matters depends on the conditions of the mentoring relationship, including both the sex of the mentee and the context of the mentoring experience. Specifically, race matching appears to be important for college self-efficacy for male mentees and in program-based mentoring relationships. Alternatively, sex matching had strong relationships with academic motivation for

individuals in natural mentoring relationships. These are important findings to consider in the discussion of future research directions; there are qualities related to particular academic outcomes that are influenced by mentoring demographic similarity in disparate ways. Results of this study generally highlight the complex nature in which various characteristics of both participants in a mentoring relationship may interact to generate more positive or more negative outcomes for participating youth. Findings from the current study suggest that it is important to consider the sex of the youth and the nature of the mentoring experience when examining the association between demographic similarity and measures of academic and emotional functioning. Evidence from the current study also suggests that demographic match similarity may be less relevant when the goal of the program is to shift the emotional functioning of youth. Associations between demographic match similarity were limited to academic outcomes in the current investigation.

Future studies seeking to address the question of whether demographic similarity increases the efficacy of youth mentoring should sample racially and ethnically diverse youth and extend outcome assessment beyond measures of mentoring relationship quality to include more distal measures of academic, social, or emotional functioning. Additionally, future research should investigate the implications of matching on variables other than race and sex. Understanding the support provided and benefit accrued in mentoring relationships where the dyad shares or has differences in socioeconomic status, religion, sexual orientation, gender, etc. is imperative as youth mentoring programs move to serving increasingly diverse groups of at-risk youth. In addition, programs should carefully consider how matching practices relate to the goals of their specific program; matching practices should not be implemented haphazardly. This study attempts to begin filling a gap in the literature that considers the degree of similarity in mentoring

relationships and how that degree influences the benefit attained from a mentoring experience. This study suggests that there are important ways in which matching on different characteristics is related to functioning in different domains; this is a topic that needs to be further investigated. Furthermore, demographic characteristics, and identity more broadly, operate in unique ways that should not be assessed in isolation from one another, as existing empirical research has done. Considering multiple identity characteristics and the degree to which mentored youth find those characteristics important is an additional area of investigation that may better inform matching practices in mentoring programs. There is a need for further research on the associations between degree of demographic similarity and developmental outcomes that appreciates the extent to which youth or young adults consider particular characteristics as an important part of their identity.

Compliance with Ethical Standards

All procedures involving human participants were performed in accordance with the ethical guidelines of the institutional research committee.

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APPENDICES

Table 1. *Means and Standard Deviations for College Student Measures of Academic and Emotional Functioning by Sex and Mentoring Type*

Variable	Total *n* = 288	Male Students *n* = 140	Female Students *n* = 148	Programmatic *n* = 58	Natural *n* = 230
	Mean (SD)	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*
College GPA	3.28 (.66)	3.14* (.68)	3.40 (.62)	3.37 (.58)	3.25 (.68)
College Self-Efficacy	144.74 (32.07)	145.01 (32.99)	144.48 (31.27)	141.25 (29.58)	145.62 (32.67)
Academic Motivation	28.17 (5.64)	27.14* (6.08)	29.14 (5.01)	27.98 (5.95)	28.21 (5.57)
Generalized Anxiety	14.34 (6.07)	13.32* (5.89)	15.30 (6.10)	13.62 (5.46)	14.52 (6.21)
Cognitive Reappraisal	28.03 (6.45)	27.92 (6.84)	28.14 (6.07)	28.81 (6.22)	27.84 (6.50)
Expressive Suppression	16.63 (4.77)	17.18 (5.00)	16.10 (4.50)	16.84 (4.75)	16.57 (4.79)
Perceived Stress	28.34 (6.43)	27.30* (6.12)	29.33 (6.58)	28.40 (5.55)	28.32 (6.65)
Self Esteem	29.47 (5.67)	29.72 (5.67)	29.22 (5.69)	30.14 (5.85)	29.30 (5.63)

Note. *Significant sex difference based on results of a t-test.

Table 2. *Correlations among Primary Study Variables*

Variable	1	2	3	4	5	6	7	8
1.College GPA	-							
2. College Self-Efficacy	.157*	-						
3. Academic Motivation	.224**	.477**	-					
4. Generalized Anxiety	-.220**	-.201**	-.091	-				
5. ER Cognitive Reappraisal	.063	.209**	.209**	-.113	-			
6. ER Expressive Suppression	-.077	-.155**	.032	.064	.161**	-		
7. Perceived Stress	-.251**	-.333**	-.192**	.642**	-.175**	.100	-	
8. Self Esteem	.278**	.469**	.246**	-.339**	.259**	-.250**	-.578**	-

Note. *p < .05, **p < .01 (two-tailed).

Table 3. *Model Results – Single Group Model Regressing College Student Functioning on Match Level*

				95% CI	
Variable	β	B	S.E.	Lower	Upper
Academic Functioning					
Sex Match → College GPA	.108	.202	.123	-.001	.405
Race Match → College GPA	-.006	-.010	.105	-.184	.163
Student Sex → College GPA	.193	.255**	.086	.114	.395
Student Minority Status → College GPA	-.090	-.154	.127	-.362	.054
Sex Match → College Self-Efficacy	-.011	-1.013	6.182	-11.182	9.157
Race Match → College Self-Efficacy	.103	8.744	4.719	.981	16.508
Student Sex → College Self-Efficacy	-.033	-2.102	3.716	-8.214	4.011
Student Minority Status → College Self-Efficacy	-.043	-3.615	5.068	-11.952	4.722
Sex Match → Academic Motivation	.116	1.843	1.128	-.012	3.699
Race Match → Academic Motivation	-.001	-.017	.840	-1.399	1.364
Student Sex → Academic Motivation	.182	2.054**	.661	.967	3.140
Student Minority Status → Academic Motivation	-.095	-1.384	.991	-3.014	.246
Emotional Functioning					
Sex Match → Generalized Anxiety	.040	.685	1.167	-1.235	2.604
Race Match → Generalized Anxiety	-.035	-.569	.882	-2.020	.882
Student Sex → Generalized Anxiety	.181	2.194**	.712	1.022	3.366
Student Minority Status → Generalized Anxiety	.099	1.560	1.121	-.283	3.404
Sex Match → Cognitive Reappraisal	-.010	-.174	1.195	-2.139	1.791
Race Match → Cognitive Reappraisal	-.030	-.506	.870	-1.938	.925
Student Sex → Cognitive Reappraisal	.024	.312	.761	-.940	1.564
Student Minority Status → Cognitive Reappraisal	.030	.506	1.150	-1.387	2.398
Sex Match → Expressive Suppression	-.025	-.339	.851	-1.739	1.060
Race Match → Expressive Suppression	.027	.341	.676	-.772	1.453
Student Sex → Expressive Suppression	-.120	-1.141*	.574	-2.084	-.197
Student Minority Status → Expressive Suppression	.000	.001	.735	-1.208	1.211
Sex Match → Perceived Stress	-.063	-1.146	1.156	-3.049	.756
Race Match → Perceived Stress	-.017	-.287	1.032	-1.985	1.411
Student Sex → Perceived Stress	.166	2.137**	.755	.896	3.379
Student Minority Status → Perceived Stress	.106	1.771	.949	.211	3.332
Sex Match → Self-Esteem	.067	1.073	1.083	-.709	2.855
Race Match → Self-Esteem	.053	.796	.874	-.641	2.233
Student Sex → Self-Esteem	-.052	-.594	.672	-1.701	.512
Student Minority Status → Self-Esteem	-.030	-.447	.923	-1.965	1.070

Note. $p < .05$, $^{**}p < .01$

Table 4. *Model Results – Multiple Group Model Regressing College Student Functioning on Match Level by Sex*

				95% CI	
Variable	β	B	S.E.	Lower	Upper
Academic Functioning - Male					
Sex Match → College GPA	.271	.478**	.247	.236	.721
Race Match → College GPA	.033	.077	.187	-.231	.385
Student Minority Status → College GPA	-.240	-.400*	.155	-.655	-.145
Sex Match → College Self-Efficacy	-.055	-4.740	8.655	-18.978	9.497
Race Match → College Self-Efficacy	.128	14.549*	5.702	5.168	23.929
Student Minority Status → College Self-Efficacy	-.206	-16.691*	7.578	-29.157	-4.224
Sex Match → Academic Motivation	.109	1.717	1.755	-1.171	4.605
Race Match → Academic Motivation	.046	.966	1.562	-1.602	3.535
Student Minority Status → Academic Motivation	-.190	-2.842	1.618	-5.503	-.181
Academic Functioning - Female					
Sex Match → College GPA	-.021	-.041	.164	-.312	.229
Race Match → College GPA	-.017	-.024	.132	-.241	.193
Student Minority Status → College GPA	.009	.015	.176	-.273	.304
Sex Match → College Self-Efficacy	.102	9.927	7.596	-2.569	22.423
Race Match → College Self-Efficacy	.128	9.290	6.185	-.884	19.465
Student Minority Status → College Self-Efficacy	.132	11.376*	5.599	2.165	20.587
Sex Match → Academic Motivation	.173	2.706	1.446	.327	5.085
Race Match → Academic Motivation	-.013	-.147	1.002	-1.796	1.502
Student Minority Status → Academic Motivation	.014	.198	1.171	-1.728	2.125
Emotional Functioning - Male					
Sex Match → Generalized Anxiety	-.034	-.525	1.645	-3.232	2.181
Race Match → Generalized Anxiety	.018	.373	1.398	-1.926	2.673
Student Minority Status → Generalized Anxiety	.112	1.617	1.634	-1.070	4.304
Sex Match → Cognitive Reappraisal	.062	1.098	1.739	-1.763	3.960
Race Match → Cognitive Reappraisal	.005	.122	1.114	-1.712	1.955
Student Minority Status → Cognitive Reappraisal	-.043	-.715	1.792	-3.663	2.234
Sex Match → Expressive Suppression	.075	.970	1.184	-.977	2.918
Race Match → Expressive Suppression	-.066	-1.127	1.148	-3.016	.762
Student Minority Status → Expressive Suppression	-.044	-.542	1.177	-2.479	1.395
Sex Match → Perceived Stress	-.060	-.948	1.415	-3.276	1.380
Race Match → Perceived Stress	.060	1.253	1.546	-1.290	3.796
Student Minority Status → Perceived Stress	.098	1.479	1.375	-.784	3.741

Table 4 continued. *Model Results – Multiple Group Model Regressing College Student Functioning on Match Level by Sex*

Sex Match → Self-Esteem	.006	.089	1.453	-2.301	2.478
Race Match → Self-Esteem	.002	.037	1.368	-2.214	2.287
Student Minority Status → Self-Esteem	-.016	-.220	1.236	-2.252	1.813
Emotional Functioning - Female					
Sex Match → Generalized Anxiety	.119	2.269	1.706	-.538	5.076
Race Match → Generalized Anxiety	-.056	-.795	1.122	-2.641	1.051
Student Minority Status → Generalized Anxiety	.107	1.802	1.570	-.781	4.385
Sex Match → Cognitive Reappraisal	-.065	-1.236	1.725	-4.074	1.602
Race Match → Cognitive Reappraisal	-.052	-.738	1.153	-2.634	1.158
Student Minority Status → Cognitive Reappraisal	.088	1.465	1.469	-.952	3.881
Sex Match → Expressive Suppression	-.132	-1.861	1.312	-4.019	.298
Race Match → Expressive Suppression	.083	.869	.818	-.478	2.215
Student Minority Status → Expressive Suppression	.022	.274	.939	-1.270	1.819
Sex Match → Perceived Stress	-.058	-1.201	1.911	-4.345	1.942
Race Match → Perceived Stress	-.061	-.934	1.321	-3.107	1.240
Student Minority Status → Perceived Stress	.109	1.980	1.321	-.193	4.153
Sex Match → Self-Esteem	.124	2.207	1.532	-.313	4.728
Race Match → Self-Esteem	.093	1.236	1.108	-.587	3.059
Student Minority Status → Self-Esteem	-.025	-.399	1.309	-2.553	1.755

Note. *p < .05, **p < .01.

Table 5. *Model Results – Multiple Group Model Regressing College Student Functioning on Match Level by Mentoring Type*

				95% CI	
Variable	β	B	S.E.	Lower	Upper
Academic Functioning – Program-based					
Sex Match → College GPA	.246	.357	.249	-.053	.767
Race Match → College GPA	-.111	-.174	.219	-.533	.186
Student Minority Status → College GPA	-.366	-.498	.268	-.939	-.057
Sex Match → College Self-Efficacy	-.132	-9.852	14.207	-33.223	13.519
Race Match → College Self-Efficacy	.203	16.429**	6.155	6.305	26.554
Student Minority Status → College Self-Efficacy	-.183	-12.895	11.559	-31.909	6.119
Sex Match → Academic Motivation	-.177	-2.666	2.824	-7.311	1.979
Race Match → Academic Motivation	-.162	-2.639	2.120	-6.126	.848
Student Minority Status → Academic Motivation	-.199	-2.810	2.472	-6.878	1.257
Academic Functioning - Natural					
Sex Match → College GPA	.071	.140	.137	-.086	.366
Race Match → College GPA	.059	.105	.117	-.088	.298
Student Minority Status → College GPA	-.042	-.076	.149	-.321	.170
Sex Match → College Self-Efficacy	.029	2.801	6.577	-8.018	13.621
Race Match → College Self-Efficacy	.073	6.282	5.586	-2.906	15.471
Student Minority Status → College Self-Efficacy	-.002	-.168	5.501	-9.218	8.881
Sex Match → Academic Motivation	.194	3.154**	1.180	1.213	5.095
Race Match → Academic Motivation	.083	1.212	.896	-.261	2.685
Student Minority Status → Academic Motivation	-.062	-.923	1.120	-2.764	.919
Emotional Functioning – Program-based					
Sex Match → Generalized Anxiety	-.049	-.684	2.311	-4.485	3.117
Race Match → Generalized Anxiety	.000	-.002	1.423	-2.342	2.339
Student Minority Status → Generalized Anxiety	.143	1.855	2.394	-2.082	5.793
Sex Match → Cognitive Reappraisal	-.132	-2.073	2.417	-6.050	1.904
Race Match → Cognitive Reappraisal	-.041	-.695	1.486	-3.140	1.750
Student Minority Status → Cognitive Reappraisal	.017	.256	2.280	-3.494	4.006
Sex Match → Expressive Suppression	.168	2.022	1.186	.071	3.972
Race Match → Expressive Suppression	.000	.002	1.302	-2.139	2.143
Student Minority Status → Expressive Suppression	.139	1.569	.996	-.069	3.208
Sex Match → Perceived Stress	-.071	-.997	1.462	-3.402	1.409
Race Match → Perceived Stress	.042	.639	1.726	-2.200	3.478
Student Minority Status → Perceived Stress	-.033	-.431	1.654	-3.153	2.290

Table 5 continued. *Model Results – Multiple Group Model Regressing College Student Functioning on Match Level by Mentoring Type*

Sex Match → Self-Esteem	-.142	-2.103	2.112	-5.578	1.371
Race Match → Self-Esteem	.045	.714	2.120	-2.773	4.200
Student Minority Status → Self-Esteem	.045	.623	2.009	-2.682	3.929
Emotional Functioning - Natural					
Sex Match → Generalized Anxiety	.053	.965	1.364	-1.279	3.209
Race Match → Generalized Anxiety	-.001	-.020	1.011	-1.683	1.643
Student Minority Status → Generalized Anxiety	.093	1.528	1.262	-.549	3.605
Sex Match → Cognitive Reappraisal	.018	.341	1.353	-1.885	2.568
Race Match → Cognitive Reappraisal	-.021	-.352	1.026	-2.041	1.336
Student Minority Status → Cognitive Reappraisal	.034	.591	1.324	-1.587	2.769
Sex Match → Expressive Suppression	-.078	-1.088	1.011	-2.752	.575
Race Match → Expressive Suppression	.005	.068	.757	-1.177	1.313
Student Minority Status → Expressive Suppression	-.042	-.530	.875	-1.969	.910
Sex Match → Perceived Stress	-.065	-1.261	1.402	-3.567	1.046
Race Match → Perceived Stress	.008	.140	1.187	-1.813	2.094
Student Minority Status → Perceived Stress	.133	2.356*	1.098	.549	4.162
Sex Match → Self-Esteem	.122	2.007	1.236	-3.567	1.046
Race Match → Self-Esteem	.045	.669	.939	-1.813	2.094
Student Minority Status → Self-Esteem	-.043	-.652	1.022	.549	4.162

Note. *p < .05, **p < .01.

Table 6. *Model Results – Multiple Group Model Regressing College Student Functioning on Mentor-Mentee Age Difference by Sex*

				95% CI	
Variable	β	B	S.E.	Lower	Upper
Academic Functioning - Male					
Age Difference (linear) → College GPA	-.091	-.005	.006	-.014	.004
Age Difference (quadratic) → College GPA	-.089	.000	.000	-.001	.000
Student Minority Status → College GPA	-.055	-.097	.157	-.355	.162
Age Difference (linear) → College Self-Efficacy	-.039	-.104	.205	-.441	.233
Age Difference (quadratic) → College Self-Efficacy	.003	.001	.012	-.019	.020
Student Minority Status → College Self-Efficacy	-.219	-18.351*	7.941	-31.414	-5.289
Age Difference (linear) → Academic Motivation	.119	.060	.045	-.014	.134
Age Difference (quadratic) → Academic Motivation	-.062	-.002	.003	-.008	.004
Student Minority Status → Academic Motivation	-.133	-2.094	1.257	-4.161	-.027
Academic Functioning - Female					
Age Difference (linear) → College GPA	-.012	-.001	.005	-.008	.007
Age Difference (quadratic) → College GPA	-.044	.000	.000	.000	.000
Student Minority Status → College GPA	-.030	-.052	.162	-.319	.215
Age Difference (linear) → College Self-Efficacy	.025	.059	.216	-.296	.414
Age Difference (quadratic) → College Self-Efficacy	.142	.016	.008	.003	.028
Student Minority Status → College Self-Efficacy	.141	12.522**	5.646	3.234	21.809
Age Difference (linear) → Academic Motivation	-.090	-.034	.032	-.086	.018
Age Difference (quadratic) → Academic Motivation	.223	.004**	.001	.002	.006
Student Minority Status → Academic Motivation	.051	.716	1.171	-1.211	2.642
Emotional Functioning - Male					
Age Difference (linear) → Generalized Anxiety	.043	.021	.044	-.051	.093
Age Difference (quadratic) → Generalized Anxiety	.063	.002	.003	-.003	.007
Student Minority Status → Generalized Anxiety	.111	1.685	1.514	-.806	4.176
Age Difference (linear) → Cognitive Reappraisal	-.032	-.018	.043	-.088	.052
Age Difference (quadratic) → Cognitive Reappraisal	-.084	-.003	.003	-.007	.001
Student Minority Status → Cognitive Reappraisal	-.035	-.610	1.798	-3.567	2.347
Age Difference (linear) → Expressive Suppression	.060	.025	.036	-.034	.084
Age Difference (quadratic) → Expressive Suppression	-.035	-.001	.002	-.005	.003
Student Minority Status → Expressive Suppression	-.004	-.047	1.177	-1.983	1.889
Age Difference (linear) → Perceived Stress	.078	.039	.039	-.024	.103
Age Difference (quadratic) → Perceived Stress	.018	.001	.003	-.004	.005
Student Minority Status → Perceived Stress	.087	1.380	1.399	-.921	3.681
Age Difference (linear) → Self-Esteem	.067	.031	.036	-.028	.090

Table 6 continued. *Model Results – Multiple Group Model Regressing College Student Functioning on Mentor-Mentee Age Difference by Sex*

Age Difference (quadratic) → Self-Esteem	-.063	-.002	.002	-.005	.001
Student Minority Status → Self-Esteem	.007	.105	1.286	-2.011	2.222
Emotional Functioning - Female	.122	.056	.039	-.008	.121
Age Difference (linear) → Generalized Anxiety	-.029	-.001	.001	-.003	.002
Age Difference (quadratic) → Generalized Anxiety	.217	3.755*	1.454	1.363	6.147
Student Minority Status → Generalized Anxiety	.024	.011	.037	-.050	.071
Age Difference (linear) → Cognitive Reappraisal	-.002	.000	.001	-.002	.002
Age Difference (quadratic) → Cognitive Reappraisal	.104	1.77	1.675	-.978	4.533
Student Minority Status → Cognitive Reappraisal	-.058	-.019	.030	-.068	.029
Age Difference (linear) → Expressive Suppression	-.026	.000	.001	-.002	.001
Age Difference (quadratic) → Expressive Suppression	-.045	-.565	1.193	-2.528	1.398
Student Minority Status → Expressive Suppression	.071	.035	.042	-.033	.104
Age Difference (linear) → Perceived Stress	-.091	-.002	.002	-.005	.001
Age Difference (quadratic) → Perceived Stress	.135	2.529*	1.206	.546	4.513
Student Minority Status → Perceived Stress	-.066	-.028	.038	-.090	.034
Age Difference (linear) → Self-Esteem	.094	.002	.001	.000	.004
Age Difference (quadratic) → Self-Esteem	.030	.482	1.176	-1.453	2.417

Note. *p < .05, **p < .01.

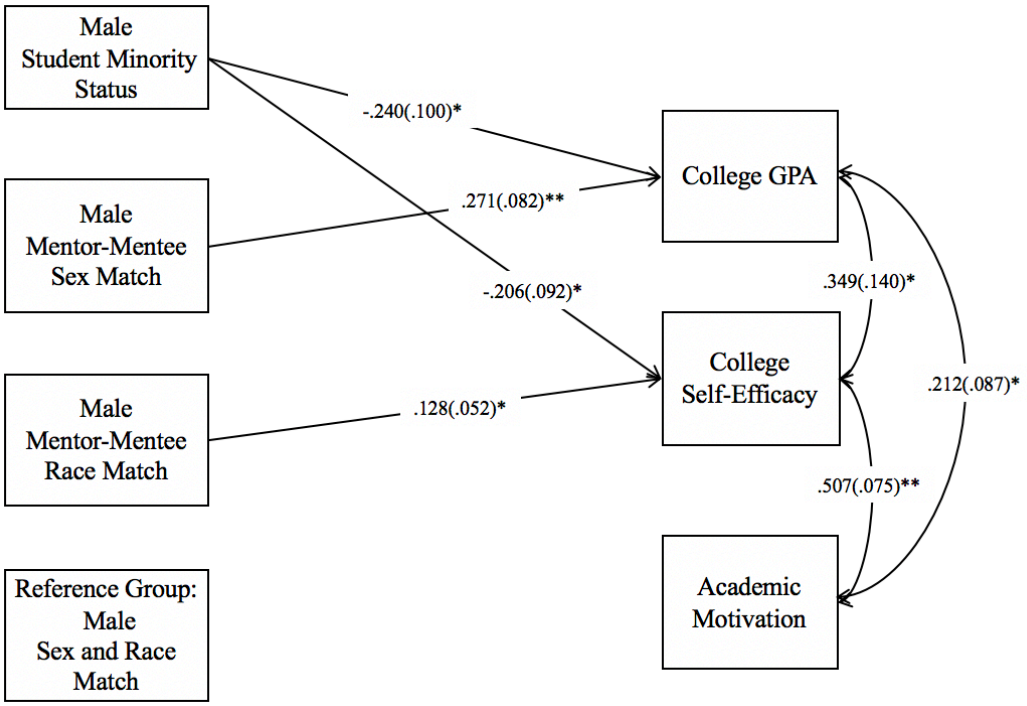

Figure 1. A multiple group model regressing colleges student academic functioning on demographic match level for male students, controlling for student minority status. All indicated relationships are significant ($p < .05$). Level of significance is noted as follows: *$p < .05$. **$p < .01$. Numbers in parentheses represent standard error.

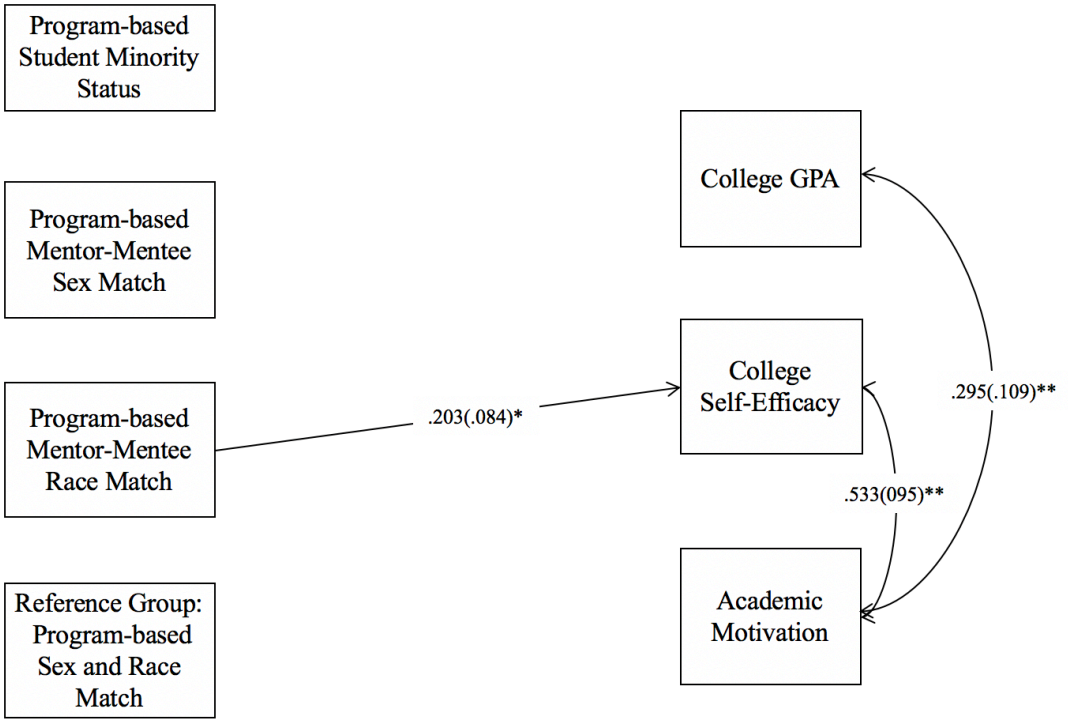

Figure 2. A multiple group model regressing colleges student academic functioning on demographic match level for students in program-based mentoring relationships, controlling for student minority status. All indicated relationships are significant ($p < .05$). Level of significance is noted as follows: *$p < .05$. **$p < .01$. Numbers in parentheses represent standard error.

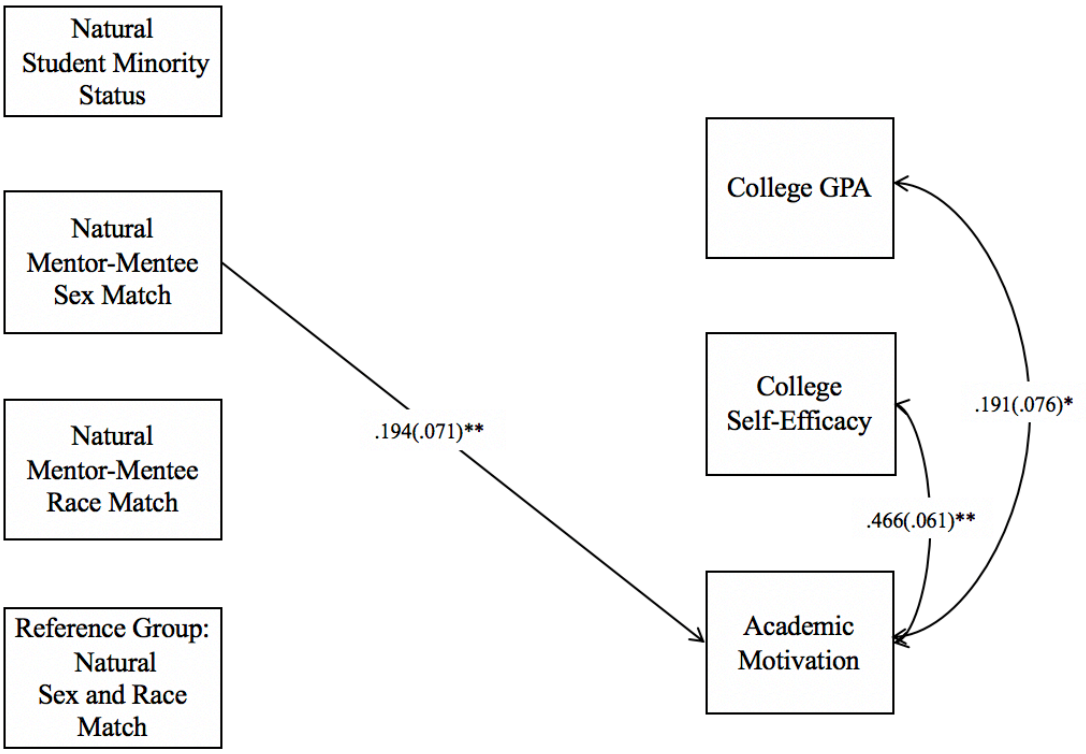

Figure 3. A multiple group model regressing colleges student academic functioning on demographic match level for students in natural mentoring relationships, controlling for student minority status. All indicated relationships are significant ($p < .05$). Level of significance is noted as follows: *$p < .05$. **$p < .01$. Numbers in parentheses represent standard error.

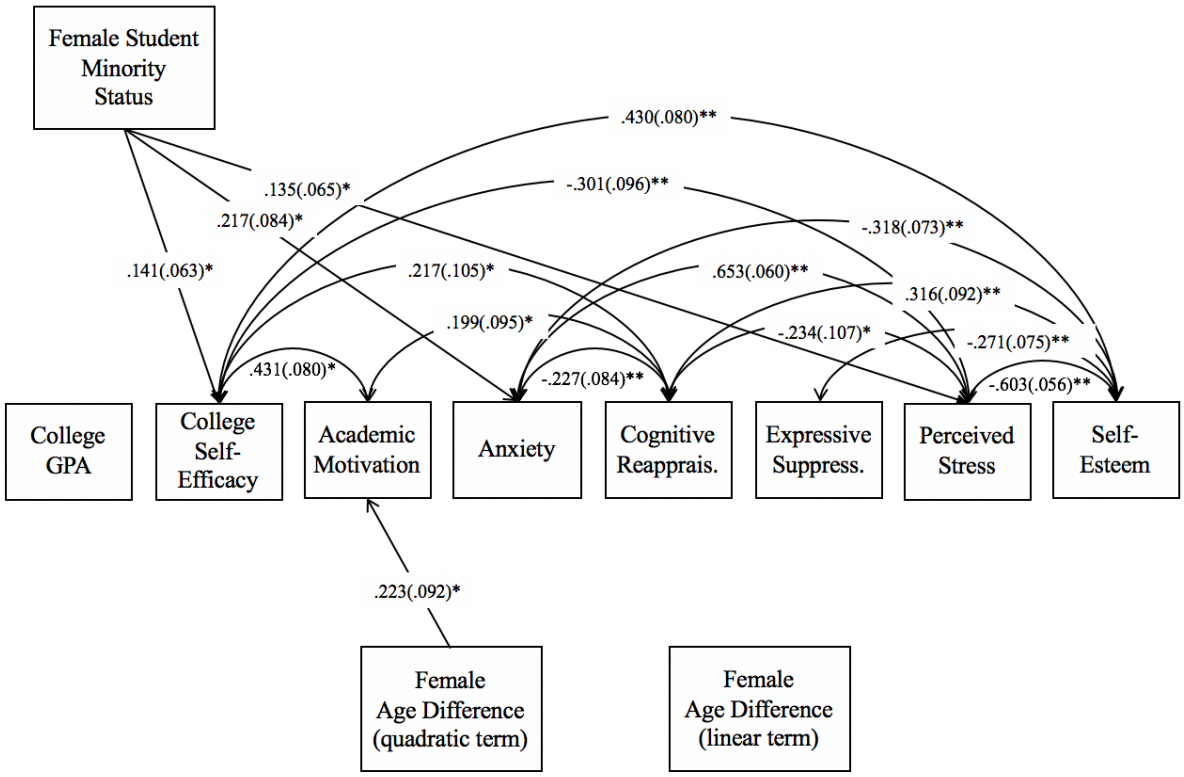

Figure 4. A multiple group model regressing female college student functioning on mentor-mentee age difference, controlling for student minority status. All indicated relationships are significant ($p < .05$). Level of significance is noted as follows: *$p < .05$. **$p < .01$. Numbers in parentheses represent standard error.

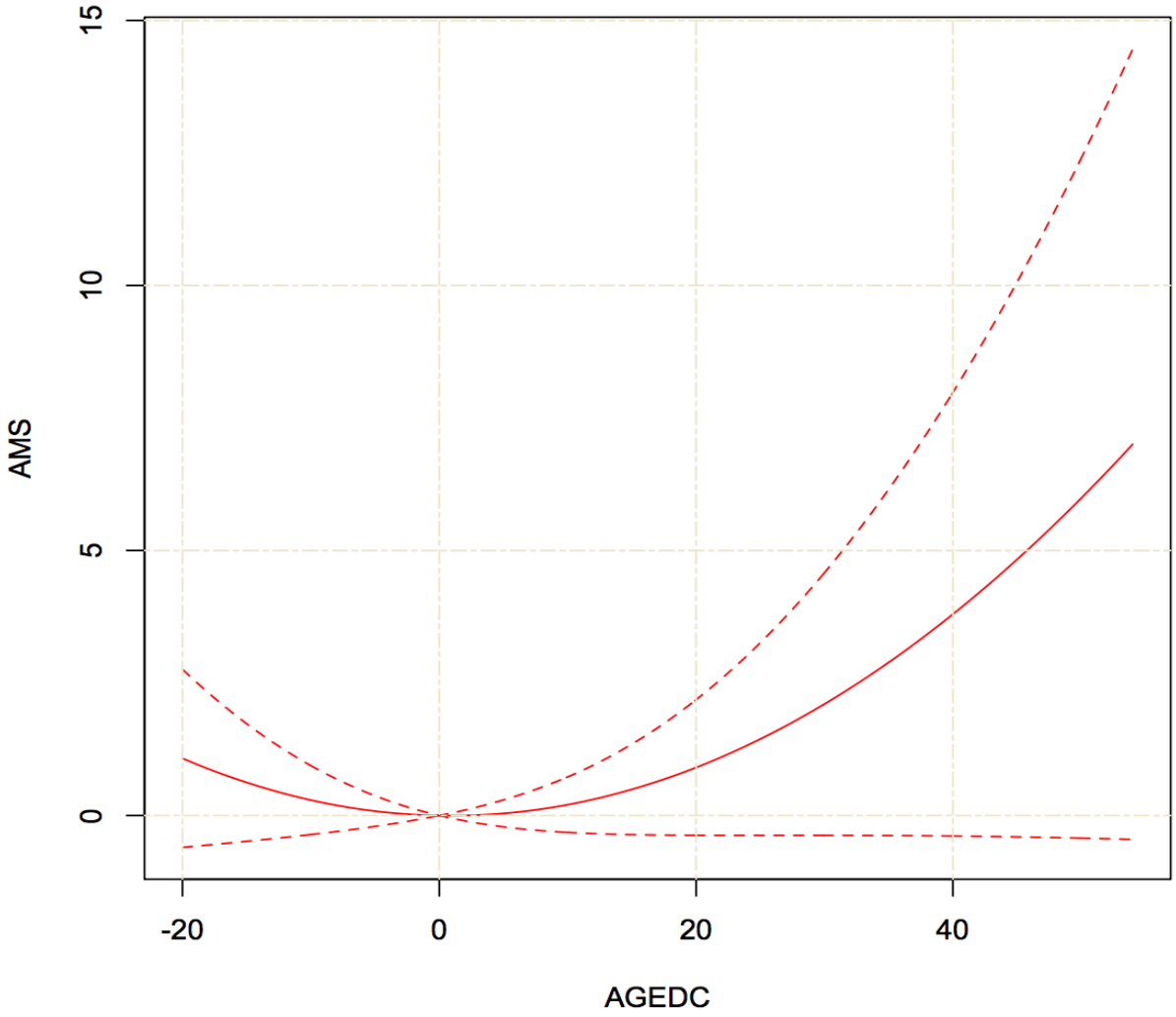

Figure 5. A graph examining the relationship between the quadratic term for mentor-student age difference and academic motivation for female students. AMS = Academic Motivation; AGEDC = Quadratic Age Difference.

VITA

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